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PREFACE TO THIS EDITION

CA INTER - COST REGULAR COURSE PRACTICAL BOOK

Through the medium of this book, we present to you the **Cost & Management Accounting** concepts in a refined and simplified manner. Each chapter has been covered through detailed questions to help in learning by practising. Effort has been done to write this book in a way which makes it easy to understand and remember.
I am thankful to God, my family, my friends and most importantly my students for always loving me and having faith in my hard work.
Also, the sincere effort, persistence and determination of our associated teachers, staff members, well Wishers and students are highly appreciated.
Every effort has been taken to avoid any errors / omissions, but errors are inevitable. Any mistake may kindly be brought to our notice and it shall be dealt with suitably.
We welcome your valuable suggestions and feedback in developing this book further.

As per ICAI
Under the Revised Scheme of Education and Training, at the **Intermediate Level**, **students are expected** not only to acquire professional knowledge but also to develop the ability to apply the knowledge in real-life business situations. The process of learning should also help the students in imbibing professional skills, i.e., the intellectual skills and communication skills, necessary for achieving the desired professional competence.

In our book
Every effort has been taken to present this subject in a manner that students are able to acquire the skill set as prescribed by ICAI.

The entire syllabus has been covered in two books.
Book 1 - Presents practical questions.
The concepts shall be covered in class and students will be able to acquire knowledge to solve questions.
We shall be doing about 65% of all the questions in class and the rest shall be given as homework.
The solution set for homework questions will be provided in soft copy in your batch.

Book 2 - Presents theory questions.
We will discuss these questions in separate theory classes.
You must read theory well to be able to write theoretical answers and solve MCQs

Multiple Choice Questions (MCQs) will be presented on our www.canitinguru.com

Thank You !!
CA. Nitin Guru

ABOUT THE AUTHOR

CA Nitin Guru is a Post Graduate in Commerce & a Member of The Institute of Chartered Accountants of India.

- He is the lead trainer for various courses for Costing and Financial management at **CA NITIN GURU CLASSES**.
- He is a First Class Graduate from Delhi College of Arts and Commerce.
- He is a College Topper & a Gold Medallist.
- His areas of specialisation are Cost & Management Accounting, Financial Management, Economics for Finance and Strategic Financial Management.
- At a young age, he has amassed vast experience of teaching over 60,000 students.
- His style of teaching, techniques and guidelines for preparing for examination are well accepted & acknowledged by all the students. His friendly and interactive approach makes him popular amongst the students.
- He has maintained a very high passing rate. He has been a Visiting Faculty to various Professional Institutes & MBA Colleges in the past.

CLASS ATTRACTIONS

- Start the topic from the base.
- Explains reasons and logic inbuilt behind concepts and has a unique method of making students understand them.
- Real life examples make classes interesting & lively.

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- CA Inter - Cost & Management Accounting (Regular & Fast Track)
- CA Inter - Financial Management (Regular & Fast Track)
- CA Final - Advanced Financial Management

Thank You !!
CA Nitin Guru

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CA INTER - COST REGULAR COURSE PRACTICAL BOOK

Material Cost

Stock Level and Economic Order Quantity

Question 1- Rtp

M/s Tanishka Materials Private Limited produces a product which names "ESS". The consumption of raw material for the production of "ESS" is 210 Kgs to 350 Kgs per week. Other information is as follows:

Procurement Time	5 to 9 Days
Purchase price of Raw Materials	₹100 per kg
Ordering Cost per Order	₹200
Storage Cost	1% per month plus ₹2 per unit per annum

Consider 365 days a year.

You are required to Calculate the following

a. Economic Order Quantity
b. Reorder Level (ROL)
c. Maximum Stock Level
d. Minimum Stock Level
e. Average Stock Level
f. Number of orders to be placed per year
g. Total Inventory Cost
h. If the supplier is willing to offer 1% discount on purchase of total annual quantity in two orders , whether offer is acceptable?
i. If the answer is no, what should be the counter offer w.r.t. percentage of discount?

Question2 - Rtp

Reliable India Pvt Ltd is a startup company engaged in manufacturing of Agro Tech product from a raw material, which is purchased at ₹190 per kg. The company incurs a handling cost of ₹1,470 plus, freight of ₹770 per order. The incremental carrying cost of inventory of raw material is ₹3 per kg per month. In addition, the cost of working capital finance on the investment in inventory of raw material is ₹20 per kg per annum. The annual production of the product is 1,50,000 units and 3 units are obtained from one kg. of raw material. Assume 360 days in a year.

Required:

1. Calculate the economic order quantity of raw materials.
2. Determine, how frequently company should order for procurement be placed.
3. If the company proposes to rationalize placement of orders on quarterly basis, determine the percentage of discount in the price of raw materials should be negotiated?

Question 3 - Study Material

CALCULATE the Economic Order Quantity from the following information. Also state the number of orders to be placed in a year.

Consumption of materials per annum	10,000 kg.
Order placing cost per order	₹50
Cost per kg. of raw materials	₹2

Storage costs: 8% on average inventory

Question 4 - Study Material

COMPUTE EOQ and the total variable cost for the following

Annual Demand =5000 units
Unit Price = ₹20
Order Cost = ₹16
Storage Cost = ₹2 % per annum
Interest rate = ₹12 % per annum
Obsolescence rate = 6% per annum

DETERMINE the total cost that would result for the items if an incorrect price of ₹12.8 is used.

Computation of EOQ and Stock Level

Question 5 - Pyq, Study Material

PQR Ltd., manufactures a special product, which requires 'ZED'. The following particulars were collected for the year 2005-06:

Monthly demand of Zed	: 7,500 units
Cost of placing an order	: ₹500
Re-order period	: 5 to 8 weeks
Cost per unit	: ₹60
Carrying cost % p.a.	: 10%
Normal usage	: 500 units per week
Minimum usage	: 250 units per week
Maximum usage	: 750 units per week

Required:
(i) Reorder quantity.
(ii) Reorder level.
(iii) Minimum stock level.
(iv) Maximum stock level.
(v) Average stock level.

Question 6 - Pyq

Following details are related to a manufacturing concern:

Re-order Level	1,60,000 units
Economic order quantity	90,000 units
Minimum stock level	1,00,000 units
Maximum stock level	1,90,000 units
Average lead time	6 days
Difference between minimum lead time & maximum lead time	4 days

Calculate:
(i) Maximum consumption per day
(ii)Minimum consumption per day

Question 7 - Pyq

The annual carrying cost of material 'X' is ₹3.6 per unit and its total carrying cost is ₹9,000 per annum. What would be the Economic order quantity for material 'X', if there is no safety stock of material X ?

Question 8 - Pyq

The following information relating to a type of Raw material is available: Annual demand 2000 units Unit price ₹20.00 .Ordering cost per order ₹20.00. Storage cost 2% p.a.Interest rate 8% p.a., Lead time Half-month. Calculate economic order quantity and total annual inventory cost of the raw material.

Question 9 - Pyq

KL Limited produces product 'M' which has a quarterly demand of 8,000 units. The product requires 3 kgs. quantity of material 'X' for every finished unit of product. The other information are follows:
Cost of material 'X' : ₹20 per kg.
Cost of placing an order Carrying Cost : ₹1000 per order
Carrying Cost : 15% per annum of average inventory
You are required:
(i) Calculate the Economic Order Quantity for material 'X'.
(ii) Should the' company accept an offer of 2 percent discount by the supplier, if he wants to supply the annual requirement of material 'X' in 4 equal quarterly installments ?

Question 10 - Pyq

Primex Limited produces product 'P'. It uses annually 60,000 units of a material 'Rex' costing ₹10 per unit. Other relevant information are:

Cost of placing an order	₹800 per order
Carrying cost	15% per annum of average inventory
Re-order period	10 days
Safety stock	600 units

The company operates 300 days in a year.
You are required to calculated:
(i) Economic Order Quantity for material 'Rex'.

(ii) Reorder Level
(iii) Maximum Stock Level
(iv) Average Stock Level

Question 11 - Pyq

A company manufactures a product from a raw material, which is purchased at ₹80 per kg. The company incurs a handling cost of ₹370 plus freight of ₹380 per order. The incremental carrying cost of inventory of raw material is ₹0.25 per kg per month. In addition, the cost of working capital finance on the investment in inventory of raw material is ₹12 per kg per annum. The annual production of the product is 1,00,000 units and 2.5 units are obtained from one kg. of raw material.
Required:
(i) Calculate the economic order quantity of raw materials.
(ii) Advice, how frequently company should order for procurement be placed.
(iii) If the company proposes to rationalize placement of orders on quarterly basis, what percentage of discount in the price of raw materials should be negotiated?
Assume 360 days in a year.

Question 12 - Pyq, Study Material

You are required to calculate the following levels for part No. 123456 from the information given here under
(a) Re-ordering level,
(b) Maximum level,
(c) Minimum level,
(d) Danger level,
(e) Average Stock level.

The following data May be used to calculate the re-ordering quantity.

Total Cost of purchasing relating to the order.	₹20
Number of units to be purchased during the year.	5,000
Purchase Price per unit including transportation.	₹50
Annual Cost of storage of one unit.	₹5

Lead Times	
Average	10 days
Maximum	15 days
Minimum	6 days
Maximum for emergency purchase	4 days
Rate of Consumption	
Average	15 units per day
Maximum	20 units per day

Question 13 - Study Material, Mtp

In manufacturing its products a company uses three raw materials A, B, C in respect of which the following apply

Raw Materials	Usage per unit of Product (Kg.)	Reorder Quantity (Kg.)	Price Per Kg. (Re.)	Delivery Period (Weeks)	Order Level (Kg.)	Minimum Level (Kg.)
A	10	10,000	0.10	1 to 3	8,000	-
B	4	5,000	0.30	3 to 5	4,750	-
C	6	10,000	0.15	2 to 4	-	2,000

Weekly production varies from 175 to 225 units, averaging 200. What would you expect the quantities of the following to be:
(a) Minimum Stock of A,
(b) Maximum Stock level of B,
(c) Re-order level of C, and
(d) Average Stock level of A?

Question 14 -

Q Ltd uses annually 48,000 units of raw material costing ₹1.20 per unit. Placing each order costs ₹45 and inventory carrying costs are 15% per year of the average inventory values:

(i) Find the E.O.Q.

(ii) Suppose that Q Ltd follows the E.O.Q. policy and it operates for 300 days a year, that the procurement time is 12 operating days and the safety stock is 500 units, find

(a) Re-ordering level,

(b) The maximum level,

(c) The minimum level;

(d) The average inventory.

Question 15 - Pyq

Primex Limited produces product 'P'. It uses annually 60,000 units of a material 'Rex' costing ₹10 per unit. Other relevant information is:

Cost of placing an order	₹800 per order
Carrying cost	15% per annum of average inventory
Re-order period	10 days
Safety stock	600 units

The company operates 300 days in a year. You are required to calculate:

(i) Economic order quantity for material 'Rex'.

(ii) Reorder level

(iii) Maximum stock level

(iv) Average stock level

Question 16 - Pyq

Reorder quantity of material X is 5,000 kg.; Maximum level 8,000 kg.; Minimum usage 50 kg. per hour; minimum re-order period 4 days; daily working hou₹in the factory is 8 hou₹You are required to calculate the re-order level of material X.

Question 17 - Study Material, Pyq

Two components, A and B are used as follows:

Normal usage	50 units per week each
Maximum usage	75 units per week each
Minimum usage	25 units per week each
Reorder quantity	'A': 300; 'B': 500
Re-order period	'A': 4 to 6 weeks, 'B': 2 to 4 weeks

Calculate for each component:

(a) Reorder level,

(b) Minimum level,

(c) Maximum level and

(d) Average Stock level.

Question 18 - Rtp

A company uses four raw materials A, B, C and D for a particular product for which the following data apply :–

Raw Material	**Usage per unit of product (Kg.)**	**Re-order Quantity (Kg.)**	**Price per Kg. (₹)**	**Delivery period (in weeks)**			**Re-order level (Kg.)**	**Minimum level (Kg.)**
				Minimum	Average	Maximum		
A	12	12,000	12	2	3	4	60,000	?
B	8	8,000	22	5	6	7	70,000	?
C	6	10,000	18	3	5	7	?	25,500
D	5	9,000	20	1	2	3	?	?

Weekly production varies from 550 to 1,250 units, averaging 900 units of the said product. What would be the following quantities:–

(i) Minimum Stock of A?

(ii) Maximum Stock of B?

(iii) Re-order level of C?
(iv) Average stock level of A?
(v) Re-order level of D?
(vi) Minimum Stock level of D?

Question 19 -

(i) If the minimum stock level and average stock level of raw-material A are 4,000 and 9,000 units respectively, find out its 'Re-order quantity'.
(ii) The annual carrying cost of material 'X' is ₹3.6 per unit and its total carrying cost is ₹, 9000 per annum. What would be the Economic order quantity for material 'X', if there is no safety stock of material X?
(iii) The demand for a certain product is random. It has been estimated that the monthly demand of the product has a normal distribution with a mean of 390 units. The unit price of the product is ₹25. Ordering cost is ₹40 per order and inventory carrying cost is estimated to be 35 per cent per year. Calculate Economic Order Quantity (EOQ).

EOQ and Associated Cost

Question 20 - Study Material, Pyq

PQR Limited produces a product which has a monthly demand of 52,000 units. The product requires a component X which is purchased at ₹15 per unit. For every finished product, 2 units of component X are required. The ordering cost is ₹350 per order and the Carrying cost is 12% p.a.
Required:
(i) Calculate the economic order quantity for Component X.
(ii) If the minimum lot size to be supplied is 52,000 units, what is the extra cost, the company has to incur?
(iii) What is the minimum carrying cost, the Company has to incur?

Question 21 -

The following information is available about A Ltd which manufactures Air Conditioner. The company has an average total inventory of ₹200 lakhs and places 12,000 orders every year.

Procurement costs	₹4,00,000
Purchase Department Expenses	₹4,00,000
Stores Warehouse Personnel Salary:	₹4,00,000
Obsolescence, Spoilage, etc	₹1,20,000
Floor Space Charge Related to Stores Activities (Warehousing)	₹2,80,000
Cost of Collecting Material	₹80,000
Cost of Receiving Material	₹70,000
Cost of Inspection	₹1,00,000
Cost of Material Handling for Warehousing Activities	₹3,00,000
Cost of Bill Payment	₹1,50,000
Interest	12.5%
Insurance Charges	2%

The company wants to buy a certain part, whose price is ₹24 each and the annual requirement is 34,560 units. Calculate cost of placing an order, cost of carrying inventory as a % of inventory and EOQ.
[Ordering Cost = ₹100 per order; Cost of carrying inventory as a % of Inventory = 20%; EOQ = 1,200 units]

Question 22 -

The India Gate Ltd buys and then sells (as bread) 5.2 million kgs of rice annually. The rice must be purchased in multiples of 2000 kgs. Ordering cost, which includes grain lifting removal charges of ₹7,000 are ₹10,000 per order. Annual carrying costs are 4% of the purchase price per kg of ₹10. The company maintains a safety stock of 4,00,000 kgs. The delivery time is six weeks.
(a) What is the E.O.Q.?
(b) At what inventory level should reorder be placed to prevent the drawal on the safety stock?
(c) What was the total inventory cost?
(d) The rice processor agrees to pay the lifting and removal charges if India Gate Ltd will purchase rice in quantities of 6,50,000 kgs. Would it be to the India Gate advantage to order under this alternative?

EOQ with Discount and Evaluation of Supplier's Proposals

Question 23 - Study Material, Pyq

A Company manufactures a special product which requires a component 'Alpha'.
The following particulars are collected for the year 2008:

- Annual demand of Alpha 8,000 units
- Cost of placing an order ₹200 per order
- Cost per unit of Alpha ₹400
- Carrying cost % p.a. 20%

The company has been offered a quantity discount of 4% on the purchase of 'Alpha', provided the order size is 4,000 components at a time.
Required:
(i) Compute the economic order quantity.
(ii) Advise whether the quantity discount offer can be accepted.

Question 24 - Pyq

JP Limited manufactures of a special product, follows the policy of EOQ (Economic Order Quantity) for one of its components. The component's details are as follows

Purchase price per component	200
Cost of an Order	100
Annual Cost of Carrying one Unit in Inventory	10% of Purchase Price
Total Carrying Cost of Inventory and Ordering per Annum	4,000

The company has been offered a discount of 2% on the price of the component provided the lot size is 2,000 components at a time. (Assume that the inventory carrying cost does not carry according to discount policy).
You are required to:
(a) Compute the EOQ.
(b) Advise whether the quantity offer can be accepted.
(c) Would your advice differ if the company is offered 5% discount on a single order?

Question 25 - Study Material

Anil & Company buys its annual requirement of 36,000 units in 6 instalments. Each unit costs ₹1 and the ordering cost is ₹25. The inventory carrying cost is estimated at 20% of unit value. FIND the total annual cost of the existing inventory policy. CALCULATE ,How much money can be saved by Economic Order Quantity?

Question26 - Pyq

X Ltd. is reviewing its stock policy, and has the following alternatives available for the evaluation of stock:

- Purchase stock twice in a month 400 units
- Purchase monthly 800 units
- Purchase every three months 2,400 units
- Purchase six monthly 4,800 units
- Purchase annually 9,600 units

It is ascertained that the purchase price per unit is ₹40 for deliveries upto 2,000 units. A 5% discount is offered by the supplier on the whole order where deliveries are 2,001 to 4,000 units and 10% reduction on the total order for deliveries in excess of 4,000 units. Each purchase order incurs administration costs of ₹250. Interest on capital and other storage costs are ₹12.50 per unit of average stock quantity held.
Calculate the optimum order size.

EOQ and Related Concepts

Question 27 - Study Material, Pyq

The complete Gardener is deciding on the economic order quantity for two brands of lawn fertilizer: Super Grow and Nature's Own. The following information is collected:

particulars	Fertiliser	
	Super Grow	Nature's Own
Annual Demand	2,000 Bags	1,280 Bags
Relevant ordering cost per purchase order	₹1,200	₹1,400
Annual relevant carrying cost per bag	₹480	₹560

Required:

(i) Compute EOQ for Super Grow and Nature's Own.
(ii) For the EOQ, what is the sum of the total annual relevant ordering costs and total annual relevant carrying costs for Super Grow and Nature's Own?
(iii) For the EOQ, compute the number of deliveries per year for Super Grow and Nature's Own.

Question 28 -
A toy cost ₹20 whose requirement is expected to be 24,000 units per year. The set-up cost is ₹4.000 per set-up. The carrying cost is 1.25% of the inventory per unit per month. Calculate economic order quantity (EOQ), number of set-ups and total relevant cost.

Question 29 -
Ananya Ltd. produces a product 'Exe' using a raw material Dee. To produce one unit of Exe, 2 kg of Dee is required. As per the sales forecast conducted by the company, it will able to sale 10,000 units of Exe in the coming year. The following is the information regarding the raw material Dee:
(i) The Re-order quantity is 200 kg. less than the Economic Order Quantity (EOQ).
(ii) Maximum consumption per day is 20 kg. more than the average consumption per day.
(iii) There is an opening stock of 1,000 kg.
(iv) Time required to get the raw materials from the suppliers is 4 to 8 days.
(v) The purchase price is ₹125 per kg.
There is an opening stock of 900 units of the finished product Exe. The rate of interest charged by bank on Cash Credit facility is 13.76%.[Take 364 days for a year]
To place an order company has to incur ₹720 on paper and documentation work. From the above information FIND OUT the followings in relation to raw material Dee:
(a) Reorder Quantity
(b) Maximum Stock level
(c) Minimum Stock level
(d) CALCULATE the impact on the profitability of the company by not ordering the EOQ.

EOQ Analysis – Timing of an Order

Question 30 -
Mr. True supplies 60 calculators each week day to various shops. Calculators are purchased from the manufacturer in lots of 240 each of ₹2400 per lot. Every order incurs a handling charge of ₹120 plus a freight charge of ₹500. Small lots of different quantities also can be ordered and all orders are filed the next day. The incremental cost is Re. 1.20 per year to store a calculator in inventory. The wholesaler finances inventory investment by paying its holding company 4% monthly for borrowed funds.
(a) How much calculators should be ordered at a time in order to minimize the total inventory cost?
(b) Assume that there are 250 week days in a year. How frequently should he order?

Question 31 - Mtp
A company produces a product 'AB' by using two raw materials - 'Material Ae' and 'Material Be' in the ratio of 5:3.A sales volume of 50,000 kgs is estimated for the month of December by the manager,expecting the trend will continue for entire year. The ratio of input and output is 8:5.Other Information about Raw Material Ae is as follows:

Purchase Price	₹150 per kg
Re-order period	2 to 3 days
Carrying Cost	12%

Note: Material Ae is perishable in nature and if not used within 3.5 days of purchase it becomes obsolete.
To place an order for material 'Ae', the company has to incur an administrative cost of ₹375 per order. At present, material 'Ae' is purchased in a lot of 7,500 kgs. to avail the discount
on purchase. Company works for 25 days in a month and production is carried out evenly.
You are required to CALCULATE:
1. Economic Order Quantity (EOQ) for Material Ae;
2. Maximum stock level for Material Ae.

Question32 - Pyq
ZED Company supplies plastic crockery to fast food restaurants in metropolitan city. One of its products is a special bowl, disposable after initial use, for serving soups to its customer Bowls are sold in pack 10 pieces at a price of ₹50 per pack.

The demand for plastic bowl has been forecasted at a fairly steady rate of 40,000 packs every year. The company purchases the bowl direct from manufacturer at ₹40 per pack within a three days lead time. The ordering and related cost is ₹8 per order. The storage cost is 10% per cent per annum of average inventory investment.
Required:
(i) Calculate Economic Order Quantity.
(ii) Calculate number of orders needed every year.
(iii) Calculate the total cost of ordering and storage bowls for the year.
(iv) Determine when should the next order is to be placed. (Assuming that the company does maintain a safety stock and that the present inventory level is 333 packs with a year of 360 working days.)

Question 33 - Pyq

A company manufactures a product from a raw material, which is purchased at ₹60 per kg. The company incurs a handling cost of ₹360 plus freight of ₹390 per order. The incremental carrying cost of inventory of raw material is Re. 0.50 per kg. per month. In addition, the cost of working capital finance on the investment in inventory of raw material is ₹9 per kg. per annum. The annual production of the product is 1,00,000 units and 2.5 units are obtained from one kg of raw material:
Required:
(i) Calculate the economic order quantity of raw materials.
(ii) Advice, how frequently should orders for procurement be placed.
(iii) If the company proposes to rationalize placement of orders on quarterly basis, what percentage of discount in the price of raw materials should be negotiated?

[(i) 2,000 kg (ii) 18 days, 20 orders , (iii) 2%]

EOQ with Discount – Tabular Analysis

Question 34 - Pyq

ABC Limited has received an offer of quantity discounts on its order of materials as under:

Price per tonne (₹)	Tonnes (Nos.)
4,800	Less than 50
4,580	50 and less than 100
4,560	100 and less than 200
4,440	200 and less than 300
4,320	300 and above

The annual requirement for the material is 500 tonnes. The ordering cost per order is ₹6,250 and the stock holding cost is estimated at 25% of the material cost per annum.
Required:
(i) Compute the most economical purchase level.
(ii) Compute E.O.Q. if there are no quantity discounts and the price per tone is ₹5,250.

Question 35 - Study Material

(a) EXE Limited has received an offer of quantity discounts on its materials as under:

Price per ton (₹)	**Ton (Nos.)**
1,200	Less than 500
1,180	500 and less than 1,000
1,160	1,000 and less than 2,000
1,140	2,000 and less than 3,000
1,120	3,000 and above.

The annual requirement for the material is 5,000 tons. The ordering cost per order is ₹1,200 and the stock holding cost is estimated at 20% of material cost per annum. You are required to COMPUTE the most economical purchase level.
(b) WHAT will be your answer to the above question if there are no discounts offered and the price per ton is ₹1,500?

Question 36 - Mtp

The yearly production of a company's product which has a steady market is 40,000 units. Each unit of a product requires 1 kg. of raw material. The cost of placing one order for raw material is ₹1,000 and the inventory carrying cost is ₹20 per annum. The lead time for procurement of raw material is 36 days and a safety stock of 1,000 kg. of raw materials is maintained by the company. The company has been able to negotiate the following discount structure with the raw material supplier:

Order Quantity (Kg)	Discount (₹)
Upto 6,000	NIL
6,001 – 8,000	4,000
8,001 – 16,000	20,000
16,001 – 30,000	32,000
30,001 – 45,000	40,000

You are required to:

(i) Calculate the reorder point considering 30 days in a month.

(ii) Prepare a statement showing the total cost of procurement and storage of raw material after considering the discount of the company elects to place one, two, four or five orders in the year.

(iii) State the number of orders which the company should place to minimise the costs after taking EOQ also into consideration.

EOQ and Inventory Level Planning

Question 37 - Pyq

(a) From the following information, find out the economic order quantity.

Annual consumption	12,000 units (360 days)
Cost per unit	₹1
Ordering cost	₹12 per order
Inventory carrying charge	24%
Normal Lead time	15 days
Safety Stock	30 days consumption.

(b) Also find out:

(1) When should the order be placed; and

(2) What should be the ideal inventory level immediately before the order material is received.

[(a) EOQ = 1,095 units; (b) (i) 1,500 units; (ii) 1,000 units]

EOQ – Stock Out – Reorder Point

Question 38 - Pyq

IPL Limited uses a small costing in one of its finished products. The castings are purchased from a foundry. IPL limited purchases 54,000 castings per year at a cost of ₹800 per casting. The castings are used evenly throughout the year in the production process on a 360 day per year basis. The company estimates that it costs ₹9,000 to place a single purchase order and about ₹300 to carry one casting in inventory for a year. The high carrying costs results from the need to keep the castings in carefully controlled temperature and humidity conditions, and from the high cost of insurance.

Delivery from the foundry generally takes 6 days, but it can take as much as 10 days. The days of delivery time and percentage of their occurrence are shown as follows:

Delivery Time (Days)	Percentage of Occurrence
6	75
7	10
8	5
9	5
10	5

Required:

(i) Compute the economic order quantity (EOQ)?

(ii) Assume the company is willing to assume a 15% risk of being out of stock. What would be the safety stock? The re-order point?

(iii) Assume the company is willing to assume a 5% risk of being out of stock. What would be the safety stock? The re-order point?

(iv) Assume 5% stock – out risk. What would be the total cost of ordering and carrying inventory for one year?

(v) Refer to the original data. Assume that using process re-engineering the company reduces its cost of placing a purchase order to only ₹600. In addition, company estimates that when the waste and inefficiency caused by inventories are considered, the true costs of carrying a unit in stock is ₹720 per year.
(a) Compute the new EOQ?
(b) How frequently would the company be placing an order, as compared to the old purchasing policy?
[(i) 1,800 castings; (ii) Safety stock 150 castings, Re-order point 1,050 Castings; (iii) Safety stock 450 castings, Re-order point 1,350 Castings; (iv) Total cost of ordering = ₹2,70,000, Total cost of carrying = ₹4,05,000; (v) (a) EOQ = 300 castings, (b) Each Order is placed after 12 days]

Stock Levels – Reverse Working – Computing Lead Time and Usage Rates

Question 39 -

Karthik Ltd provides you the following information:-

- ROL: 64,000 units,
- ROQ: 40,000 units,
- Minimum Stock: 34,000 units,
- Maximum Stock: 94,000 units
- Average Lead: Time in the past been 2.5 days.
- The difference between maximum and minimum lead times is 3 days.

Determine the Usage Rates and Lead Times (maximum & minimum).

EOQ without Material Price

Question 40 -

Given the following data for an item of uniform demand:

Annual demand	800 units
Cost of an item	₹40
Ordering cost	₹800
Inventory carrying Cost	40%
Back order cost	₹10

Find out:
(i) Minimum cost order quantity.
(ii) Maximum number of back orders
(iii) Time between orders
(iv) Total annual cost. **[(i) 456 units, (ii) 281 units, (iii) 205 days, (iv) ₹34,807]**

Reorder Level – Stock Out Costs – Probability Analysis

Question 41 - Rtp

ABC Ltd distributes a wide range of Water purifier systems. One of its best-selling items is a standard water purifier. The management of ABC Ltd uses the EOQ decision model to determine optimal number of standard water purifiers to order. Management now wants to determine how much safety stock to hold.
ABC Ltd estimates the annual demand (360 working days) to be 36,000 standard water purifiers Using the EOQ decision model, the Company order 3,600 standard water purifiers at a time. The lead-time for an order is 6 days. The annual carrying cost of one standard purifier is ₹450. Management has also estimated the additional stock-out costs would be ₹900 for shortage of each standard water purifier.
ABC Ltd. has analyzed the demand during 200 re-order periods.
The records indicate the following patterns:

Demand during Lead Time	Number of Quantity was demand
540	6
560	12
580	16
600	130
620	20
640	10
660	6
Total	200

1. Determine the level of safety stock for standard water purifier that ABC Ltd. should maintain in order to minimize expected stock-out costs and carry costs. When computing carrying costs, assume that the safety stock is on hand at all times and that there is no overstocking caused by decrease in expected demand (consider safety stock level of 0, 20, 40, and 60 units).
2. What would be ABC's new re-order point?
3. What factors ABC Ltd. should have considered in estimating stock-out costs?

Question 42 - Study Material

M/s Tyrotubes trades in four wheeler tyres and tubes. It stocks sufficient quantity of tyres of almost every vehicle. In year end 20X8-X9, the report of sales manager revealed that M/s Tyrotubes experienced stock-out of tyres.
The stock-out data is as follows:

Stock-out of Tyres	No. of times
100	2
80	5
50	10
20	20
10	30
0	33

M/s Tyrotubes loses ₹150 per unit due to stock-out and spends ₹50 per unit on carrying of inventory. DETERMINE optimum safest stock level.

Question 43 -

Square Ltd uses a particular type of Raw Material which costs ₹5. The demand averages 800 units p.a. and the EOQ has been calculated at 200 units. Holding costs are 20% p.a. and stock out costs have been estimated at ₹2 per item that is unavailable. Demand and lead times vary, but fortunately the company has kept records of usage over 50 lead timed as follows:

Usage in Lead Time	No. of times recorded
25 – 29 units	1
30 – 34 units	8
35 – 39 units	10
40 – 44 units	12
45 – 49 units	9
50 – 54 units	5
55 – 59 units	5
	50

From the above, the optimal safety stock level should be calculated if the Reorder level is to be 45 units, 50 units, 55 units & 60 units. **[55 units]**

Inventory TurNover Ratio

Question 44 - Rtp

Write a brief note on Inventory TurNover Ratio. Why would Management try to maintain Inventory TurNover at higher Levels?
Answer:
Inventory TurNover Ratio May be computed as follows:
(a) Cost based:
(b) Quantity Based:

Inventory TurNover Ratio:
(i) Computation of inventory turNover ratios for different items of material and comparison of the turNover rates, provides a useful guidance for measuring inventory performance.
(ii) High inventory turNover ratio indicates that the material in the question is a fast moving one.
(iii)A low turNover ratio indicates over-investment and locking up of the working capital in inventories.

Question 45 - Pyq

How are slow moving and non-moving items of stores detected? What steps are necessary to reduce such stocks?

Answer:

The existence of slow moving and non-moving item of stores can be detected in the following ways:
(a) By preparing and scanning periodic reports showing the status of different items or stores.
(b) By calculating the stock holding of various items in terms of number of days/months of consumption.
(c) By computing ratios periodically, relating to the issues as a percentage of average stock held.
(d) By implementing the use of a well-designed information system.

Necessary steps to reduce stock of slow moving and non-moving item of stores:
(i) Proper procedure and guidelines should be laid down for the disposal of non-moving items, before they further deteriorates in value.
(ii) Diversify production to use up such materials.
(iii) Use these materials as substitute, in place of other materials.

Determination of Inventory TurNover Ratio

Question 46 - Study Material, Pyq

The following data are available in respect of material X for the year ended 31st March,2007:

Opening Stock	₹90,000
Purchases during the year	₹2,70,000
Closing Stock	₹1,10,000

Calculate:
(i) Inventory turNover Ratio; an
(ii) The number of days for which the average inventory is held.

Question 47 - Study Material, Pyq

From the following data for the year ended 31st December, 2006, calculate the inventory turNover ratio of the two items and put forward your comments on them.

particulars	Material A (₹)	Material B (₹)
Opening stock 1.1.2006	10,000	9,000
Purchase during the year	52,000	27,000
Closing stock 31.12.2006	6,000	11,000

Fast Moving v/s Slow Moving Material

Question 48 -

Find out the fast-moving materials from the following information. How will you deal slow-moving items?

particulars	Material X	Material Y
Maximum Stock Level	2,500 kg	1,200 kg
Minimum Stock Level	1,000 kg	600 kg
Issues during the period	31,250 kg	5,400 kg
Average Cost per kg of material	₹45	₹60

Ideal Level of Inventory TurNover Ratio – Effect of Last Sales and Carrying Costs

Question 49 - Pyq

Senapati Ltd uses inventory turNover as one of the performance measures to evaluate its production Manager. Currently, its inventory turNover (based on Cost of Goods Sold ÷ Average Inventory) is 10 times per annum, as compared with the industry average of 4. Average Sales are ₹4,50,000 p.a. Variable Cost of Sales are 70% of Sales are Fixed Costs are ₹10,000 per annum. Carrying Costs of inventory levels are resulting in lost sales due to Stock-outs. The sales manager has made as estimate based on stock- out reports as under –

Inventory Policy	Inventory TurNover	Sales
Current	10	₹4,50,000
A	8	₹5,00,000
B	6	₹5,40,000
C	4	₹5,65,000

On the basis of the above estimates and assuming a 40% tax rate and an after – tax required return of 20% on investment in inventory, which policy would you recommend?

ABC Analysis

Question 50 - Rtp, Pyq

What is ABC analysis?

Answer:

The items are divided into three categories according to their importance, namely, their value and frequency of replenishment during a period.

(i) **'A' Category** of items consists of only a small percentage i.e., about 10% of the total items handled by the stores but require heavy investment about 70% of inventory value, because of their high prices or heavy requirement of both.

(ii) **'B' Category** of items are relatively less important; they May be 20% of the total items of material handled by stores. The percentage of investment required is about 20% of the total investment in inventories.

(iii) **'C' Categor**y of items do not require much investment; it May be about 10% of total inventory value but they are nearly 70% of the total items handled by store.

Question 51 - Pyq

What are the advantages of ABC analysis?

Answer:

The advantages of ABC analysis are the following:

(i) **Continuity in Production:** It ensures that, without there being any danger of interruption of production for want of materials or stores, minimum investment will be made in inventories of stocks of materials or stocks to be carried.

(ii) **Lower Cost:** The cost of placing orders , orders , receiving goods and maintaining stocks is minimized especially if the system is coupled with the determination of proper economic order quantities.

(iii) **Less Attention Required:** Management time is saved since attention need be paid only to some of the items rather than all the items as would be the case if the ABC system was not in operation.

(iv) **Systematic Working:** With the introduction of the ABC system, much of the work connected with purchases can be systematized on a routine basis to be handled by subordinate staff.

Question 52 - Study Material

A factory uses 4,000 varieties of inventory. In terms of inventory holding and inventory usage, the following information is compiled:

No. of varieties of inventory	%	% value of inventory holding (average)	% of inventory usage (in end-product)
3,875	96.875	20	5
110	2.750	30	10
15	0.375	50	85
4,000	100.00	100	100

CLASSIFY the items of inventory as per ABC analysis with reasons.

Question 53 - Pyq

MM Ltd. has provided the following information about the items in its inventory.

Item Code Number	Units	Unit Cost (₹)
101	25	50
102	300	01
103	50	80
104	75	08
105	225	02
106	75	12

MM Ltd. has adopted the policy of classifying the items constituting 15% or above of Total Inventory Cost as 'A' category, items constituting 6% or less of Total Inventory Cost as 'C' category and the remaining items as 'B' category.

You are required to:

(i) Rank the items on the basis of % of Total Inventory Cost.

(ii) Classify the items into A , B and C categories as per ABC Analysis of Inventory Control adopted by MM Ltd.

Question 54 - Study Material

From the following details, DRAW a plan of ABC selective control:

Item	Units	Unit cost (₹)
1	7,000	5.00
2	24,000	3.00
3	1,500	10.00
4	600	22.00
5	38,000	1.50
6	40,000	0.50
7	60,000	0.20
8	3,000	3.50
9	300	8.00
10	29,000	0.40
11	11,500	7.10
12	4,100	6.20

Just-in-Time-Purchases (JIT)

Question 55 - Pyq

What is Just-in-Time (JIT) Purchases? What are its advantages?

Answer:

Just in time (JIT) purchases means the purchase of goods or materials such that delivery immediately precedes their use.

Advantages of JIT purchases:

1.The suppliers of goods or materials cooperate with the company and supply requisite quantity of goods or materials for which order is placed before the start of production.

2.JIT purchases results in cost savings for example, the costs of stock out, inventory carrying, materials handling and breakage are reduced.

3.Due to frequent purchases of raw materials, its issue price is likely to be very close to the replacement price. Consequently the method of pricing to be followed for valuing material issues becomes less important for companies using JIT purchasing.

JIT purchasing are now attempting to extend daily deliveries to as many areas as possible so that the goods spend less time in warehouses or on store shelves before they are exhausted.

Effect of JIT Purchasing

Question 56 -

The Apple Corporation manufactures I pods. Apple is deciding whether to implement a JIT production system, which would require annual tooling costs of ₹150,000.

Apple estimates that the following annual benefits would arise from JIT production:

a) Average inventory would decline by ₹7,00,000 from ₹9,00,000 to ₹2,00,000.

b) Insurance, space, materials-handling, and setup costs, which currently total ₹2,00,000, would decline by 30%.

c) The emphasis on quality inherent in JIT systems would reduce rework costs by 20%. Apple currently incurs ₹3,50,000 on rework.

d) Better quality would enable Apple to raise the selling prices of its products by ₹3 per unit. Apple sells 30,000 units each year. Apple required rate of return on inventory investment is 12% per year.

Required: Calculate the net benefit or cost to the Apple Corporation from implementing a JIT production system. **[Net Benefit = ₹1,54,000]**

Question 57 -

Kumar Enterprises has decided to adopt JIT policy for materials. The following effects of JIT policy are identified –

- To implement JIT, the Company has to modify its production and material receipt facilities at a Capital Cost of ₹6,00,000. The new facilities will require a cash operating cost ₹48,000 per annum.
- Raw Material Stockholding will be reduced from ₹28,00,000 to ₹8,00,000.
- The Company can earn 15% on its long – term investments.

- The company can avoid rental expenditure on storage facilities amounting to ₹30,000 per annum. Property Taxes and Insurance amounting to ₹12,000 will be saved due to JIT programme.
- Presently there are 7 workers in the Stores Department at a Salary of ₹3,000 each per month. After implementing JIT Scheme, only 2 workerswill be required in this Department. Of the balance 5 workers, 3 will be transferred to other departments, while 2 workers' employment will be terminated.
- Due to receipt of smaller lots of Raw Materials, there will be some disruption of production. The Costs of Stock-out will be ₹3,40,000 in the first year only. This Stock-out Costs can be brought down from the second year onwards.

Determine the financial impact of the JIT policy. Is it advisable for the Company to implement JIT system?

Stores Ledger

Question 58 -

Transactions below are extracted from books of Accounts of a factory as on 31st December 2011, compute (a) consumption value of raw materials in the month and (b) value of closing stock as on 31st December, 2011, under the following four methods of pricing issues:

(i) FIFO
(ii) LIFO
(iii) Moving Weighted Average Cost (end of month)
(iv) Periodic Weighted Average cost (end of month).

Show the results in a tabular form.

2011 December		Quantity in Units	Rate per Unit
1	Opening Stock	300	9.70
3	Purchases	250	9.80
11	Issues	400	
15	Purchases	300	10.05
20	Issues	210	
25	Purchases	150	10.30
29	Issues	100	

Question 59 - Study Material, Pyq

A. T. Ltd. furnishes the following store transaction for September, 2002:

1.9.02 Opening balance	25 Units ₹162.50
4.9.02 Issues Req. No. 85	8 Units
6.9.02 Receipts from B & Co. GRN No. 26	50 Units @ ₹5.75 per unit
7.9.02 Issues Req. No. 97	12 Units
10.9.02 Returns to B & Co.	10 Units
11.9.02 Issues Req. No. 108	15 Units
13.9.02 Issues Req. No. 110	20 units
15.9.02 Receipts from M & Co. GRN No. 33	25 Units @ ₹6.10 per unit
17.9.02 Issues Req. No. 121	10 units
19.9.02 Received replacement-from B & Co. GRN No. 38	10 Units
20.9.02 Returned from department material of M & Co. MRR No. 4	5 Units
22.9.02 Transfer from Job 182 to Job 187 in the Dept. M TR 6	5 Units
26.9.02 Issues Req. No. 146	10 Units
29.9.02 Transfer from Dept. "A" to Dept. 'B' MIR 10	5 Units
30.9.02 Shortage in stock taking	2 units

Write up the priced stores ledger on FIFO Method and discuss how would you treat the shortage in stock taking.

Question 60 - Study Material

Arnav Electronics manufactures electronic home appliances. It follows weighted average Cost method for inventory valuation. Following are the data of component X:

Date	particulars	Units	Rate per unit
15-12-19	Purchase Order- 008	10,000	9,930
30-12-19	Purchase Order- 009	10,000	9,780
01-01-20	Opening stock	3,500	9,810
05-01-20	GRN*-008 (against the Purchase Order-008)	10,000	-
05-01-20	MRN**-003 (against the Purchase Order- 008)	500	-
06-01-20	Material Requisition-011	3,000	-
07-01-20	Purchase Order- 010	10,000	9,750
10-01-20	Material Requisition-012	4,500	-
13-01-20	GRN-009 (against the Purchase Order-009)	10,000	-
13-01-20	MRN-004 (against the Purchase Order-009)	400	-
15-01-20	Material Requisition-013	2,200	-
24-01-20	Material Requisition-014	1,500	-
25-01-20	GRN-010 (against the Purchase Order-010)	10,000	-
28-01-20	Material Requisition-015	4,000	-
31-01-20	Material Requisition-016	3,200	-

*GRN- Goods Received Note; **MRN- Material Returned Note

Based on the above data, you are required to CALCULATE:

(i) Re-order level

(ii) Maximum stock level

(iii) Minimum stock level

(iv) PREPARE Store Ledger for the period January 2020 and DETERMINE the value of stock as on 31-01-2020.

(v) Value of components used during the month of January, 2020.

(vi) Inventory turNover ratio.

Question 61 -

The following transactions in respect of material Y occurred during the six months ended 30th June, 20X8:

Month	Purchase (units)	Price per unit (₹)	Issued Units
January	200	25	Nil
February	300	24	250
March	425	26	300
April	475	23	550
May	500	25	800
June	600	20	400

Required: The Chief Accountant argues that the value of closing stock remains the same no matter which method of pricing of material issues is used. Do you agree? Why or why not? EXPLAIN. Detailed stores ledgers are not required.

Question 62 -

The particulars relating to 1,200 Kg. of a certain raw material purchased by company during June were as follows:

- Lot prices quoted by supplier and accepted by the company for placing the purchase order:
  Lot upto 1,000 kg. @ ₹22 per kg.
  Between 1,000-1,500 kg. ₹20 per kg.
  Between 1,500-2,000 kg. @ ₹18 per kg.
- Trade discount 20%
- Additional charge for containers@ ₹10 per drum of 25 kg.

- Credit allowed on return of containers@ ₹8 per drum.
- Sales Tax at 10% on raw material and 5% on drums.
- Total freight paid by the purchaser ₹240
- Insurance at 2.5% (on Net Invoice Value) paid by the purchaser.
- Stores overhead applied at 5% on total purchase cost of material.

The entire quantity was received and issued to production. The containersare returned in due course. Draw up a suitable statement to show:
(1) Total cost of material purchased; and
(2) Unit cost of material issued to production. **[(i) ₹23,058; (ii) ₹19.215]**

Question 63 - Rtp

Sky & Co. an unregistered supplier under GST, purchased material from Vye Ltd. which is registered under GST. The following information is available for one lot of 5,000 units of material purchased.

Listed price of one lot	₹2,50,000
Trade discount	@ 10% on listed price
CGST and SGST (Credit Not available)	12% (6% CGST + 6% SGST)
Cash discount @ 10% (Will be given only if payment is made within 30 days.)	
Toll Tax paid	₹5,000
Freight and Insurance	₹17,000
Demurrage paid to transporter	₹5,000
Commission and brokerage on purchases	₹10,000
Amount deposited for returnable containers	₹30,000
Amount of refund on returning the container	₹20,000
Other Expenses	@ 2% of total cost

20% of material shortage is due to normal reasons.
The payment to the supplier was made within 21 days of the purchases.
You are required to CALCULATE cost per unit of material purchased by Sky & Co.

Question 64 - Study Material

The following information is provided by Sunrise Industries for the fortnight of April, 20X9:
Material Exe:
Stock on 1-4-20X9 100 units at ₹5 per unit.
Purchases
5-4-20X9, 300 units at ₹6
8-4-20X9, 500 units at ₹7
12-4-20X9, 600 units at ₹8
Issues
6-4-20X9, 250 units
10-4-20X9,400 units
14-4-20X9,500 units
Required:
(A) CALCULATE using FIFO and LIFO methods of pricing issues:
a) The value of materials consumed during the period
b) The value of stock of materials on 15-4-20X9.
(B) EXPLAIN why the figures in (a) and (b) in part A of this question are different under the two methods of pricing of material issues used. You need not draw up the Stores Ledgers.

Question 65 - Pyq

Prepare a Store Ledger Account from the following transactions of XY Company Ltd:

April, 2011	
1	Opening balance 200 units @ ₹10 per unit.
5	Receipt 250 units costing ₹2,000
8	Receipt 150 units costing ₹1,275
10	Issue 100 units
15	Receipt 50 units costing ₹500
20	Shortage 10 units

21	Receipt 60 units costing ₹540
22	Issue 400 units

The issues upto 10-4-11 will be priced at LIFO and from 11-4-11 issues will be priced at FIFO.
Shortage will be charged as overhead.

Computing Receiving and Handling Rate

Question 66 -

You are supplied with the following information extracted from the budget estimates of a company:

particulars	Amount (₹)
Net purchases	1,00,000
Freight and insurance	5,000
Buying expenses	2,500
Receiving expenses	2,000
Inspection expenses	1,000
Storage expenses	1,500

The company made the following purchases during the budget period:

particulars	Amount (₹)
Consignment No. 1	15,000
Consignment No. 2	25,000
Consignment No. 3	35,000

Actual costs during the period were:

particulars	Amount (₹)
Freight and insurance	3,000
Buying expenses	2,000
Receiving expenses	1,500
Inspection expenses	750
Storage expenses	500

Compute the applied:
(i) Material receiving and handling rate for the period
(ii) Determine the amount of receiving and handling cost chargeable to purchases.
Also state whether there is any under/or over-absorption.

Computation of Landed Cost

Question 67 - Pyq

A manufacturer of Surat purchased three chemicals A, B and C from Bombay. The invoice gave the following information:

Chemical	
A 3,000 kg. @ ₹4.20 Per Kg.	12,600
B 5,000 Kg. @ ₹3.80 Per Kg.	19,000
C 2,000 kg. @ ₹4.75 Per Kg.	9,500
Sales tax	2,055
Railway freight	1,000
Total Cost	44,155

A shortage of 200 kg. in chemical A, of 280 Kg. in chemical B and of 100 Kg. in chemical C was noticed due to breakages. At Surat, the manufacturer paid octroi duty of Re. 0.10 per Kg. He also paid cartage of ₹63.12 for chemical B and ₹31.80 for chemical C. Calculate the stock rate that you would suggest for pricing issue of chemicals assuming a provision of 5% towards further deterioration.

Question 68 - Study Material

An invoice in respect of a consignment of chemicals A and B provides the following information:

	(₹)
Chemical A: 10,000 kgs. at ₹10 per kg.	1,00,000
Chemical B: 8,000 kgs. At ₹13 per kg.	1,04,000
Basic custom duty @ 10% (credit not allowed)	20,400
Railway freight	3,840
Total cost	2,28,240

A shortage of 500 kgs. in chemical A and 320 kgs. in chemical B is noticed due to normal breakages. You are required to COMPUTE the rate per kg. of each chemical, assuming a provision of 2% for further deterioration.

Determination of Price

Question 69 - Pyq, Study Material

At what price per unit would Part No. A 32 be entered in the Stores Ledger, if the following invoice was received from a supplier:

200 units Part No. A 32 @ ₹5	1,000.00
Less: 20% discount	200.00
	800.00
Add: GST @ 15%	120.00
	920.00
Add: Packing charges (5 non-returnable boxes)	50.00
	970.00

Notes:
(1) A 2% discount will be given for payment in 30 days.
(2) Documents substantiating payment of excise duty is enclosed for claiming GST credit.

Question 70 - Rtp,Pyq

HBL Limited produces product 'M' which has a quarterly demand of 20,000 units. Each product requires 3 kg. and 4 kg. of material X and Y respectively. Material X is supplied by a local supplier and can be procured at factory stores at any time, hence, no need to keep inventory for material X. The material Y is not locally available, it requires to be purchased from other states in a specially designed truck container with a capacity of 10 tons.

The cost and other information related with the materials are as follows:

particulars	Material –X	Material-Y
Purchase price per kg. (excluding GST)	₹140	₹640
Rate of GST	18%	18%
Freight per trip (fixed, irrespective of quantity)	-	₹28,000
Loss of materials in transit*	-	2%
Loss in process*	4%	5%

*On purchased quantity

Other information:
The company has to pay 15% p.a. to bank for cash credit facility.
Input credit is available on GST paid on materials.
Required:
(i) CALCULATE cost per kg. of material X and Y
(ii) CALCULATE the Economic Order quantity for both the materials.

Buffer Stock

Question 71 -

The scrutiny of past records gives the following distribution for lead time and daily demand during lead time.

Lead Time Distribution

Lead Time (Days)	Frequency
3	2

4	3
5	4
6	4
7	2
8	2
9	2
10	1

Demand Distribution

Demand/Day (Units)	Frequency
0	2
1	4
2	5
3	5
4	4
5	2
6	1
7	2

Assuming that the lead time distribution and daily demand distribution are independent, determine:
(i) The buffer-stock; and
(ii) The reorder level. **[(i) 52 units, (ii) 70 units]**

Choice of Supplier

Question 72 - Pyq

A Company has the option to procure a particular material from two sources:
Source I assures that defectives will not be more than 2% of supplied quantity.
Source II does not give any assurance, but on the, basis of past experience of supplies received from it, is observed that defective percentage is 2.8%.
The material is supplied in lots of 1,000 units. Source II supplies the lot at a price, which is lower by ₹100 as compared to source I. The defective units of material can be rectified for use at a cost of ₹5 per unit. You are required to find out which of the two sources is more economical. **[Source II]**

Make or Buy

Question 73 -

Unlimited Ltd is considering the possibility of purchasing from a supplier a part now makes. The supplier will provide the parts in the necessary quantities at a unit of ₹9. Transportation and storage costs would be negligible.
The company produces the parts from a single raw material in economic lots of 2,000 units at a cost of ₹2 per unit. Average annual demand is 20,000 units. The annual holding cost is ₹0.25 per unit and the minimum stock level is set at 400 units. Direct labour costs for the part are ₹6 per unit, fixed manufacturing overhead is charged at a rate of ₹3 per unit based on a normal activity of 20,000 units. The company also hires the machine on which the parts are produced at the rate of ₹200 per month. Should the company make the parts?
[Yes, make the component, Net Gain = ₹17,000]

Choice of Substitute Material

Question 74 -

A Dying Co. uses chemical H as a raw material. This chemical costs ₹20 per Kg and I-O Ratio is 125%. Due to non-availability of this material, the following two substitutes are available:

Material	Rate per Kg.	I-O Ratio
H-1	₹30	110%
H-2	₹24	140%

Recommend which of the grades is to be used.
[Chemical A-1 is recommended because it is more economical]

Material Mix to Retain Profit

Question 75 -

Raw materials x costing ₹100 per kg and y costing ₹60 per kg are mixed in equal promotions for making a Product. The loss of materials in processing 25% of the output. The production expenses are allocated at 50% of Direct Material Cost. The end – product is priced with a margin of 33 1/3% over the total costs. Material Y is not easily available and substitute raw material Z costing ₹50 per kg has been found for Y. It is required to keep the proportion of this substitute material Z in the mixture Z in the mixture as low as possible and at the same time maintain the selling price of the end product at existing levels and ensure the same quantum of profit as at present.

You are required to compute what should be the ratio of mix the material X and Z.

Treatment of Stock Deficiencies

Question 76 -

After the annual stocktaking, you come to know of some significant discrepancies between book stock and physical stock. You gather the following information.

Item	Stock Card (units)	Stores Ledger (units)	Physical Check (units)	Cost p.u
A	600	600	560	60
B	380	380	385	40
C	750	780	720	10

(a) What action should be taken to record the information shown above?

(b) Suggest reasons for the shortage and discrepancies disclosed above and recommended a possible course of action by management to prevent future losses.

Question 77 - Study Material

The following information is extracted from the Stores Ledger:

Material X

Opening Stock Nil

Purchases:

Jan. 1 100 @ ₹1 per unit

Jan. 20 100 @ ₹2 per unit

Issues:

Jan. 22 60 for Job W 16

Jan. 23 60 for Job W 17

Complete the receipts and issues valuation by adopting the First-In-First-Out, Last-In-First-Out and the Weighted Average Method. TABULATE the values allocated to Job W 16, Job W 17 and the closing stock under the methods aforesaid and discuss from different points of view which method you would prefer.

Question 78 - Rtp

A Ltd. produces a product 'X' using a raw material 'D'. To produce one unit of X, 4 kg of D is required. As per the sales forecast conducted by the company, it will be able to sale 20,000 units of X in the coming year.

The following are the information related to the raw material D:

(i) The Re-order quantity is 400 kg. less than the Economic Order Quantity (EOQ).

(ii) Maximum consumption per day is 40 kg. more than the average consumption per day.

(iii)There is an opening stock of 2,000 kg.

(iv)Time required to get the raw materials from the suppliers is 4 to 8 days.

(v) The purchase price is ₹250 per kg.

There is an opening stock of 1,800 units of the finished product X.

The carrying cost of inventory is 14% p.a.

To place an order company has to incur ₹1,340 on paper and documentation work. From the above information FIND OUT the followings in relation to raw material D:

(a) Re-order Quantity

(b) Maximum Stock level

(c) Minimum Stock level

(d) Calculate the impact on the profitability of the company by not ordering the EOQ.

[Take 300 days for a year]

Question 79 - Mtp

A company uses three raw materials Pi, Qu and Ar for a particular product for which the following data applies

Raw Material	Usage per unit of product (Kg.)	Re-order Quantity (Kg.)	Price per Kg. (₹)	Delivery period (in weeks)			Re-order level (Kg.)	Minimum level (Kg.)
				Minimum	Average	Maximum		
Pi	5	10,000	0.10	1	2	3	8,000	?
Qu	2	5,000	0.30	3	4	5	4,750	?
Ar	3	10,000	0.15	2	3	4	?	2,000

Weekly production varies from 350 to 450 units, averaging 400 units of the said product. WHAT would be the following quantities:
(i) Minimum Stock of Pi?
(ii) Maximum Stock of Qu?
(iii) Re-order level of Ar?
(iv) Average stock level of Pi?

Question 80 - Mtp

A company manufactures 10,000 units of a product per month. The cost of placing an order is ₹200. The purchase price of the raw material is ₹20 per kg. The re-order period is 4 to 8 weeks. The consumption of raw materials varies from 200 kg to 900 kg per week, the average consumption being 550 kg. The carrying cost of inventory is 20% per annum.
You are required to CALCULATE:
(i) Re-order quantity
(ii) Re-order level
(iii) Maximum level
(iv) Minimum level
(v) Average stock level

Question 81 - Pyq

An automobile company purchases 27,000 spare parts for its annual requirements. The cost per order is ₹240 and the annual carrying cost of average inventory is 12.5%. Each spare part costs ₹50.
At present, the order size is 3,000 spare parts. (Assume that number of days in a year = 360 days) Find out:
(i) How much the company's cost would be saved by opting EOQ model?
(ii) The Re-order point under EOQ model if lead time is 12 days.
(iii) How frequently should orders for procurement be placed under EOQ model?

Question 82 - Pyq

Surekha Limited produces 4,000 Litres of paints on a quarterly basis. Each Litre requires 2 kg of raw material. The cost of placing one order for raw material is ₹40 and the purchasing price of raw material is ₹50 per kg. The storage cost and interest cost is 2% and 6% per annum respectively. The lead time for procurement of raw material is 15 days.
Calculate Economic Order Quantity and Total Annual Inventory Cost in respect of the above raw material.

Question 83 - Pyq

The following information is furnished by ABC Ltd. :

Re-order quantity	6,750 units
Minimum stock level to allow for emergencies	5 weeks
Average Delivery time from suppliers	4 weeks
Maximum stock level allowed by Management	20 weeks
Average rate of consumption per week	625 units
Minimum consumption in 4 weeks	1,250 units

Calculate:
(a) Re-order level
(b) Maximum Stock level
(c) Minimum Stock level

Question 84 - Pyq

A company manufactures a product from a raw material which is purchased at ₹96 per kg. The company incurs a handling and freight cost of ₹1,500 per order. The incremental carrying cost of inventory of raw material is ₹7.50 per kg per quarter. The annual production of the product is 2,00,000 units and 5 units are obtained from one kg. of raw material.

You are required to:

(i) Calculate the Economic Order Quantity of raw materials.

(ii) If the company proposes to rationalize placement of order on yearly basis, what percentage of discount in the price of raw materials should be negotiated?

Question 85 - Pyq

(a) M/s XYZ Traders is a distributor of an electronic calculator. A periodic inventory of electronic calculator on hand is taken when books are closed at the end of each quarter. The following summary of information is available for the quarter ended on 30th September, 2019:

Sales	₹1,46,20,000
Opening Stock	25,000 calculator @ ₹200 per calculator
Administrative Expenses	₹3,75,000
Purchases (including freight inward):	
July 1, 2019	50,000 calculator @ ₹191 per calculator
September 30, 2019	25,000 calculator @ ₹210 per calculator
Closing stock- September 30	32,000 calculator

You are required to compute the following by WAM (Weighted Average Method), FIFO method and LIFO method.

(i) Value of Inventory on 30th September, 2019.

(ii) Profit or loss for the quarter ended 30th September , 2019.

Question 86 - Rtp

The following data are available in respect of Material X for the year ended 31st March, 2021:

Opening stock	9,00,000
Purchases during the year	1,70,00,000
Closing Stock	11,00,000

(i) Calculate :

(a) Inventory TurNover ratio, and

(b) The number of days for which the average inventory is held.

(ii) Interpret the ratio calculated as above if the industry inventory turNover rate is 10.

Question 87 - Pyq

XYZ Ltd. uses two types of raw materials – 'Material A' and 'Material B' in the production process and has provided the following data for the year ended on 31st March, 2021:

particulars	Material A (₹)	Material B (₹)
Opening stock as on 01.04.2020	30,000	32,000
Purchases during the year	90,000	51,000
Closing Stock as on 31.03.2021	20,000	14,000

You are required to calculate

(i) The inventory turNover ratio of 'Material A' and 'Material B'.

(ii) The number of days for which the average inventory is held for both materials 'A' and 'B'.

(iii) Based on the above calculations, give your comments. (Assume 360 days in a year.)

Question 88 - Mtp

The annual demand for an item of raw material is 48,000 units and the purchase price is ₹80 per unit. The cost of processing an order is ₹1,350 and the annual cost of storage is ₹15 per unit.

(i) Determine is the optimal order quantity and total relevant cost for the order?

(ii) If the cost of processing an order is ₹800 and all other data remain same, and then determine the differential cost?

(iii) If the supplier offers bulk purchase of 48,000 units at a price of ₹72 and cost of placing is Nil, should the order be accepted?

Question 89 - Pyq

A Limited a toy company purchases its requirement of raw material from S Limited at ₹120 per kg. The company incurs a handling cost of ₹400 plus freight of ₹350 per order. The incremental carrying cost of inventory of raw material is ₹0.25 per kg per month. In addition the cost of working capital finance on the investment in inventory of raw material is ₹15 per kg per annum. The annual production of the toys is 60,000 units and 5 units of toys are obtained from one kg. of raw material.

Required:

I. Calculate the Economic Order Quantity (EOQ) of raw materials. (Assume 360 days in a year)

II. Advise, how frequently company should order to minimize its procurement cost.

III. Calculate the total ordering cost and total inventory carrying cost per annum as per EOQ.

Question 90 - Mtp

The following are the details of receipts and issues of a material of stores in a manufacturing company for the period of three months ending 30th June, 2022:

Receipts:

Date	Quantity (kg.)	Rate per kg. (₹)
April 10	1,600	50.00
April 20	2,400	49.00
May 5	1,000	51.00
May 17	1,100	52.00
May 25	800	52.50
June 11	900	54.00
June 24	1,400	55.00

There was 1,500 kg. in stock at April 1, 2022 which was valued at ₹48.00 per kg.

Issues:

Date	Quantity (kg.)
April 4	1,100
April 24	1,600
May 10	1,500
May 26	1,700
June 15	1,500
June 21	1,200

Issues are to be priced on the basis of weighted average method.

The stock verifier of the company reported a shortage of 80 kgs. on 31st May, 2022 and 60 kgs. on 30th June, 2022.

You are required to prepare a Stores Ledger Account.

Question 91 - Pyq

MM Ltd. uses 7500 valves per month which is purchased at a price of ₹1.50 per unit. The carrying cost is estimated to be 20% of average inventory investment on an annual basis. The cost to place an order and getting the delivery is ₹15. It takes a period of 1.5 months to receive a delivery from the date of placing an order and a safety stock of 3200 valves is desired.

You are required to determine:

I. The Economic Order Quantity (EOQ) and the frequency of order

II. The re-order point.

III.The Economic Order Quantity (EOQ) if the valve cost ₹4.50 each instead of 1.50 each.

(Assume a year consists of 360 days)

Employee Cost & Direct Expenses

Question 1
What is Labour Cost? Distinguish between Direct Labour and Indirect Labour?
Answer:
Labour Cost: It means the cost incurred for hiring of human resource of employees.
Direct Labour Cost: Any Labour Cost that is specifically incurred for or can be readily charged to or identified with a specific job, contract work order or any other unit of cost.
Indirect Labour Cost: Any Labour Cost that cannot be clearly identified or charged to a product, job, etc but is incurred during production.

Determination of Basic Wages

Basic Wages/Pay	----
(+) Dearness Allowance (DA)	----
(+) City Compensatory allowance (CCA)	----
(+) House Rent Allowance (HRA)	----
(+) Other Allowance	----
(+) Cost of Perquisites	----
(+) Employer's Contribution to SSS	----
(+) Overtime Wages	----
(+) Facilities of Doctors	----
(+) Employee Welfare Cost	----
(+) Bonus or Share of Profit	----
Total Labour Cost	**----**

- **Effective Hourly Rate =**
  Normal Effective hours= Total hours available – Normal Idle time

- **Conversion Cost =** It means the cost of converting Raw Materials into Finished Goods.
  It includes Labour Cost and Factory Overheads.

Question 2 - Rtp (Adapted)
Calculate the Labour Cost per man-day from the following data –
- Basic Salary ₹200 per day
- Dearness Allowance – ₹2.50 per every point over 100 cost of living for working class. Current cost of Living Index = 700 points.
- Leave Salary 10% of (Basic + DA)
- Employer's Contribution to PF, ESI and Associated Costs = 20% of (Basic + DA + Leave Salary)
- Expenditure on amenities to Labour per month = ₹600 per worker.
- Working Days per month = 25 days of 8 hours each.

Question 3 - Study Material
A worker is paid ₹10,000 per month and a dearness allowance of ₹2,000 p.m. Worker contribution to provident fund is @ 10% and employer also contributes the same amount as the employee. The Employees State Insurance Corporation premium is 6.5% of wages of which 1.75% is paid by the employees. It is the firm's practice to pay 2 months' wages as bonus each year.
The number of working days in a year are 300 of 8 hours each. Out of these the worker is entitled to 15 days leave on full pay. CALCULATE the wage rate per hour for costing purposes.

Question 4 - Study Material
CALCULATE the Employee hour rate of a worker X from the following data:
Basic pay - ₹10,000 p.m.
D.A. - ₹3,000 p.m.
Fringe benefits - ₹1,000 p.m.
Number of working days in a year 300. 20 days are availed off as holidays on full pay in a year. Assume a day of 8 hours

Question 5 - Pyq

Following are the Particulars of two workers 'R' and 'S' for a month:

Particulars	R	S
(i) Basic Wages (₹)	15,000	30,000
(ii) Dearness Allowance	50%	50%
(iii) Contribution to EPF (on basic wages)	7%	7.5%
(iv) Contribution to ESI (on basic wages)	2%	2%
(v) Overtime (hours)	20	-

The normal working hours for the month are 200 hrsOvertime is paid at double the total of normal wages and dearness allowance. Employer's contribution to State Insurance and Provident Fund are at equal rates with employees' contributions.

Both workers were employed on jobs A, B and C in the following proportions :

Jobs	A	B	C
R	75%	10%	15%
S	40%	20%	40%

Overtime was done on job 'A'. You are required to :

(i) Calculate ordinary wage rate per hour of 'R' and 'S'.

(ii) Allocate the worker's cost to each job 'A', 'B' and 'C'.

Question 6 - Study Material

X' an employee of ABC Co. gets the following emoluments and benefits:

- Basic pay ₹1,000 p.m
- Dearness allowance ₹200 p.m
- Bonus 20% of salary and D.A
- Other allowances ₹250 p.m
- Employee's contribution to P.F 10% of salary and D.A

'X' works for 2,400 hours per annum, out of which 400 hours are non-productive and treated as normal idle time. You are required to find out the effective hourly cost of employee 'X'.

Question 7 - Study Material

In a factory working six days in a week and eight hours each day, a worker is paid at the rate of ₹100 per day basic plus D.A. @ 120% of basic. He is allowed to take 30 minutes off during his hours shift for meals-break and a 10 minutes recess for rest. During a week, his card showed that his time was chargeable to :

Job X 15 hrs

Job Y 12 hrs

Job Z 13 hrs

The time not booked was wasted while waiting for a job. In Cost Accounting, STATE how would you allocate the wages of the workers for the week?

Question 8 -

A company's basic wage rate is ₹6 per hour and its overtime rates are:

Evening – Time and one third

Week-ends – Double the time

During the previous year, the following hours were worked:

Normal time 2,20,000 clock hours

Time plus one third 20,000 clock hours

Double time 10,000 clock hours

The following times have been worked:

Particulars	Job
Normal time (hours)	5,000
Evening overtime (hours)	600
Week-end Overtime (hours)	50

Calculate the labour cost chargeable to job in each of the following circumstances:

(1) Where overtime is worked regularly throughout the year due to labour shortage.

(2) Where overtime is worked specially at the request of the customer. **[(1) ₹36,160; (2) ₹35,400]**

Question 9 - Study Material

CALCULATE the earnings of A and B from the following Particulars for a month and allocate the employee cost to each job X, Y and Z:

	A	B
(i) Basic wages (₹)	10,000	16,000
(ii) Dearness allowance	50%	50%
(iii)Contribution to provident fund (on basic wages)	8%	8%
(iv) Contribution to employee's state insurance (on basic wages)	2%	2%
(v) Overtime (hours)	10	-

The normal working hours for the month are 200. Overtime is paid at double the total of normal wages and dearness allowance. Employer's contribution to state Insurance and Provident Fund are at equal rates with employees' contributions. The two workers were employed on jobs X, Y and Z in the following proportions:

Jobs	X	Y	Z
Worker A	40%	30%	30%
Worker B	50%	20%	30%

Overtime was done on job Y.

Question 10 - Study Material

It is seen from the job card for repair of the customer's equipment that a total of 154 labour hours have been put in as detailed below:

	Worker 'A' paid at ₹200 per day of 8 hours	Worker 'B' paid at ₹100 per day of 8 hours	Worker 'C' paid at ₹300 per day of 8 hours
Monday (hours)	10.5	8.0	10.5
Tuesday (hours)	8.0	8.0	8.0
Wednesday (hours)	10.5	8.0	10.5
Thursday (hours)	9.5	8.0	9.5
Friday (hours)	10.5	8.0	10.5
Saturday (hours)	-	8.0	8.0
Total (hours)	49.0	48.0	57.0

In terms of an award in an employee conciliation, the workers are to be paid dearness allowance on the basis of cost of living index figures relating to each month which works out @ ₹968 for the relevant month. The dearness allowance is payable to all workers irrespective of wages rate if they are present or are on leave with wages on all working days.

Sunday is a weekly holiday and each worker has to work for 8 hours on all week days and 4 hours on Saturdays; the workers are however paid full wages for Saturday (8 hours for 4 hours worked).

workers are paid overtime according to the Factories Act, 1948. Excluding holidays, the total number of hours works out to 176 in the relevant month. The company's contribution to Provident Fund and Employees State Insurance Premium are absorbed into overheads.

CALCULATE the wages payable to each worker.

Question 11 - Study Material

In a factory, the basic wage rate is ₹100 per hour and overtime rates are as follows:

Before and after normal working hours - 175% of basic wage rate
Sundays and holidays - 225% of basic wage rate
During the previous year, the following hours were worked:

- Normal time - 1,00,000 hours
- Overtime before and after working hours- 20,000 hours

Overtime on Sundays and holidays - 5,000 hours
Total - 1,25,000 hours

The following hours have been worked on job 'Z'

Normal	- 1,000 hours
Overtime before and after working hrs	- 100 hours
Sundays and holidays	- 25 hours
Total	- 1,125 hours

You are required to CALCULATE the labour cost chargeable to job 'Z' and overhead in each of the following instances:
a) Where overtime is worked regularly throughout the year as a policy due to the workers' shortage.
b) Where overtime is worked irregularly to meet the requirements of production.
c) Where overtime is worked at the request of the customer to expedite the job.

Question 12 - Rtp

GZ Ld. pays the following to a skilled worker engaged in production works. The following are the employee benefits paid to the employee:

(a)	Basic salary per day	₹1,000
(b)	Dearness allowance (DA)	20% of basic salary
(c)	House rent allowance	16% of basic salary
(d)	Transport allowance	₹50 per day of actual work
(e)	Overtime	Twice the hourly rate (considers basic and DA), only if works more than 9 hours a day otherwise no overtime allowance. If works for more than 9 hours a day then overtime is considered after 8th hours
(f)	Work of holiday and Sunday	Double of per day basic rate provided works at least 4 hoursThe holiday and Sunday basic is eligible for all allowances and statutory deductions.
(g)	Earned leave & Casual leave	These are paid leave.
(h)	Employer's contribution to Provident fund	12% of basic and DA
(i)	Employer's contribution to Pension fund	7% of basic and DA

The company normally works 8-hour a day and 26-day in a month. The company provides 30 minutes lunch break in between.
During the month of August 2020, Mr.Z works for 23 days including 15 th August and a Sunday and applied for 3 days of casual leave. On 15th August and Sunday he worked for 5 and 6 hours respectively without lunch break.
On 5th and 13th August he worked for 10 and 9 hours respectively.
During the month Mr. Z worked for 100 hours on Job no.HT200. You are required to CALCULATE:
(i) Earnings per day
(ii) Effective wages rate per hour of Mr. Z.
(iii) Wages to be charged to Job no.HT200.

Question 13 - Rtp

Textile Ltd. pays following overtime premium for its labour beside normal wages of ₹100 per hour:

Before and after normal working hours	80% of basic wage rate
Sundays and holidays	150% of basic wage rate

During the previous year 2019-20, the following hours were worked:

Normal time	3,00,000 hours
Overtime before and after normal working hours	60,000 hours
Overtime on Sundays and holidays	15,000 hours
Total	3,75,000 hours

During the current year 2020-21, the following hours have been worked on job 'Spinning':

Normal	4,000 hours

Overtime before and after normal working hours	400 hours
Overtime on Sundays and holidays	100 hours
Total	4,500 hours

You are required to CALCULATE the labour cost chargeable to job 'Spinning' and overhead in each of the following instances:
a) Where overtime is worked regularly throughout the year as a policy due to the workers' shortage.
b) Where overtime is worked irregularly to meet the requirements of production.
Where overtime is worked at the request of the customer to expedite the job.

Labour TurNover

Question 14 - Pyq

What are the various methods for computing Labour TurNover.

Answer:

(A) LABOUR TURNovER Without Expansion

(B) LABOUR TurNover with expansion

Equivalent Annual Labour TurNover Rate

Question 15 - Pyq

From the following information, calculate Labour turNover rate and Labour flux rate:
No. of workers as on 01.01.2000 = 7,600
No. of workers as on 31.12.2000 = 8,400
During the year, 80 workers left while 320 workers were discharged. 1500 workers were recruited during the year of these, 300 workers were recruited because of exits and the rest were recruited in accordance with expansion plans.

Labour Turnover Rate Given – Compute No. of Worker

Question 16 - Study Material

The Cost Accountant of Y Ltd. has computed labour turNover rates for quarter ended 31st March, 2007 as 10%, 5% and 3% respectively under 'Flux method', 'Replacement method' and 'Separation method' respectively. If the number of workers replaced during that quarter is 30. Find out the number of:
(1) workers recruited and joined
(2) workers left and discharged

Question 17 - Pyq

Following information is given of a newly setup organization for the year ended on 31st March, 2021.

Number of workers replaced during the period	50
Number of workers left and discharged during the period	25
Average no. of workers on the roll during the period	500

You are required to :
(i) Compute the Employee TurNover Rates using the Separation Method and Flux Method.
(ii) Equivalent Employee TurNover Rates for (i) above, the organization was setup on 31st January, 2021.

Question 18 - Pyq

Accountant of your company had computed labour turNover rates for the quarter ended 30 th September, 2012 as 14%, 8% and 6% under Flux method, Replacement method and Separation method respectively. If the number of workers replaced during 2nd quarter of the financial year 2012-13 is 36, find the following: (i) The number of workers recruited and joined; and (ii) The number of workers left and discharged.

Question 19 - Pyq

The rate of change of labour force in a company during the year ending 31st March, 2013 was calculated as 13%, 8% and 5% respectively under 'Flux method', 'Replacement method' and 'Separation method'. The number of workers separated during the year is 40. You are required to calculate:
(i) Average number of workers on roll.
(ii) Number of workers replaced during the year.

(iii) Number of new accessions i.e., new recruitment.
Number of workers at the beginning of the year.

Question 20 - Rtp

HR Ltd. is progressing in its legal industry. One of its trainee executives, Mr. H, in the peronnel department has calculated labour turNover rate 24.92% for the last year using Flux method.
Following is the data provided by the peronnel department for the last year:

Employees	At the beginning	Joined	Left	At the end
Records clerk	810	1,620	90	2,340
Human Resource Manager	?	30	90	60
Legal Secretary	?	90	---	?
Staff Attorney	?	30	30	?
Associate Attorney	?	30	---	45
Senior Staff Attorney	6	---	---	18
Senior Records clerk	12	---	---	51
Litigation attorney	?	---	---	?
Employees transferred from the Subsidiary Company				
Senior Staff Attorney	---	12	---	---
Senior Records clerk	---	39	---	---
Employees transferred to the Subsidiary Company				
Litigation attorney	---	---	90	---
Associate Attorney	---	---	15	---

At the beginning of the year there were total 1,158 employees on the payroll of the company. The opening strength of the Legal Secretary, Staff Attorney and Associate Attorney were in the ratio of 3 : 3 : 2.
The company has decided to abandon the post of Litigation attorney and consequently all the Litigation attorneys were transferred to the subsidiary company.
The company and its subsidiary are maintaining separate set of books of account and separate peronnel Department.
You are required to:
1. CALCULATE Labour TurNover rate using Replacement method and Separation method.
2. VERIFY the Labour turNover rate calculated under Flux method by Mr. H

Effects of Labour TurNover on Profit or Loss

Question 21 - Study Material, Pyq

The management of Bina and Rina Ltd. are worried about their increasing labour turNover in the factory and before analyzing the causes and taking remedial steps, they want to have an idea of the profit foregone as a result of labour turNover in the last year.
Last year sales amounted to ₹83,03,300 and P/V ratio was 20 per cent. The total number of actual hours worked by the Direct Labour force was 4.45 lakhs. As a result of the delays by the peronnel Department in filling vacancies due to labour turNover, 1,00,000 potentially productive hours were lost. The actual direct labour hours included 30,000 hours attributable to training new recruits, out of which half of the hours were unproductive.
The costs incurred consequent on labour turNover revealed, on analysis, the following:

Settlement cost due of leaving	₹43,820
Recruitment costs	₹26,740
Selection costs	₹12,750
Training	₹30,490

Assuming that the potential production lost as a consequence of labour turNover could have been sold at prevailing prices, find the profit foregone last year on account of labour turNover.

Question 22 - Pyq

ABC Limited is facing the problem of increasing labour turNover in the factory. The management is willing to analyse the causes and take remedial steps.

Last year sales of the company amounted to ₹12,18,49,320 and the P/V ratio was 25%. The total number of actual hours worked by the direct labour force was ₹5.75 lakhs. The company lost 1,25,000 potentially productive hours due to delay in filling vacancies caused by labour turNover. The actual direct labour hours included 60,000 hours attributable to training of new recruits, out of which 30% of the hours were unproductive.

The accounting records reveal the following costs incurred consequent to labour turNover:

Recruitment costs	-	₹5,36,300
Selection cost	-	₹2,78,400
Training costs	-	₹4,25,000
Settlement costs due to leaving	-	₹7,18,800

Assuming that the potential production lost as a consequences of labour turNover could have been sold at prevailing prices , find out the contribution and profit foregone by the company in the last year due to labour turNover.

Computation of Labour TurNover Rate

Question 23 - Pyq

The following information is collected from the peronnel department of ST limited for the year ending 31st March, 2008:

Number of workers at the beginning of the year	8,000
Number of workers at the end of the year	9,600
Number or workers left the company during the year	500
Number of workers discharge during the year	100
Number of workers replaced due to left and discharges	700
Additional workers employed for expansion during the year	1,500

You are required to calculate labour turNover rate by using separation method, replacement method and flux method.

Question 24 - Pyq

A company is undecided as to what kind of wage scheme should be introduced. The following Particulars have been compiled in respect of three systems. Which are under consideration of the management?

Particulars	A	B	C
Actual hoursof wages in a week	38	40	34
Hourly rate of wage (in ₹)	6	5	7.20
Productions in Units			
Product P	21	-	60
Product Q	36	-	135
Product R	46	25	-
Standard time allowed per unit			
Minutes	12(P)	18(Q)	30(R)

For the purpose of piece rate, each minute is valued at ₹0.10

You are required to calculate the wages of each worker under:

(i) Guaranteed hourly rate basis.

(ii) Piece work earning basis, but guaranteed at 75% of basic pay (Guaranteed hourly rate if his earning are than 50% of basic pay.

(iii) Premium bonus basis where the worker received bonus based on Rowan scheme.

Question 25 - Mtp

The following Particulars have been compiled in respect of three workers

	M	N	O
Actual hours worked	380	100	540
Hourly rate of wages (in ₹)	90	100	110
Productions in units:			

- Product A	210	-	600
- Product B	360	-	1350
- Product C	460	250	-
Standard time allowed per unit of each product is:			
	A	B	C
Minutes	15	20	30

For the purpose of piece rate, each minute is valued at ₹1.50.
You are required to CALCULATE the wages of each worker under:
(i) Guaranteed hourly rate basis.
(ii) Piece work earning basis but guaranteed at 75% of basic pay (Guaranteed hourly rate if his earnings are less than 50% of basic pay.)

Piece Rate And Other Schemes

Question 26 - Study Material, Pyq

During audit of account of G Company, your assistant found errors in the calculation of the wages of factory workers and he wants you to verify his work.
He has extracted the following information:
(i) The contract provides that the minimum wage for a worker is his base rate. It is also paid for downtimes i.e,, the machine is under repair or the worker is without work. The standard work week is 40 hours for overtime production, workers are paid 150 percent of base rates.
(ii) Straight Piece Work – The worker is paid at the rate of 20 paise per piece.
Your assistant has produced the following schedule pertaining to certain workers of a weekly pay roll:

workers	Wage Incentive Plan	Total hours	Down time hours	Units produced	Standard units	Base rate	Gross wages as per book
Rajesh	Straight piece work	40	5	400	-	1.80	85
Mohan*		46	-	455	-	1.80	95
John (40 hours production)	Straight piece work	44	-	425	-	1.80	85
	Straight piece work						

*Total hoursof Mohan include 6 overtime hours
Prepare a schedule showing whether the above computations of worker's wages are correct or not. Give details.

Question 27 - Study Material

From the following information you are required to calculate the bonus and earnings under Halsey Efficiency system. The relevant information is as under:

- Standard working hours — 8 hours a day
- Standard output per hour in units — 5
- Daily wage rate — ₹50

Actual output in units

- Worker A — 25 units
- Worker B — 40 units
- Worker C — 45 units

Halsey and Rowan System

Question 28 - Pyq

You are given the following information of a worker:

- Name of worker — 'X'
- Ticket No. — 002
- Work started — 1-4-11 at 8 a.m.
- Work finished — 5-4-11 at 12 noon
- Work allotted — Production of 2,160 units
- Time done and approved — 2,000 units

- Time and units allowed 40 units per hour
- Wage rate ₹25 per hour
- Bonus 40% of time saved
- Worker X worked 9 hours a day.

You are required to calculate the remuneration of the worker on the following basis:
(i) Halsey plan and
(ii) Rowan plan

Question 29 - Pyq
A worker produced 200 units in a week's time. The guaranteed weekly wage payment for 45 hours is ₹81. The expected time to produce one unit is 15 minutes which is raised further by 20% under the incentive scheme. What will be the earnings per hour of that worker under Halsey (50% Sharing) and Rowan bonus scheme?

Question 30 - Pyq
2 hours allowed to a worker to produce 5 units and wages has been paid @ ₹25 per hour. In a 48 hours week the worker produced 170 units.
You are required to calculate the total earnings and effective hourly rate of earnings of the worker under the following incentive wage systems:
(i) Halsey 50 percent system
(ii)Rowan system

Question 31 - Pyq
The management of a company wants to formulate an incentive plan for the workers with a view to increase productivity. The following Particulars have been extracted from the books of company:
Piece Wage rate 10
Weekly working hours4
Hourly wages rate 40 (guaranteed)
Standard/normal time per unit 15 minutes.
Actual output for a week:

Worker A	176 pieces
Worker B	140 pieces

Differential piece rate: 80% of piece rate when output below normal and 120% of piece rate when output above normal. Under Halsey scheme, Worker gets a bonus equal to 50% of Wages of time saved.
Calculate earning of workers under Halsey's and Rowan's premium scheme.

Rowan to Halsey – Effect of Change

Question 32 - Pyq
The standard time for a job is 50 hoursThe hourly rate of guaranteed wages is ₹9. Because of saving in time, a worker X gets an hourly wages of ₹10.80 under Rowan premium bonus system. For the same saving in time, calculation the hourly rate of wages a worker Y will get under Halsey premium bonus system assuming 50 per cent Bonus to worker.

Question 33 - Pyq
Standard Time for a job is 90 hoursThe hourly rate of guaranteed wages is ₹50. Because of the saving in time a worker a gets an effective hourly rate of wages of ₹60 under Rowan premium bonus system. For the same saving in time, calculate the hourly rate of wages a worker B will get under Halsey premium bonus system assuring 40% to worker.

Question 34 - Study Material
A skilled worker in XYZ Ltd. is paid a guaranteed wage rate of ₹30 per hour. The standard time per unit for a particular product is 4 hoursP a machine man has been paid wages under the Rowan Incentive Plan and he had earned an effective hourly rate of ₹37.50 on the manufacture of that particular product.
Required: What could have been his total earning and effective hourly rate, had been put on Halsey Incentive Scheme (50%)?

Halsey and Rowan System-Comparative Cost Statement

Question 35 - Rtp (Adapted)

A worker takes 6 hours to complete a job under a scheme of payment by results. The standard time allowed for the job is 9 hours and his wage rate is ₹45 per hour. Material Cost of the Job is ₹480 and OH is recovered at 150% of Direct Wages. Calculate the Factory Cost of the Job under – (a) Rowan, and (b) Halsey System of incentive payments.

Question 36 - Study Material

Wage negotiations are going on with the recognised employees' union, and the management wants you as an executive of the company to formulate an incentive scheme with a view to increase productivity.
The case of three typical workersA, B and C who produce respectively 180, 120 and 100 units of the company's product in a normal day of 8 hours is taken up for study.
Assuming that day wages would be guaranteed at ₹75 per hour and the piece rate would be based on a standard hourly output of 10 units, CALCULATE the earnings of each of the three workers and the employee cost per 100 pieces under (i) Day wages, (ii) Piece rate, (iii) Halsey scheme, and (iv) The Rowan scheme.
Also CALCULATE under the above schemes the average cost of labour for the company to produce 100 pieces.

Halsey Rowan Comparative Analysis

Question 37 - Pyq

The time allowed for a job is 8 hoursThe hourly rate is ₹8. Prepare a statement showing (a) Bonus earned, (b) Total Earnings of workers, & (c) Hourly earnings, under Halsey & Rowan System, for each hours saved progressively.

Question 38 - Rtp

JBL Sisters operates a boutique which works for various fashion houses and retail stores. It has employed 26 workers and pays them on time rate basis. On an average an employee is allowed 8 hours for boutique work on a piece of garment. In the month of December 2020, two workersM and J were given 15 pieces and 21 pieces of garments respectively for boutique work. The following are the details of their work:

	M	J
Work assigned	15 pcs.	21 pcs.
Time taken	100 hours	140 hours

workers are paid bonus as per Halsey System. The existing rate of wages is ₹60 per hour. As per the new wages agreement the workers will be paid ₹72 per hour w.e.f. 1st January2021.
At the end of the month December 2020, the accountant of the company has wrongly calculated wages to these two workers taking ₹72 per hour. Required:
(i) CALCULATE the loss incurred due to incorrect rate selection.
(ii) CALCULATE the loss incurred due to incorrect rate selection, had Rowan scheme of bonus payment followed.
(iii) CALCULATE the loss/ savings if Rowan scheme of bonus payment had followed.
(iv) DISCUSS the suitability of Rowan scheme of bonus payment for JBL Sisters?

Question 39 - Study Material

A factory having the latest sophisticated machines wants to introduce an incentive scheme for its workers, keeping in view the following:
(i) The entire gains of improved production should not go to the workers
(ii) In the name of speed, quality should not suffer.
(iii) The rate setting department being newly established are liable to commit mistakes.
You are required to PREPARE a suitable incentive scheme and DEMONSTRATE by an illustrative numerical example how your scheme answers to all the requirements of the management.

Choice Of Plan Halsey Vs Rowan

Question 40 - Pyq

ZED Limited is working by employing 50 skilled workers; it is considering the introduction of incentive scheme-either Halsey scheme (with 50% bonus) or Rowan scheme of wage payment for increasing the labour productivity to cope up the increasing demand for the product by 40%. It is believed that proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers; it could act as sufficient incentive for them to produce more.

Because of assurance, the increase in productivity has been observed as revealed by the figures for the month of April, 2004.

Hourly rate of wages (guaranteed)	₹30
Average time for producing one unit by one worker at the previous performance (This May be taken as time allowed)	1.975 hours
Number of working days in the month	24
Number of working hours per day of each worker	8
Actual production during the month	6,120 units

Required:
(i) Calculate the effective rate of earnings under the Halsey scheme and the Rowan scheme.
(ii) Calculate the savings to the ZED Limited in terms of direct labour cost per piece.
(iii) Advise ZED Limited about the selection of the scheme to fulfill their assurance.

Question 41 - Study Material

Mr. A. is working by employing 10 skilled workersHe is considering the introduction of some incentive scheme - either Halsey Scheme (with 50% bonus) or Rowan Scheme - of wage payment for increasing the Employee productivity to cope with the increased demand for the product by 25%. He feels that if the proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers, it could act as sufficient incentive for them to produce more and he has accordingly given this assurance to the workers
As a result of the assurance, the increase in productivity has been observed as revealed by the following figures for the current month:
Hourly rate of wages (guaranteed) - ₹40
Average time for producing 1 piece by one worker at the previous performance (This May be taken as time allowed) - 2 hours
No. of working days in the month - 25
No. of working hours per day for each worker - 8
Actual production during the month - 1,250 units
Required:
(i) CALCULATE effective rate of earnings per hour under Halsey Scheme and Rowan Scheme.
(ii) CALCULATE the savings to Mr. A in terms of direct labour cost per piece under the schemes.

Missing Figures – Halsey And Rowan

Question 42 - Pyq

Two workmen, A and B produce the same product using the same material. A is paid bonus according to Halsey plan, while B is paid bonus according to Rowan plan. The time allowed to manufacture the product is 100 hours a has taken 60 hours and B has taken 80 hours to complete the product. The normal hourly rate of wages of workman A is ₹24 per hour. The total earnings of both the workers are same. Calculate normal hourly rate of wages of workman B.

Reve₹e Working – Halsey And Rowan

Question 43 - Study Material,

A job can be executed either through workman A or B. A takes 32 hours to complete the job while B finishes it in 30 hoursThe standard time to finish the job is 40 hours
The hourly wage rate is same for both the workersIn addition workman A is entitled to receive bonus according to Halsey plan (50%) sharing while B is paid bonus as per Rowan plan. The works overheads are absorbed on the job at ₹7.50 per labour hour worked. The factory cost of the job comes to ₹2,600 irrespective of the workman engaged.
Find out the hourly wage rate and cost of raw material input. Also show cost against each element of cost included in a factory cost. **[Hourly wage rate is ₹10 and cost of raw material input is ₹2,000]**

Question 44 - Pyq

A skilled worker is paid a guaranteed wage rate of ₹120 per hour. The standard time allowed for a job is 6 hour. He took 5 hours to complete the job. He is paid wages under Rowan Incentive Plan.
(i) Calculate his effective hourly rate of earnings under Rowan Incentive Plan.
(ii) If the worker is placed under Halsey Incentive Scheme (50%) and he wants to maintain the same effective hourly rate of earnings, calculate the time in which he should complete the job.

Halsey And Rowan Scheme's Effect On Profit

Question 45 - Pyq

The finishing shop of a company employs 60 direct workersEach worker is paid ₹400 as wages per week of 40 hoursWhen necessary, overtime is worked up to a maximum of 15 hours per week per worker at time rate plus one-half as premium. The current output on an average is 6 units per man hour which May be regarded as standard output. If bonus scheme is introduced, it is expected that the output will increase to 8 units per man hour. The workers will, if necessary, continue to work overtime up to the specified limit although no premium on incentives will be paid.

The company is considering introduction of either Halsey Scheme or Rowan Scheme of Wage Incentive system. The budgeted weekly output is 19,200 units. The selling price is ₹11 per unit and the direct Material Cost is ₹8 per unit. The variable overheads amount to ₹0.50 per direct labour hour and the fixed overheads is ₹9,000 per week. Prepare a Statement to show the effect on the Company's weekly profit of the proposal to introduction (a) Halsey Scheme, and (b) Rowan Scheme

Halsey And Rowan – Simultaneous Equation

Question 46 - Study Material, Pyq

Two workmen, 'A' and 'B', produce the same product using the same material. Their normal wage rate is also the same. 'A' is paid bonus according to the Rowan system, while 'B' is paid bonus according to the Halsey system. The time allowed to make the product is 50 hours 'A' takes 30 hours while 'B' takes 40 hours to complete the product. The factory overhead rate is ₹5 per man-hour actually worked. The factory cost for the product for 'A' is ₹3,490 and for 'B' it is ₹3,600. Required:

(a) Compute the normal rate of wages;
(b) Compute the cost of materials cost;
(c) Prepare a statement comparing the factory cost of the products as made by the two workmen.

Equal Wages Under Halsey And Rowan Scheme

Question 47 - Pyq, Study Material

Bonus paid under the Halsey Plan with bonus at 50% for the time saved equals the bonus paid under the Rowan system when will this statement hold good? (Your answer should contain the Proof).

Choice Of Incentive Scheme

Question 48 - Study Material, Pyq

A factory having the latest sophisticated machines wants to introduce an incentive scheme for its workers, keeping in view the following:

(i) The entire gains of improved production should not go to the workers
(ii) In the name of speed, quality should not suffer.
(iii) The rate setting departments being newly established are liable to commit mistakes.

You are required to devise a suitable incentive scheme and demonstrate by an illustrative numerical example how your scheme answers to all the requirements of the management.

Answer:

Rowan Scheme of premium bonus (variable sharing plan) is a suitable incentive scheme for the workers of the factory. If this scheme is adopted, the entire gains due to time saved by a worker will not pass to him. Another feature of this scheme is that a worker cannot increase his earnings or bonus by merely increasing its work speed because bonus under Rowan Scheme is maximum when the time taken by a worker on a job is half of the time allowed.

Lastly, Rowan System provides a safeguard in the case of any loose fixation of the standards by the rate-setting department. It May be observed from the following illustration that in the Rowan Scheme the bonus paid will be low due to any loose fixation of standards.

Question 49 - Pyq

The standard time allowed for a certain piece of work is 300 hoursNormal wages is ₹60 per hour.

The bonus system applicable to the work is as follows:

Percentage of time saved to time allowed (slab rate)	Bonus
(i) Up to the first 20% of time allowed	25% of the corresponding saving in time.
(ii) For and within the next 30% of time allowed	40% of the corresponding saving in time.
(iii) For and within the next 30% of time allowed	30% of the corresponding saving in time.
(iv) For and within the next 20% of time allowed	10% of the corresponding saving in time.

Calculate the total earnings of a worker over the piece of work and his earnings per hour when he takes.
(a) 320 hours,
(b) 150 hours, and 30 hours respectively.

Job Costing and Labour Cost

Question 50 - Pyq

Following are the Particulars for April, relating to four employees working in a factory for job No. 201.

Employee	Designation	Wages
Employee I	Foreman	₹6400 per month
Employee II	Mechanic	₹180 per day
Employee III	Machine Operator	₹150 per day
Employee IV	Workman	₹120 per day

The normal working hours per week of six days are 48 at 8 hours per day. Sundays are paid holidays and there was no other holiday during the month. Provident Fund Contribution was 12% of monthly wages by both Employer and Employee. Employees' State Insurance Contribution was 1.75% of Monthly Wages by Employee and 4.75% of Monthly wages by Employer.
From the foregoing data, calculate –
1. Net wages payable by the Employer for the month.
2. Total Amount of Provident Fund Contribution to be deposited by Employer.
3. Total Amount of ESI Contribution to be deposited by Employer.
4. Total Labour Cost to the Employer for the month of April, 2010 chargeable to Job No. 201.
5. Total cost of Job no. 201 requiring Material valued at ₹40,500 and Overheads at 50% of Prime Cost.

Computing No. Of operators for each operation and Labour Cost

Question 51 - Pyq

An article passes through five hand operations as follows:

Operation No	Time per article	Grade of worker	Wage rate per hour
1	15 minutes	A	Re. 0.65
2	25 minutes	B	Re. 0.50
3	10 minutes	C	Re. 0.40
4	30 minutes	D	Re. 0.35
5	20 minutes	E	Re. 0.30

The factory works 40 hours a week and the production target is 600 dozens per week. Prepare a statement showing for each operation and in total the number of operators required, the labour cost per dozen and the total labour cost per week to produce the total targeted output.

Question 52 - Pyq

Following data have been extracted from the books of M/s. ABC Private Limited:
(i) Salary (each employee, per month) - ₹30,000
(ii) Bonus - 25% of salary
(iii) Employer's contribution to PF, ESI etc. - 15% of salary
(iv) Total cost at employees' welfare activities - ₹6,61,500 per annum
(v) Total leave permitted during the year - 30 days
(vi) No. of employees - 175
(vii) Normal idle time - 70 hours per annum
(viii) Abnormal idle time (due to failure of power supply) - 50 hours
(ix) Working days per annum - 310 days of 8 hours
You are required to calculate:
1. Annual cost of each employee
2. Employee cost per hour
3. Cost of abnormal idle time, per employee

Question 53 - Pyq

A skilled worker is paid a guaranteed wage rate of ₹150.00 per hour. The standard time allowed for a job is 50 hoursHe gets an effective hourly rate of wages of ₹180.00 under Rowan Incentive Plan due to saving in time.

For the same saving in time, calculate the hourly rate of wages he will get, if he is placed under Halsey Premium Scheme (50%).

Question 54 - Pyq

The following information of a work is given:
Weekly working hours- 45
Wage Rate per hour (₹) - 8.00
Piece Rate per Unit (₹) - 4.00
Normal time taken per piece - 20 Minutes
Normal Output Per Week - 100 Pieces
Actual Output for the week - 120 Pieces
Differential Piece Rate - 80% of Piece Rate when actual output is below normal output that is 100 pieces and 120% of Piece Rate when actual output is above normal output.
You are required to calculate the earnings of a worker for a week under following plans:
Halsey Premium Scheme (50% sharing)

Question 55 - Pyq

A worker takes 15 hours to complete a piece of work for which time allowed is 20 hoursHis wage rate is ₹5 per hour. Following additional information are also available:
Material cost of work - ₹50
Factory overheads - 100% of wages
Calculate the factory cost of work under the following methods of wage payments:
(i) Rowan Plan
(ii) Halsey Plan

Question 56 - Rtp

From the following information, CALCULATE employee turNover rate using – (i) Separation Method, (ii) Replacement Method, (iii) New Recruitment Method, and (iv) Flux Method:
No. of workers as on 01.01.2019 = 3,600
No. of workers as on 31.12.2019 = 3,790
During the year, 40 workers left while 120 workers were discharged. 350 workers were recruited during the year, of these 150 workers were recruited because of exits and the rest were recruited in accordance with expansion plans.

Question 57 - Mtp

From the following information, CALCULATE employee turNover rate using – (i) Separation Method, (ii) Replacement Method, (iii) New Recruitment Method, and (iv) Flux Method:
No. of workers as on 01.04.2020 = 3,800
No. of workers as on 31.03.2021 = 4,200
During the year, 40 workers left while 160 workers were discharged and 600 workers were recruited during the year; of these, 150 workers were recruited because of exits and the rest were recruited in accordance with expansion plans

Question 58 - Mtp

(a) The labour turNover rates for the quarter ended 30th September, 2020 are computed as 14%, 8% and 6% under Flux method, Replacement method and Separation method respectively. If the number of workers replaced during 2nd quarter of the financial year 2020-21 is 36, COMPUTE the following:
(i) The number of workers recruited and joined; and
(ii) The number of workers left and discharged.

Question 59 - Pyq

Zico Ltd. has its factory at two locations viz Nasik and Satara. Rowan plan is used at Nasik factory and Halsey plan at Satara factory.
Standard time and basic rate of wages are same for a job which is Similar and is carried out on Similar machinery. Normal working hours is 8 hours per day in a 5 day week.
Job at Nasik factory is completed in 32 hours while at Satara factory it has taken 30 hours Conversion costs at Nasik and Satara are ₹5,408 and ₹4,950 respectively. Overheads account for ₹25 per hour. Required:
(i) To find out the normal wage; and

(ii) To compare the respective conversion costs.

Question 60 - Rtp

ADV Pvt. Ltd. manufactures a product which requires skill and precision in work to get quality products. The company has been experiencing high labour cost due to slow speed of work. The management of the company wants to reduce the labour cost but without compromising with the quality of work. It wants to introduce a bonus scheme but is indifferent between the Halsey and Rowan scheme of bonus.
For the month of November 2019, the company budgeted for 24,960 hoursof work. The workers are paid ₹80 per hour. Required:
Calculate and suggest the bonus scheme where the time taken (in %) to time allowed to complete the works is (a) 100% (b) 75% (c) 50% & (d) 25% of budgeted hours

Question 61 - Pyq

A skilled worker engaged in machining of component 'WYE' receives an ordinary wage rate of Rs 504 per day of 8 hoursThe standard output for machining the component has been fixed at 64 pieces per hour (time as fixed for premium bonus).
In certain week of 48 hours, the output of the worker on this machine is 3,456 pieces.
You are required to calculate the total weekly earnings of workers under the following :
(i) Rowan premium bonus system ;
(ii) Hasley Weir premium plan ;
(iii) If a bonus of Rs 1.50 is paid per piece in excess of standard output.

Question 62 - Rtp

A total of 108 labour hours have been put in a particular job card for repair work engaging a semi-skilled and skilled labour (Mr. Deep and Mr. Sam respectively).
The hours devoted by both the workers individually on daily basis for this particular job are given below:

Monday	Tuesday	Wednesday	Thursday	Friday
10.5	8.0	10.5	9.5	10.5

The skilled labour also worked on Saturday for 10 hours
Sunday is a weekly holiday and each worker has to work for 8 hours on all week days and 5 hours on Saturdays; the workers are however paid full wages for Saturday (8 hours for 5 hours worked).
Semi-skilled and skilled worker is paid ordinary wage @ ₹400 and ₹600 respectively per day of 8 hours labour. Further, the workers are also paid dearness allowance @ 20%.
Extra hours worked over and above 8 hours are also paid at ordinary wage rate however, overtime premium of 100% of ordinary wage rate is paid if a worker works for more than 9 hours in a day and 48 hours in a week.
You are required to COMPUTE the wages payable to Mr. Deep (Semi-skilled) and Mr. Sam (Skilled).

Question 63 - Pyq

A skilled worker is paid a guaranteed wage rate of ₹150 per hour. The standard time allowed for a job is 10 hoursHe took 8 hours to complete the job. He has been paid the wages under Rowan Incentive Plan.
You are required to:
(i) Calculate an effective hourly rate of earnings under Rowan Incentive Plan.
(ii) Calculate the time in which he should complete the job, if the worker is placed under Halsey Incentive Scheme (50%) and he wants to maintain the same effective hourly rate of earnings.

Question 64 - Mtp

ABC Ltd. has its factory at two locations viz Noida and Patparganj. Rowan plan is used at Noida factory and Halsey plan at Patparganj factory.
Standard time and basic rate of wages are same for a job which is Similar and is carried out on Similar machinery. Normal working hours is 9 hours per day in a 5 day week.
Job at Noida factory is completed in 36 hours while at Patparganj factory it has taken 33 hours45 minutes.
Conversion costs at Noida and Patparganj are ₹6,084 and ₹5,569 respectively. Overheads account for ₹25 per hour. Required:
(i) To find out the normal wage; and
(ii) To compare the respective conversion costs.

Question 65 - Pyq

PQR Limited has replaced 72 workers during the quarter ended 31st March 2022. The labour rates for the quarter are as follows:

Flux method	16%
Replacement method	8%
Separation method	5%

You are required to ascertain:
(i) Average number of workers on roll (for the quarter),
(ii) Number of workers left and discharged during the quarter,
(iii) Number of workers recruited and joined during the quarter,
(iv) Equivalent employee turNover rates for the year.

Question 66 - Mtp

Archika Tyre Manufacturing Private Limited has four workersRam, Shyam, Mohan & Kundan who are paid wages on the basis of ₹100 per day, ₹120 per day, ₹130 per day & ₹2500 per month respectively.
Standard working days in a week are six of 8 hours per day. For the month of October 2022, there was only one holiday other than Sunday for which no payment was made to employees except Kundan who was paid for full month. Sundays are considered paid holidays i.e. employees are paid for Sunday also even there is no working on that day. Provident fund contribution is 8% of monthly wages by employer and employee each. ESI contribution is 5% of monthly wages by employer and 4% of monthly wages by employee.
On the basis of above information, you are required to CALCULATE (regarding the month of October 2022):
1. Amount of net wages receivable by each employee from the employer.
2. What is the total amount of Provident Fund required to be deposited by employer?
3. What is the total amount of ESI required to be deposited by employer?
4. What is the total labour cost to employer?

If total material cost is ₹20,000 for October 2022 and overheads are charged equal to labour cost, calculate total cost for the month.

Question 67 - Mtp

R Ltd. has computed labour turNover rates for the quarter ended 31 st March, 2022 as 20%, 10% and 5% under flux method, replacement method and separation method respectively. If the number of workers replaced during that quarter is 50,
FIND OUT
1. workers recruited and joined
2. Workers left and discharged and
3. Average number of workers on roll.

Question 68 - Pyq

A skilled worker, in PK Ltd., is paid a guaranteed wage rate of ₹15.00 per hour in a 48- hour week. The standard time to produce a unit is 18 minutes. During a week, a skilled worker -Mr. 'A' has produced 200 units of the product. The Company has taken a drive for cost reduction and wants to reduce its labour cost.
You are required to calculate wages of Mr. 'A' under each of the following methods:
a. Time rate,
b. Piece -rate with a guaranteed weekly wage,
c. Halsey Premium Plan
d. Rowan Premium Plan
Suggest which bonus plan i.e. Halsey Premium Plan or Rowan Premium Plan, the company should follow.

Question 69 - Pyq

SMC Company limited is producing a particular design of toys under the following existing incentive system:

Normal working hours in the week		48 hours
Late shift hours in the week		12 hours
Rate of payment	Normal working:	₹150 per hour
	Late shift:	₹300 per hour

Average output per operator for 60 hours per week (including late shift hours): 80 toys.

The company's management has now decided to implement a system of labour cost payment with either the Rowan Premium Plan or the Halsey Premium Plan in order to increase output, eliminate late shift overtime, and reduce the labour cost.
The following information is obtained:
The standard time allotted for ten toys is seven and half hour
Time rate: ₹150 per hour (as usual).
Assuming that the operator works for 48 hours in a week and produces 100 toys, you are required to calculate the weekly earning for one operator under:
1. The existing Time Rate,
2. Rowan Premium Plan.

Question 70 - Rtp

Following information are available from the cost records of BMR Limited, CALCULATE Labour turNover rate and Labour flux rate:
No. of Employees as on 01.04.2021 = 9,400
No. of Employees as on 31.03.2022 = 10,600
During the year, 160 Employees left while 640 Employees were discharged and 1,500 Employees were recruited during the year; of these, 400 Employees were recruited because of exits and the rest were recruited in accordance with expansion plans.

Question 71 - Study Material

Aditya Ltd. is an engineering manufacturing company producing job order on the basis of specification given by the customers During the last the month it has completed three job works namely A, B and C. The following are the items of expenditures which are incurred apart from direct materials and direct employee cost:
Office and administration cost- ₹3,00,000.
Product blueprint cost for job A – ₹1,40,000
Hire charges paid for machinery used for job work B- ₹40,000
Salary to office attendants- ₹50,000
One time license fee paid for software used to make computerised graphics for job C- ₹50,000.
Salary paid to marketing manager- ₹1,20,000. Required:
CALCULATE direct expenses attributable to each job.

Question 72 - Study Material

The following expenditures were incurred in Aditya Ltd. For the month of March 2023:

	Particulars	(₹)
(i)	Paid for power & fuel	4,80,200
(ii)	Wages paid to factory workers	8,44,000
(iii)	Bill paid to job workers	9,66,000
(iv)	Royalty paid for production	8,400
(v)	Fee paid to technician hired for the job	96,000
(vi)	Administrative overheads	76,000
(vii)	Commission paid to sales staffs	1,26,000

You are required to CALCULATE direct expenses for the month.

Overheads-Absorption Costing Method

Question 1 - Study Material

XL Ltd. has three production departments and four service departments. The expenses for these departments as per primary Distribution Summary are as follows:

Production Departments:

A 30,000

B 26,000

C 24,000

Service Departments:

Stores	4,000
Time-keeping and Accounts	3,000
Power	1,600
Canteen	1,000

The following information is also available in respect of the production departments:

	Dept. A	Dept. B	Dept. C
Horse power of machine	300	300	200
Number of workers	20	15	15
Value of stores requisition in (₹)	2,500	1,500	1,000

Apportion the costs of service department over the production departments.

Question 2 - Rtp

TRI-D has three production Departments – Extrusion, Machining and Finishing and a Service Department known as production services which for the Production Departments in the ratio of 3:2:1.

The following which represent normal normal activity levels have been budgeted for the ending 31st December.

Cost (In ₹)	Extrusion	Machining	Finishing	Production Services	Total
Direct Wages	58,000	72,000	90,000	-	2,20,000
Direct Materials	40,000	29,000	15,000	-	84,000
Indirect Wages	15,000	21,000	8,000	58,000	1,02,000
Depreciation					84,000
Rent					22,000
Power					1,80,000
Personnel Department Expenses					60,000
Insurance					48,000
Other Data:					
Direct Labour Hours	7,250	9,000	15,000	-	31,250
Machine Hours	15,500	20,000	2,500	2,000	40,000
Floor Area (sqm)	800	1,200	1,000	1,400	4,400
Fixed Assets (₹)	1,60,000	1,40,000	30,000	70,000	4,00,000
Employees	40	56	94	50	240

1. Prepare an Overhead Analysis Sheet and calculate Overhead Absorption Rates for the production Departments.

2.The following data are available for the actual result of the Extrusion Department for the period.

Actual Overheads = ₹2,11,820, Actual Labour Hours = 7,380, Actual Machine Hours = 16,250.

Calculate the Under/Over Recovery of Overheads for the Extrusion Department.

Re – Apportionment : Direct Method and Step Ladder Method

Question 3 - Study Material

Modern Manufactures Ltd. has three Production Departments P1, P2, P3 and two Service Departments S1and S2 details pertaining to which are as under:

	P_1	P_2	P_3	S_1	S_2
Direct wages (₹)	3,000	2,000	3,000	1,500	195
Working hours	3,070	4,475	2,419	-	-

Value of machines (₹)	60,000	80,000	1,00,000	5,000	5,000
H.P. of machines	60	30	50	10	-
Light points	10	15	20	10	5
Floor space (sp. ft.)	2,000	2,500	3,000	2,000	500

The following figures extracted from the Accounting records are relevant:

	(₹)
Rent and Rates	5,000
General Lighting	600
Indirect wages	1,939
Power	1,500
Depreciation on machines	10,000
Sundries	9,695

The expenses of the Service Departments are allocated as under :

	P_1	P_2	P_3	S_1	S_2
S_1	20%	30%	40%	-	10%
S_2	40%	20%	30%	10%	-

FIND OUT the total cost of product X which is processed for manufacture in Departments P1, P2 and P3 for 4, 5 and 3 hours respectively, given that its Direct Material Cost is ₹50 and Direct Labour Cost is ₹30.

Question 4 - Study Material

The ABC Company has the following account balances and distribution of direct charges on 31st March, 2020.

Particulars	**Total**	**Production Depts.**		**Service Depts.**	
		Machine shop	**Packing**	**Gen. Plant**	**Store & Maintenance**
	(Rs)	(Rs)	(Rs)	(Rs)	(Rs)
Allocated Overheads:					
Indirect labour	14,650	4,000	3,000	2,000	5,650
Maintenance material	5,020	1,800	700	1,020	1,500
Misc. supplies	1,750	400	1,000	150	200
Superintendent's salary	4,000	-	-	4,000	
Cost & payroll salary	10,000	-	-	10,000	-
Overheads to be apportioned:					
Power	8,000				
Rent	12,000				
Fuel and Heat	6,000				
Insurance	1,000				
Trade License fees	2,000				
Depreciation	1,00,000				
	1,64,420	6,200	4,700	17,170	7,350

The following data were compiled by means of the factory survey made in the previous year:

	Floor Space (Sq. ft.)	**Radiator Sections**	**No. of Employees**	**Investment (Rs)**	**H.P hours**
Machine Shop	2,000	45	20	6,40,000	3,500
Packing	800	90	10	2,00,000	500
General Plant	400	30	3	10,000	-
Store & Maintenance	1,600	60	5	1,50,000	1,000
	4,800	225	38	10,00,000	5,000

Expenses charged to the stores and maintenance departments are to be distributed to the other departments by the following percentages:

Machine shop 50%; Packing 20%; General Plant 30%; General Plant overheads is distributed on the basis of number of employees:
(a) PREPARE an overhead distribution statement with supporting schedules to show computations and basis of distribution including distribution of the service departments' expense to production departments.
(b) DETERMINE the service department distribution by the method of continued distribution (repeated distribution) through 3 cycles. Show all calculations to the nearest rupees.

Question 5 - Study Material

The expenses of two production departments A and B and two service department X and Y are as under:

Particulars	Amount (₹)	Apportionment Basis		
		Y	A	B
X	2,000	25%	40%	35%
Y	1,500	-	40%	60%
A	3,000			
B	3,200			

Question 6 - Study Material

Deccan Manufacturing Ltd., have three departments which are regarded as production departments. Service departments' costs are distributed to these production departments using the "Step Ladder Method" of distribution. Estimates of factory overhead costs to be incurred by each department in the forthcoming year are as follows. Data required for distribution is also shown against each department:

Department	Factory overhead (₹)	Direct labour hours	No. of employees	Area in sq. m.
Production:				
X	1,93,000	4,000	100	3,000
Y	64,000	3,000	125	1,500
Z	83,000	4,000	85	1,500
Service:				
P	45,000	1,000	10	500
Q	75,000	5,000	50	1,500
R	1,05,000	6,000	40	1,000
S	30,000	3,000	50	1,000

The overhead costs of the four service departments are distributed in the same order, viz., P, Q, R and S respectively on the following basis.
Department - Basis
P - Number of employees
Q - Direct labour hours
R - Area in square metres
S - Direct labour hours
You are required to:
a) PREPARE a schedule showing the distribution of overhead costs of the four service departments to the three production departments; and
b) CALCULATE the overhead recovery rate per direct labour hour for each of the three production departments.

Question 7 - PYQ

RST Ltd. has two production departments: Machining and Finishing. There are three service departments: Human Resource (HR), Maintenance and Design. The budgeted costs in these service departments are as follows:

Particulars	HR (₹)	Maintenance (₹)	Design (₹)
Variable	1,00,000	1,60,000	1,00,000
Fixed	4,00,000	3,00,000	6,00,000
	5,00,000	4,60,000	7,00,000

The usage of these Service Departments output during the year just completed is as follows:

Provision of service output (in hours of service)

	Providers of Service

Users of Service	HR	Maintenance	Design
HR	-	-	-
Maintenance	500	-	-
Design	500	500	-
Machining	4,000	3,500	4,500
Finishing	5,000	4,000	1,500
Total	**10,000**	**8,000**	**6,000**

Required:
(i) Use the direct method to re-apportion RST Ltd's service department cost to its production departments.
(ii) Determine the proper sequence to use in re-apportioning the firm's service department cost by step-down method.
(iii) Use the step-down method to reapportion the firm's service department cost.

Re – Distribution of Power Generation Costs – Step Ladder Method

Question 8 - PYQ

Self-help Ltd has Gen sets and produces its own power. Data for Power Costs are as follows:

Particulars	Production Department		Service Department	
	A	B	X	Y
Needed at Capacity Production (HP hours)	10,000	20,000	12,000	8,000
Used during a month (HP hours)	8,000	13,000	7,000	6,000

During the month, costs for generating power amounted to ₹9,300, of this ₹2,500 is Fixed Cost. Service Department X renders service to Departments A, B and Y in the ratio 13: 6: 1, while Y renders service to Departments A and B in the ratio 31: 3. Given that the Direct Labour Hours in Departments A and B are 1,650 hours and 2,175 hours respectively, find out the Power Cost per Labour Hour in each of these two Departments.

Question 9 - PYQ

SNS Trading Company has three main Departments and two Service Departments. The data for each department is given below :

Departments	Expenses (in Rs)	Area in (Sq. Mtr)	Number of Employees
Main Department :			
Purchase Department	5,00,000	12	800
Packing Department	8,00,000	15	1700
Distribution Department	3,50,000	7	700
Service Departments :			
Maintenance Department	6,40,000	4	200
Personnel Department	3,20,000	6	250

The cost of Maintenance Department and Personnel Department is distributed on the basis of 'Area in Square Metres' and 'Number of Employees' respectively.
You are required to :
(i) Prepare a statement showing the distribution of expenses of Service Departments to the main Departments using the "Step Ladder Method" of Overhead Distribution.
(ii) Compute the Rate per hour of each main Department, given that, the Purchase Department, Packing Department and Distribution Department works for 12 hours a day, 24 hours a day and 8 hours a day respectively. Assume that there are 365 days in a year and there are no holidays.

Re – Apportionment – Repeated Distribution Method

Question 10 - Study Material

PH Ltd., is a manufacturing company having three production departments, 'A', 'B' and 'C' and two service departments 'X' and 'Y'. The following is the budget for December 2005:

Particulars	Total (₹)	A (₹)	B (₹)	C (₹)	X (₹)	Y (₹)
Direct material		1,000	2,000	4,000	2,000	1,000
Direct wages		5,000	2,000	8,000	1,000	2,000
Factory rent	4,000					

Power	2,500					
Depreciation	1,000					
Other overheads	9,000					
Additional information:						
Area (Sq.ft.)		500	250	500	250	500
Capital value (₹Lakhs) of assets		20	40	20	10	10
Machine hours		1,000	2,000	4,000	1,000	1,000
Horse power of machines		50	40	20	15	25

A technical assessment of the apportionment of expenses of service departments is as under:

Particulars	**A (%)**	**B (%)**	**C (%)**	**X (%)**	**Y (%)**
Service Dept. 'X'	45	15	30	-	10
Service Dept. 'Y'	60	35	-	5	-

Required:
(i) A statement showing distribution of overheads to various departments.
(ii) A statement showing re-distribution of service departments expenses to production departments.
(iii) Machine hour rates of production departments 'A', 'B' and 'C'.
(iv) A statement showing distribution of overheads to various departments after re-apportioning service departments' overhead by using simultaneous equation method.

Question 11 - PYQ

A company has two production departments and two service departments. The data relating to a period are as under:

Particulars	**Production Departments**		**Service Departments**	
	PD_1	**PD_2**	**SD_1**	**SD_2**
Direct Materials (₹)	80,000	40,000	10,000	20,000
Direct Wages (₹)	95,000	50,000	20,000	10,000
Overheads (₹)	80,000	50,000	30,000	20,000
Power Requirement of Normal capacity operations (Kwh)	20,000	35,000	12,500	17,500
Actual power Consumption during the period (Kwh)	13,000	23,000	10,250	10,000

The power requirement of these departments is met by a power generation plant. The said plant incurred an expenditure, which is not included above, of ₹1,21,875 out of which a sum of ₹84,375 was variable and the rest fixed.

After apportionment of power generation plant costs to the four departments, the service department overheads are to be redistributed on the following bases:

Particulars	**PD_1**	**PD_2**	**SD_1**	**SD_2**
SD_1	50%	40%	-	10%
SD_2	60%	20%	20%	-

You are required to:
(i) Apportion the power generation plant costs to the four departments.
(ii) Re-apportion service department cost to production departments.
(iii) Calculate the overhead rates per direct Labour hour of production departments given that the direct wage rates of PD_1 and PD_2 are ₹5 and 4 per hour respectively.

Re – Apportionment – Simultaneous Equation Method

Question 12 - Study Material

Service departments expenses

	₹
Boiler House	3,000
Pump Room	600

The allocation is:

Particulars	**Production department**	**Boiler House**	**Pump Room**

	A	B		
Boiler House	60%	35%	-	5%
Pump Room	10%	40%	50%	-

Question 13 - PYQ

Delta Ltd. is a manufacturing concern having two production departments PI and P2 and two service departments S1 and S2. After making a primary distribution of factory overheads, the total overheads of all departments are as under:

	In (₹)
P_1	4,02,000
P_2	2,93,000
S_1	3,52,000
S_2	33,000

Overheads of service departments are reapportioned as below :

	P_1	P_2	S_1	S_2
S_1	40%	50%	-	10%
S_2	50%	40%	10%	-

A product 'Z' passes through all the two production departments – P_1 and P_2 and each unit of product remain there in process for 2 and 3 hours respectively. The material and labour cost of one unit of product 'Z' is ₹500 and ₹350 respectively.

The company run for all the 365 days of the year and 16 hours per day. You are required:

(i) To make secondary distribution of overheads of service departments by applying Simultaneous Equation method and

(ii) Determine the total cost of one unit of product Z.

Question 14 - Study Material

A Ltd., manufactures two products A and B. The manufacturing division consists of two production departments P1 and P2 and two service departments S1 and S2.Budgeted overhead rates are used in the production departments to absorb factory overheads to the products. The rate of Department P1 is based on direct machine hours, while the rate of Department P2 is based on direct labour hours. In applying overheads, the pre-determined rates are multiplied by actual hours. For allocating the service department costs to production departments, the basis adopted is as follows:

(i) Cost of Department S1 to Department P1 and P2 equally, and

(ii) Cost of Department S2 to Department P1 and P2 in the ratio of 2 : 1 respectively

The following budgeted and actual data are available:

Annual profit plan data:

Factory overheads budgeted for the year:

Production Departments		Service Departments	
P_1	P_2	S_1	S_2
Rs 25,50,000	Rs 21,75,000	Rs 6,00,000	Rs 4,50,000

Budgeted output in units:

Product A 50,000; B 30,000.

Budgeted raw-material cost per unit:

Product A Rs 120; Product B Rs 150.

Budgeted time required for production per unit:

Department P_1 Product A : 1.5 machine hours
Product B : 1.0 machine hour

Department P_2 Product A : 2 Direct labour hours
Product B : 2.5 Direct labour hours

You are required to:

(i) COMPUTE the pre-determined overhead rate for each production department.

(a) Trial and Error Method

Question 15 - Study Material, PYQ

The following account balances and distribution of indirect charges are taken from the accounts of a manufacturing concern for the year ending on 31st March, 2012:

Item	Total Amount	Production Departments			Service Departments	
	(₹)	X (₹)	Y (₹)	Z (₹)	A (₹)	B (₹)
Indirect Material	1,25,000	20,000	30,000	45,000	25,000	5,000
Indirect Labour	2,60,000	45,000	50,000	70,000	60,000	35,000
Superintendent's Salary	96,000	-	-	96,000	-	-
Fuel & Heat	15,000					
Power	1,80,000					
Rent & Rates	1,50,000					
Insurance	18,000					
Meal Charges	60,000					
Depreciation	2,70,000					

The following departmental data are also available:

Item	Production Departments			Service Departments	
	X	Y	Z	A	B
Area (Sq. ft.)	4,400	4,000	3,000	2,400	1,200
Capital Value of Assets (₹)	4,00,000	6,00,000	5,00,000	1,00,000	2,00,000
Kilowatt Hours	3,500	4,000	3,000	1,500	-
Radiator Sections	20	40	60	50	30
No. of Employees	60	70	120	30	20

Expenses charged to the service departments are to be distributed to other departments by the following percentages:

	X	Y	Z	A	B
Department A	30	30	20	-	20
Department B	25	40	25	10	-

Prepare an overhead distribution statement to show the total overheads of production departments after re-apportioning service departments' overhead by using simultaneous equation method.' Show all the calculations to the nearest rupee.

Question 16 - PYQ

Write short note on High and Low Points of segregating Semi-Variable Costs?

Answer:

- Determine the Sales Value and Total Costs at the highest volume and lowest volume.
- Compute Variable Costs as a % of Sales Value =
- Compute Variable Costs at either highest or lowest volume as Sales × Variable Cost % computed above.
- Compute Fixed Costs = Total Costs – Variable Costs

Question 17 - PYQ

Following information is available for the first and second quarter of the year 2008-09 of ABC Limited:

	Production (in units)	Semi-variable cost (₹)
Quarter I	36,000	2,80,000
Quarter II	42,000	3,10,000

You are required to segregate the semi-variable cost and calculate : (a) Variable cost per unit; and (b) Total fixed cost.

Question 18 - PYQ

Beginners & Co. has recorded the following data in the two most recent periods:

Total Cost of Production (₹)	Volume of Production (Units)
14,600	800
19,400	1,200

What is the best estimate of the Firm's Fixed Costs per period?

Question 19 - PYQ

From the following information, calculate the amount of Variable OH per unit & amount of Total Fixed OH for the whole year.

Particulars	Output (Units)	Total Overheads (₹)
1st April to 30th June	10,000	40,000
1st July to 31st March	35,000	1,35,000

Impact of Blanket and Departmental Overhead Recovery Rates

Question 20 - Study Material, PYQ

A factory has three production departments. The policy of the factory is to recover the production overheads of the entire factory by adopting a single blanket rate based on the percentage of total factory overheads to total factory wages. The relevant data for a month are given below:

Department	Direct Materials (₹)	Direct Wages (₹)	Factory Overheads (₹)	Direct Labour Hour	Machine Hours
Budget					
Machining	6,50,000	80,000	3,60,000	20,000	80,000
Assembly	1,70,000	3,50,000	1,40,000	1,00,000	10,000
Packing	1,00,000	70,000	1,25,000	50,000	-
Actual					
Machining	7,80,000	96,000	3,90,000	24,000	96,000
Assembly	1,36,000	2,70,000	84,000	90,000	11,000
Packing	1,20,000	90,000	1,35,000	60,000	-

The details of one of the representative jobs produced during the month are as under:

Job No. CW 7083:

Department	Direct materials (₹)	Direct wages (₹)	Direct labour hour	Machine hours
Machining	1,200	240	60	180
Assembly	600	360	120	30
Packing	300	60	40	-

The factory adds 30% on the factory cost to cover administration and selling overheads and profit.

Required:

(i) Calculate the overhead absorption rate as per the current policy of the company and determine the selling price of the Job No. CW 7083.

(ii) Suggest any suitable alternative method(s) of absorption of the factory overheads and calculate the overhead recovery rates based on the method (s) so recommended by you.

(iii) Determine the selling price of Job CW 7083 based on the overhead application rates calculated in (ii) above.

(iv) Calculate the department wise and total under or over recovery of overheads based on the company's current policy and the method(s) recommended by you.

Choice of Method of Recovery

Question 21 - Study Material

The products of a factory pass through two departments, though the output emerging from the first department is also saleable. The direct labour in the two processes per period is ₹60,000 and ₹40,000 and the indirect expenses are ₹45,000 and ₹40,000. The rate for recovery of the overheads is 85%. Do you think the method followed is proper? [There should be separate rates for the two departments.]

Various Methods of Absorption and Job Costs

Question 22 - Rtp

The following figures have been extracted from the books of a manufacturing Company. All jobs pass through the Company's two Departments:

Particulars	Welding Department	Finishing Department
Material Labour	₹60,000	₹50,000

Direct Labour	₹30,000	₹15,000
Factory Overheads	₹18,000	₹12,000
Direct Labour Hours	12,000 hours	5,000 hours
Machine Hours	10,000 hours	2,000 hours
The following information relates to Job 27:		
Material	₹1,200	₹100
Direct Labour	₹650	₹250
Direct Labour Hours	265 hours	70 hours
Machine Hours	255 hours	25 hours

1. List 5 methods of absorbing Factory OH by jobs, showing the rate for each Department under the methods.
2. Prepare a statement showing the different cost results for Job 27 under each of the methods referred to.

Question 23 - Study Material

The actual figures relating to production for a period in a factory were as follows:

Material used	₹5,00,000
Direct labour (Total 1,20,000)	₹4,00,000
Factory expenses	₹3,00,000
Machine hours totaled 1,00,000	

A job requires ₹20,000 in material, and 4,000 hours of labour @ ₹3 per hour (on the average) of which 2,800 were machine hours. Ascertain the cost of the job using different methods of absorbing overheads.
[₹44,000, ₹41,000, ₹42,667, ₹42,000 and ₹40,400 respectively on the basis of materials, labour, prime cost, productive labour hours and machine hours.]

Treatment of Under Absorption

Question 24 - PYQ, Rtp

PQR manufactures – a small scale enterprise produces a single product and has adopted a policy to recover the production overheads of the factory by adopting a single blanket rate based on machine hours. The budgeted production overheads of the factory are ₹10,08,000 and budgeted machine hours are 96,000.
For a period of first six months of the financial year 2007-2008, following information were extracted from the books:

Actual production overheads	₹6,79,000
Amount included in the production overheads:	
Paid as per court's order	₹45,000
Expenses of previous year booked in current year	₹10,000
Paid to workers for strike period under an award	₹42,000
Obsolete stores written off	₹18,000

Production and sales data of the concern for the first six months are as under:

Production:	
Finished goods	22,000 units
Works-in-progress (50% complete in every respect)	16,000 units
Sale:	
Finished goods	18,000 units

The actual machine hours worked during the period were 48,000 hours. It is revealed from the analysis of information that 25% of the under-absorption was due to defective production policies and the balance was attributable to increase in costs.
You are required:
(i) To determine the amount of under absorption of production overheads for the period,
(ii) To show the accounting treatment of under-absorption of production overheads, and
(iii) To apportion the unabsorbed overheads over the items.

Question 25 - Study Material

ABC Ltd. manufactures a single product and absorbs the production overheads at a pre-determined rate of Rs 10 per machine hour. At the end of financial year 2019-20, it has been found that actual production overheads incurred were Rs 6,00,000. It included Rs 45,000 on account of 'written off' obsolete stores and Rs 30,000 being the wages paid for the strike period under an award.
The production and sales data for the year 2019-20 is as under:

Production:
Finished goods 20,000 units
Work-in-progress 8,000 units (50% complete in all respects)
Sales:
Finished goods 18,000 units
The actual machine hours worked during the period were 48,000. It has been found that one-third of the under-absorption of production overheads was due to lack of production planning and the rest was attributable to normal increase in costs.
(i) CALCULATE the amount of under-absorption of production overheads during the year 2019-20; and
(ii) SHOW the accounting treatment of under-absorption of production overheads.

Question 26 - Study Material, PYQ
The total overhead expenses of a factory are ₹4,46,380. Taking into account the normal working of the factory, overhead was recovered in production at ₹1.25 per hour. The actual hours worked were 2,93,104. How would you proceed to close the books of accounts, assuming that besides 7,800 units produced of which 7,000 were sold, there were 200 equivalent units in work-in-progress.
On investigation, it was found that 50% of the unabsorbed overhead was on account of increase in the cost of indirect materials and indirect labour and the remaining 50% was due to factory inefficiency. Also give the profit implication of the method suggested.

Question 27 - Study Material
In a factory, overheads of a particular department are recovered on the basis of ₹5 per machine hour. The total expenses incurred and the actual machine hours for the department for the month of August were ₹80,000 and 10,000 hours respectively. Of the amount of ₹80,000, ₹15,000 became payable due to an award of the Labour Court and ₹5,000 was in respect of expenses of the previous year booked in the current month (August). Actual production was 40,000 units, of which 30,000 units were sold. On analysing the reasons, it was found that 60% of the under-absorbed overhead was due to defective planning and the rest was attributed to normal cost increase. EXPLAIN how would you treat the under-absorbed overhead in the cost accounts?

Question 28 - Rtp, PYQ
Your Company uses an integrated accounting system and applies overheads on the basis of "pre-determined" rates. The following figures are extracted from the Trial Balance as at 31st March.

- Manufacturing Overhead ₹4,26,544 Dr.
- Manufacturing Overhead applied ₹3,65,904 Dr.
- Work-in-Progress ₹1,41,480 Dr.
- Finished Goods Stock ₹2,30,732 Dr.
- Cost of Goods Sold ₹8,40,588 Dr.

You are required to show the profit implications of treating under-absorption under the following methods –
1. Write off to Profit and Loss Account,
2. Adjustment to Cost of Sales and Inventories of WIP and Finished Goods.

Question 29 - PYQ, Study Material
In a manufacturing unit, factory overhead was at a pre-determined rate of ₹25 per man-day. The total factory overhead expenses incurred and the man-days actually worked were ₹41.50 lakhs and 1.5 lakh man-days respectively. Out of the 40,000 units produced during a period, 30,000 were sold.
On analyzing the reasons, it was found that 60% of the unabsorbed overheads were due to defective planning and the rest were attributable to increase in overhead costs.
How would unabsorbed overheads be treated in Cost Accounts?

Computation of Over/Under Recovery

Question 30 - Rtp
The Factory Overhead costs of four Production Departments of a Company engaged in executing job orders, for an accounting week, are as: Dept A: ₹19,300, Dept B: ₹4,200, Dept C: ₹4,000, Dept D: ₹2,000.
Overheads have been applied as under:

- Department A: ₹1.50 per Machine Hour for 14,000 hours.
- Department B: ₹1.30 per Direct Labour Hour for 3,000 hours.
- Department C: 80% of Direct Labour Cost of ₹6,000.
- Department D: ₹2 per piece for 950 pieces.

Find out the amount of Department-wise under and over-absorbed Overheads.

Question 31 - Study Material

A light engineering factory fabricates machine parts to customers The factory commenced fabrication of 12 Nos. machine parts to customers' specifications and the expenditure incurred on the job for the week ending 21st August, 20X8 is given below:

	(₹)	(₹)
Direct materials (all items)		780.00
Direct labour (manual) 20 hours @ ₹15 per hour		300.00
Machine facilities :		
Machine No. I : 4 hours @ ₹45	180.00	
Machine No. II : 6 hours @ ₹65	390.00	570.00
Total		1,650.00
Overheads @ ₹8 per hour on 20 manual hours		160.00
Total cost		**1,810.00**

The overhead rate of ₹8 per hour is based on 3,000 man hours per week; similarly, the machine hour rates are based on the normal working of Machine Nos. I and II for 40 hours out of 45 hours per week.

After the close of each week, the factory levies a supplementary rate for the recovery of full overhead expenses on the basis of actual hours worked during the week. During the week ending 21st August, 20X8, the total labour hours worked was 2,400 and Machine Nos. I and II had worked for 30 hours and 32.5 hours respectively.

PREPARE a Cost Sheet for the job for the fabrication of 12 Nos. machine parts duly levying the supplementary rates.

Question 32 - PYQ

Machinery was purchased from a manufacturer who claimed that his machine could produce 36.5 tonnes in a year consisting of 365 days. Holidays, break-down, etc., were normally allowed in the factory for 65 days. Sales were expected to be 25 tonnes during the year and the actually produced 25.2 tonnes during the year.

You are required to state the following figures:

(a) Rated capacity

(b) Practical capacity

(c) Normal capacity

(d) Actual capacity.

Accounting of Selling and Distribution Overhead

Question 33 - Study Material

A company which sells four products, some of them unprofitable, proposes discontinuing the sale of one of them. The following information is available regarding income, costs and activity for the year ended 31st March, 2006.

Particulars	**Products**			
	A	**B**	**C**	**D**
Sales (₹)	3,00,000	5,00,000	2,50,000	4,50,000
Cost of sales (₹)	2,00,000	4,50,000	2,10,000	2,25,000
Area of storage (Sq.ft.)	50,000	40,000	80,000	30,000
Number of parcels sent	1,00,000	1,50,000	75,000	1,75,000
Number of invoices sent	80,000	1,40,000	60,000	1,20,000

Selling and Distribution overheads and the basis of allocation are:

Particulars	**Basis of allocation**	**to products**
Fixed Costs:		
Rent & Insurance	30,000	Sq. Ft.
Depreciation	10,000	Parcel
Salesmen's salaries & expenses	50,000	Sales Volume
Administrative wages and salaries	50,000	No. of invoices
Variable Costs:		
Packing wages & materials	20 paise per parcel	

Commission	4% of sales	
Stationery	10 paise per invoice	

You are required to prepare Profit & Loss Statement, showing the percentage of profit or loss to sales for each product.

Question 34.

Apportion Ltd produces a single product in three sizes A, B and C. Prepare a statement showing the Selling and Distribution Expenses apportioned over these three sizes applying the appropriate basis for such apportionment in each case from the particulars indicated. Express the total of the costs so apportioned to each size as: (1) Cost per unit sold – (nearest paise), and (2) Percentage of Sales turNover (nearest two places of Decimal). The expenses are as under:

Expenses	Amount (₹)	Basis of Apportionment
Salesmen Salaries	10,000	Direct Charges
Sales Commission	6,000	Sales TurNover
Sales Office Expenses	2,096	Number of orders
Advertising General	5,000	Sales TurNover
Advertising Specific	22,000	Direct Charges
Packing Expenses	3,000	Total Volume in cubic feet of produces sold
Delivery Expenses	4,000	Total Volume in cubic feet of produces sold
Warehouse Expenses	1,000	Total Volume in cubic feet of produces sold
Credit Collection Expenses	1,296	Number of orders

Data available relating to the three sizes are as follows:

Particulars	Total	A	B	C
Number of Salesmen (all paid same Salary)	10	4	5	1
Units sold	10,400	3,400	4,000	3,000
Number of Orders	1,600	700	800	100
Percentage of Specific Advertising	100%	30%	40%	30%
Sales TurNover	₹2,00,000	₹58,000	₹80,000	₹62,000
Volume in cu. Ft. per unit of finished product	-	5	8	17

Question 35 - PYQ

A company is making a study of the relative profitability of the two products – A and B. In addition to direct costs, indirect selling and distribution costs to be allocated between the two products are as under:

Particulars	Amount (₹)
Insurance charges for inventory (finished)	78,000
Storage costs	1,40,000
Packing and forwarding charges	7,20,000
Salesmen salaries	8,50,000
Invoicing costs	4,50,000

Other details are:

Particulars	Product A	Product B
Selling Price per unit (₹)	500	1,000
Cost per unit (exclusive of indirect Selling and distribution costs) (₹)	300	600
Annual sales in units	10,000	8,000
Average inventory (units)	1,000	800
Number of invoices	2,500	2,000

One unit of product A requires a storage space twice as much as product B. The cost to pack and forward one unit is the same for both the products. Salesmen are paid salary plus commission @ 5% on sales and equal amount of efforts are put worth on the sales of each of the products.

Required:

(i) Set up a schedule showing the apportionment of the indirect selling and distribution costs between the two products.
(ii) Prepare the statement showing the relative profitability of the two products.

Use of Rates Based on Actual Overhead Incurred – Effects of WIP and Finished Goods

Question 36 - Rtp

A Manufacturing Company absorbs OH into the cost of its 3 production departments by means of pre-determined departmental rates per Direct Labour Hour (DLH). The following data is obtained for the year:

Departments	Overhead Incurred	Actual DLH (Hours)	Predetermined OH Rate	Total OH Absorbed	DLH contained in	
					WIP (Hours)	FG (Hours)
A	₹10,000	25,000	₹0.50 per hour	₹12,500	3,000	7,000
B	₹37,800	84,000	₹0.30 per hour	₹25,200	14,000	8,000
C	₹22,500	45,000	₹0.40 per hour	₹18,000	2,000	4,000

1. Calculate for each department, the Recovery Rate per DLH, based on OH actually incurred.
2. Calculate the extent to which the values of WIP and Finished Goods for the year should be increased / Decreased for each department, in view of the OH rates based on OH actually incurred.

Question 37 - PYQ

You are given the following information of the three machines of a Manufacturing Department of X Ltd:
Preliminary Estimates of Expenses (₹per annum)

Particulars	Total	Machine A	Machine B	Machine C
Depreciation	20,000	7,500	7,500	5,000
Spare Parts	10,000	4,000	4,000	2,000
Power	40,000			
Consumable Stores	8,000	3,000	2,500	2,500
Insurance of Machinery	8,000			
Indirect Labour	20,000			
Building Maintenance Expenses	20,000			
Annual Interest on Capital Outlay	50,000	20,000	20,000	10,000
Monthly Charge for Rent and Rates	10,000			
Salary of Foreman (Per month)	20,000			
Salary of Attendant (per month)	5,000			

Note: The Foreman and the Attendant control all the three machines and spend equal time on them.
The following additional information is also available:

Particulars	Machine A	Machine B	Machine C
Estimated Direct Labour Hours	1,00,000	1,50,000	1,50,000
Ratio of K.W. Rating	3	2	3
Floor Space (Sq. Ft.)	40,000	40,000	20,000

There are 12 holidays besides Sundays in the year, of which two were on Saturdays. The Manufacturing Department works 8 hours in a day but Saturdays are half days. All Machines work at 90% capacity throughout the year and 2% is reasonable for breakdown.
Calculate pre-determined Machine Hour Rates for the above Machines, after taking into consideration the following factors:
1. An increase of 15% in the Price of Spare Parts.
2. An increase of 25% in the Consumption of Spare parts for Machine 'B' & 'C' only.
3. 20% general increase in Wage Rates.

Question 38 - Study Material

A machine costing ₹10,000 is expected to run for 10 years At the end of this period its scrap value is likely to be ₹900. Repair during the whole life of the machine are expected to be ₹18,000 and the machine is expected to run 4,380 hours per year on the average. Its electricity consumption is 15 units per hour, the rate per unit being 5 paise. The machine occupies one-fourth of the area of the department and has two points out of a total of ten for lighting. The foreman has to devote about one sixth of his time to the machine. The monthly rent of the department is ₹300 and lighting charges amount to ₹80 per month. The foreman is paid a monthly salary of ₹960. Find out the machine hour rate, assuming insurance is @ 1% p.a and the expenses on oil, etc., are ₹9 per month.

Question 39 - PYQ

A Machine costing ₹10 lacs was purchased on 1-4-2011. The expected life of the machine is 10 year At the end of this period its scrap value is likely to be ₹10,000. The total cost of all the machines including new one was ₹90 lacs.

The other information is given as follows:

(i) Working hours of the machine for the year was 4,200 including 200 non-productive hours.
(ii) Repairs and maintenance for the new machine during the year was ₹5,000.
(iii) Insurance Premium was paid for all the machine ₹9,000.
(iv) New machine consumes 8 units of electricity per hour, the rate per unit being ₹3.75
(v) The new machine occupies area of the department. Rent of the department is 2,400 per month.
(vi) Depreciation is charged on straight line basis

Compute machine hour rate for the new machine.

Question 40 - PYQ

M/s Zaina Private Limited has purchased a machine costing ₹29,14,800 and it is expected to have a salvage value of ₹1,50,000 at the end of its effective life of 15 year Ordinarily the machine is expected to run for 4,500 hours per annum but it is expected to run for 4,500 hours per annum but it is estimated that 300 hours per annum will be lost for normal repair & maintenance. The other details in respect of the machine are as follows:

(i) Repair & maintenance during the whole life of the machine are expected to be ₹5,40,000
(ii) Insurance premium (per annum) 2% of the cost of the machine
(iii) Oil and lubricants required for operating the machine (per annum) ₹87,384
(iv) Power consumptions: 10 units per hour @ 7 per unit. No power consumption during repair and maintenance.
(v) Salary to operator per month ₹24,000. The operator devotes one-third of his time to the machine.

You are required to calculate comprehensive machine hour rate.

Question 41 - PYQ

Machine shop Cost Centre contains three machines of equal capacities. Three operators are employed on each machine, Payable ₹20 per hour each. The Factory works for forty-eight hours in a week which includes 4 hours set-up time. The work is jointly done by Operators The Operators are paid fully for the forth-eight hours. In additions they paid a bonus of 10% of productive time. Costs are reported for this Company on the basis of thirteen tour-weekly period.

The company for the purpose of computing machine hour rate includes the Direct Wages of the Operator and also recoups the Factory Overheads allocated to the machines.

The following details of Factory OH applicable to the Cost Centre are available-

- ➔ Depreciation 10% per annum on Original Cost of the Machine. Original Cost of each Machine is ₹52,000
- ➔ Maintenance and Repairs per week per Machine is ₹60.
- ➔ Consumable Stores per week per Machine are ₹75.
- ➔ Power 20 units per hour per Machine at the rate of 80 paise per unit.
- ➔ Apportionment to the Cost Centre: Rent p.a. ₹5,400, Heat and Light p.a. ₹9720, and Foreman's Salary p.a. ₹12,960.

Calculate:

(a) Cost of running one machine for a four-week period, and
(b) Machine Hour Rate.

Question 42 - PYQ

A machine shop has 8 identical machines manned by 6 operators. The machine cannot work without an operator wholly engaged on it. The original cost of all the 8 machines works out to Rs 32,00,000. The following particulars are furnished for a six months period:

Normal available hours per month per operator	208
Absenteeism (without pay) hours per operator	18
Leave (with pay) hours per operator	20
Normal unavoidable idle time-hours per operator	10
Average rate of wages per day of 8 hours per operator	Rs 100
Production bonus estimated	10% on wages
Power consumed	Rs 40,250
Supervision and Indirect Labour	Rs 16,500
Lighting and Electricity	Rs 6,000

The following particulars are given for a year:

Insurance	Rs 3,60,000
Sundry work Expenses	Rs 50,000
Management Expenses allocated	Rs 5,00,000
Depreciation	10% on the original cost

Repairs and Maintenance (including consumables): 5% of the value of all the machines.

Prepare a statement showing the comprehensive machine hour rate for the machine shop.

Question 43 - Rtp

A manufacturing unit has purchased and installed a new machine at a cost of Rs 24,90,000 to its fleet of 5 existing machines. The new machine has an estimated life of 12 years and is expected to realise Rs 90,000 as scrap value at the end of its working life. Other relevant data are as follows:

(i) Budgeted working hours are 2,496 based on 8 hours per day for 312 days. Plant maintenance work is carried out on weekends when production is totally halted. The estimated maintenance hours are 416. During the production hours machine set -up and change over works are carried out. During the set-up hours no production is done. A total 312 hours are required for machine set-ups and changeovers.

(ii) An estimated cost of maintenance of the machine is Rs 2,40,000 p.a.

(iii)The machine requires a component to be replaced every week at a cost of Rs 2,400.

(iv)There are three operators to control the operations of all the 6 machines. Each operator is paid Rs 30,000 per month plus 20% fringe benefits.

(v) Electricity: During the production hours including set-up hours, the machine consumes 60 units per hour. During the maintenance the machine consumes only 10 units per hour. Rate of electricity per unit of consumption is Rs 6.

(vi) Departmental and general works overhead allocated to the operation during last year Rs 5,00,000. During the current year it is estimated to increase by 10%.

Required: COMPUTE the machine hour rate.

Question 44 - Rtp

You are given the following information of the three machines of a manufacturing department of X Ltd.:

	Preliminary estimates of expenses (per annum)			
		Machines		
	Total (Rs)	A (Rs)	B (Rs)	C (Rs)
Depreciation	2,00,000	75,000	75,000	50,000
Spare parts	1,00,000	40,000	40,000	20,000
Power	4,00,000			
Consumable stores	80,000	30,000	25,000	25,000
Insurance of machinery	80,000			
Indirect labour	2,00,000			
Building maintenance expenses	2,00,000			
Annual interest on capital outlay	1,00,000	40,000	40,000	20,000

Monthly charge for rent and rates	20,000
Salary of foreman (per month)	42,000
Salary of Attendant (per month)	12,000

(The foreman and the attendant control all the three machines and spend equal time on them.)
The following additional information is also available:

	Machines		
	A	B	C
Estimated Direct Labour Hours	1,00,000	1,50,000	1,50,000
Ratio of K.W. Rating	3	2	3
Floor space (sq. ft.)	40,000	40,000	20,000

There are 12 holidays besides Sundays in the year, of which two were on Saturdays. The manufacturing department works 8 hours in a day but Saturdays are half days. All machines work at 90% capacity throughout the year and 2% is reasonable for breakdown.

You are required to :
CALCULATE predetermined machine hour rates for the above machines after taking into consideration the following factors:
• An increase of 15% in the price of spare parts.
• An increase of 25% in the consumption of spare parts for machine 'B' & 'C' only.
• 20% general increase in wages rates.

Question 45 - Mtp

The following particulars refer to process used in the treatment of material subsequently, incorporated in a component forming part of an electrical appliance:
(i) The original cost of the machine used (Purchased in June 2013) was ₹ 1,00,000. Its estimated life is 10 years, the estimated scrap value at the end of its life is ₹ 10,000, and the estimated working time per year (50 weeks of 44 hours) is 2,200 hours of which machine maintenance etc., is estimated to take up 200 hours. No other loss of working time expected, setting up time, estimated at 100 hours, is regarded as productive time. (Holiday to be ignored).
(ii) Electricity used by the machine during production is 16 units per hour at cost of a 90 paisa per unit. No current is taken during maintenance or setting up.
(iii) The machine required a chemical solution which is replaced at the end of week at a cost of ₹ 200 each time.
(iv) The estimated cost of maintenance per year is ₹ 12,000.
(v) Two attendants control the operation of machine together with five other identical machines. Their combined weekly wages, insurance and the employer's contribution to holiday pay amount Rs1,200.
(vi) Departmental and general works overhead allocated to this machine for the current year amount to ₹ 20,000.
You are required to CALCULATE the machine hour rate of operating the machine.

Question 46 - PYQ

From the details furnished below you are required to compute a comprehensive Machine-Hour Rate:

Original Purchase Price of the machine (subject to depreciation at 10% p.a. on Original Cost)	₹3,24,000
Normal working hours for the month (The machine works to only 75% of capacity)	200 hours
Wages of Machine man	₹125 per day (of 8 hours)
Wages for a Helper (Machine Attendant)	₹75 per day (of 8 hours)
Power Cost for the month for the time worked	₹15,000
Supervision Charges apportioned for the machine centre for the month	₹3,000
Electricity & Lighting for the month	₹7,500

Repairs & Maintenance (Machine) including Consumable Stores per month	₹17,500
Insurance of Plant & Building (apportioned) for the year	₹16,250
Other General Expenses per annum	₹27,500

The workers are paid a fixed Dearness Allowance (DA) of ₹1575 per month. Production Bonus payable to workers in terms of an award is equal to 33.33% of Basic Wages and DA. Add 10% of the Basic Wages and DA against Leave Wages and Holidays with pay to arrive at a comprehensive labour-wage for debit to production.

Question 47 - PYQ

In a factory, a machine is considered to work for 208 hours in a month. It includes maintenance time of 8 hours and set up time of 20 hours.
The expense data relating to the machine are as under:
Cost of the machine is ₹5,00,000, Life 10 yea₹Estimated scrap value at the end of life is ₹20,000.

Particulars	₹
Repairs and maintenance per annum	60,480
Consumable stores per annum	47520
Rent of building per annum	
(The machine under reference occupies 1/6 of the area)	72,000
Supervisor's salary per month (Common to three machines)	6,000
Wages of operator per month per machine	2,500
General lighting charges per month allocated to the machine	1,000
Power 25 units per hour at ₹2 per unit	

Power is required for productive purposes only. Set up time, though productive, does not require power. The supervisor and Operator are permanent. Repairs and maintenance and consumable stores vary with the running of the machine.
Required:
Calculate a two-tier machine hour rate for (a) set up time, and (b) running time.

Question 48 - PYQ

Job No. 198 was commenced on October 10, 2018 and completed on November 1, 2018. Materials used were ₹600 and labour charged directly to the job was ₹400. Other information is as follows:
Machine No. 215 used for 40 hours, the machine hour rate being ₹3.50.
Machine No. 160 used for 30 hours, the machine hour rate being ₹4.00. 6 welders worked on the job for five days of 8 hours each: the direct labour hour per welder is 20P.
Expenses not included for calculating the machine hour or direct labour hour rate totaled ₹2000, total direct wages for the period being ₹20,000. Ascertain the works costs of job No. 198.

Question 49 - PYQ

A manufacturing unit has purchased and installed a new machine of ₹12,70,000 to its fleet of 7 existing machines. The new machine has an estimated life of 12 years end is expected to realize ₹70,000 as scrap at the end of its working life. Other relevant data are as follows:
(i) Budgeted working hours are 2,592 based on 8 hours per day for 324 days. This includes 300 hours for plant maintenance and 92 hours for setting up of plant.
(ii) Estimated cost of maintenance of the machine is ₹25,000 (per annum).
(iii)The machine requires a special chemical solution, which is replaced at the end of each week (6 days in a week) at a cost of ₹400 each time.
(iv)Four operators control operation of 8 machines and the average wages per person amounts to ₹420 per week plus 15% fringe benefits.
(v) Electricity used by the machine during the production is 16 units per hour at a cost of ₹3 per unit. No current is taken during maintenance and setting up.
(vi)Departmental and general works overhead allocation to the operation during last year was ₹50,000. During the current year it is estimated to increase 10% of this amount.
Calculate machine hour rate, if:
(a) Setting up time is unproductive;
(b) Setting up time is productive.

Question 50 - PYQ

Calculate Machine Hour Rate from the following particulars:

Cost of Machine	- ₹25,00,000
Salvage Value	- ₹1,25,000
Estimated life of the machine	- 25,000 Hours
Working Hours (per annum)	- 3,000 Hours
Hours required for maintenance	- 400 Hours
Setting-up time required	- 8% of actual working hours

Additional Information:

(i) Power 25 units @ ₹5 per unit per hour.
(ii) Cost of repairs and maintenance ₹26,000 per annum.
(iii) Chemicals required for operating the machine ₹2,600 per month.
(iv) Overheads chargeable to the machine ₹18,000 per month.
(v) Insurance Premium (per annum) 2% of the cost of machine
(vi) No. of operators - 02 (looking after three other machines also)
Salary per operator per month ₹18,500

Question 51 - Study Material

Gemini Enterprises undertakes three different jobs A, B and C. All of them require the use of a special machine and also the use of a computer. The computer is hired and the hire charges work out to ₹4,20,000 per annum. The expenses regarding the machine are estimated as follows:

Particulars	**₹**
Rent for the quarter	17,500
Depreciation per annum	2,00,000
Indirect charges per annum	1,50,000

During the first month of operation the following details were taken from the job register:

Job	A	B	C
Number of hours the machine was used:			
· Without the use of the computer	600	900	-
· With the use of the computer	400	600	1,000

You are required to compute the machine hour rate:
(a) For the firm as a whole for the month when the computer was used and when the computer was not used.
(b) For the individual jobs A, B and C.

Question 52 - PYQ

USP Ltd. is the manufacturer of 'double grip motorcycle tyres'. In the manufacturing process, it undertakes three different jobs namely, Vulcanising, Brushing and Striping. All of these jobs require the use of a special machine and also the aid of a robot when necessary. The robot is hired from outside and the hire charges paid for every six months is ₹. 2,70,000. An estimate of overhead expenses relating to the special machine is given below:

- Rent for a quarter is ₹. 18,000.
- The cost of the special machine is ₹. 19,20,000 and depreciation is charged @10% per annum on straight line basis.
- Other indirect expenses are recovered at 20% of direct wages.

The factory manager has informed that in the coming year, the total direct wages will be ₹. 12,00,000 which will be incurred evenly throughout the year.
During the first month of operation, the following details are available from the job book:
Number of hours the special machine was used

Jobs	**Without the aid of the robot**	**With the of the robot**
Vulcanising	**500**	**400**
Brushing	**1000**	**400**
Striping	**-**	**1200**

You are required to :
Compute the Machine Hour Rate for the company as a whole for a month
(A) when the robot is used and

(B) when the robot is not used.
Compute the Machine Hour Rate for the individual jobs i.e. Vulcanising, Brushing and Striping.

Question 53 - Rtp

ABC Ltd. has three production departments P1, P2 and P3 and two service departments S1 and S2. The following data are extracted from the records of the company for the month of January, 2020:

	(₹)
Rent and rates	6,25,000
General lighting	7,50,000
Indirect wages	1,87,500
Power	25,00,000
Depreciation on machinery	5,00,000
Insurance of machinery	2,00,000

Other Information:

	P1	P2	P3	S1	S2
Direct wages (Rs)	3,75,000	2,50,000	3,75,000	1,87,500	62,500
Horse Power of Machines used	60	30	50	10	-
Cost of machinery (Rs)	30,00,000	40,00,000	50,00,000	2,50,000	2,50,000
Floor space (Sq. ft)	2,000	2,500	3,000	2,000	500
Number of light points	10	15	20	10	5
Production hours worked	6,225	4,050	4,100	-	-

Expenses of the service departments S1 and S2 are reapportioned as below:

	P1	P2	P3	S1	S2
S1	20%	30%	40%		10%
S2	40%	20%	30%	10%	

Required:
(i) COMPUTE overhead absorption rate per production hour for each production department.
(ii) DETERMINE the total cost of product X which is processed for manufacture in department P1, P2 and P3 for 5 hours, 3 hours and 4 hours respectively, given that its direct material cost is ₹ 6,250 and direct labour cost is ₹ 3,750.

Question 54 - Mtp

The following account balances and distribution of indirect charges are taken from the accounts of a manufacturing concern for the year ending on 31st March 2021:

Item	Total Amount	Production Departments			Service Departments	
	(₹)	X (Rs)	Y (Rs)	Z (Rs)	A (Rs)	B (Rs)
Indirect Material	2,50,000	40,000	60,000	90,000	50,000	10,000
Indirect Labour	5,20,000	90,000	1,00,000	1,40,000	1,20,000	70,000
Supervisor's Salary	1,92,000	-	-	1,92,000	-	-
Fuel & Heat	30,000					
Power	3,60,000					
Rent & Rates	3,00,000					
Insurance	36,000					
Canteen Charges	1,20,000					
Depreciation	5,40,000					

The following departmental data are also available:

	Production Departments			Service Departments	
	X	Y	Z	A	B
Area (Sq. ft.)	4,400	4,000	3,000	2,400	1,200
Capital Value of Assets (₹)	40,00,000	60,00,000	50,00,000	10,00,000	20,00,000
Kilowatt Hours	3,500	4,000	3,000	1,500	-

Radiator Sections	20	40	60	50	30
No. of Employees	60	70	120	30	20

Expenses charged to the service departments are to be distributed to other departments by the following percentages:

	X	Y	Z	A	B
Department A (%)	30	30	20	-	20
Department B (%)	25	40	25	10	-

PREPARE an overhead distribution statement to show the total overheads of production departments after re-apportioning service departments' overhead by using simultaneous equation method. Show all the calculations to the nearest rupee.

Question 55 - PYQ

TEE Ltd. is a manufacturing company having three production departments 'P', 'Q' and 'R' and two service departments 'X' and 'Y' details pertaining to which are as under :

	P	Q	R	X	Y
Direct wages (₹)	5,000	1,500	4,500	2,000	800
Working hours	13,191	7,598	14,995	-	-
Value of machine (₹)	1,00,000	80,000	1,00,000	20,000	50,000
H.P. of machines	100	80	100	20	50
Light points (Nos.)	20	10	15	5	10
Floor space (sq. ft.)	2,000	2,500	3,500	1,000	1,000

The expenses are as follows

	(₹)
Rent and Rates	10,000
General Lighting	600
Indirect Wages	3,450
Power	3,500
Depreciation on Machines	70,000
Sundries (apportionment on the basis of direct wages)	13,800

The expenses of Service Departments are allocated as under :

	P	Q	R	X	Y
X	45%	15%	30%	-	10%
Y	35%	25%	30%	10%	-

Product 'A' is processed for manufacture in Departments P, Q and R for 6, 5 and 2 hours respectively.
Direct Costs of Product A are :
Direct material cost is ₹ 65 per unit and Direct labour cost is ₹ 40 per unit. You are Required to:
(i) Prepare a statement showing distribution of overheads among the production and service departments.
(ii) Calculate recovery rate per hour of each production department after redistributing the service departments costs.
(iii) Find out the Total Cost of a 'Product A'.

Question 56 - Rtp

PLR Ltd. manufacturers a single product and recovers the overheads by adopting a single blanket rate based on machine hours. The budgeted production overheads of the factory for the FY 2019-20 are ₹ 50,40,000 and budgeted machine hours are 6,000.
For a period of first six months of the financial year 2019-20, following information were extracted from the books:
Actual production overheads ₹ 34,08,000
Amount included in the production overheads:

- Paid as per court's order ₹ 4,50,000
- Expenses of previous year booked in current year ₹ 1,00,000
- Paid to workers for strike period under an award ₹ 4,20,000
- Obsolete stores written off ₹ 36,000

Production and sales data of the concern for the first six months are as under:

- Production:
  - Finished goods 1,10,000 Units
  - Works-in-progress (50% complete in every respect) 80,000 Units
- Sales:
  - Finished goods 90,000 Units

The actual machine hours worked during the period were 3,000 hours. It is revealed from the analysis of information that 40% of the over/under-absorption was due to defective production policies and the balance was attributable to increase in costs.

You are required:

(i) To determine the amount of over/ under absorption of production overheads for the period,
(ii) To show the accounting treatment of over/ under-absorption of production overheads, and
(iii) To apportion the over/ under-absorbed overheads over the items.

Question 57 - PYQ

Calculate the machine hour rate from the following:

	Amount ₹
Cost of machine	1,50,000
Cost of installation	10,000
Scrap value after 10 years	16,000
Rates & rent for a quarter for the shop	1,200
General lighting	500 p.m.
Shop supervisor's salary	30,000 per quarter
Insurance premium for a machine	1,200 p.a.
Estimated repair	1,400 p.a.
Power: 2units per hour @750 per 100 units	
Estimated working hours p.a. 2000 hours.	

The machine occupies 1/3rd of the total area of the shop . the supervisor is expected to devote 1/6th of his time for supervising the machine . General lighting expenses are to be apportioned on the basis of floor area .

Question 58 - PYQ

PQR Ltd. has provided the following information for Departments A and B of its factory :

Preliminary Estimates of expenses (Per Annum)			
	Total (₹)	**Dept A (₹)**	**Dept B (₹)**
Power	15,000	-	-
Spare parts	8,000	3,000	5,000
Consumable stores	5,000	2,000	3,000
Depreciation on machinery	30,000	10,000	20,000
Insurance on machinery	3,000	1,000	2,000
Indirect labour	40,000	-	-
Building maintenance	7,000	-	-

The final estimates of expenses are to be prepared on the basis of above figures after taking into consideration the following factors:

(a) An increase of 10 per cent in the price of spare parts.
(b) An increase of 20 per cent in the consumption of spare parts for Department B only.
(c) Increase in the straight line method of depreciation from 10 per cent on the original value of machinery to 12 per cent.
(d) 15 per cent increase in wage rates of Indirect Labour.

The following information is also available:

	Dept. A	**Dept. B**

Estimated Direct Labour hours	80,000	1,20,000
Ratio of K.W. Rating	3	2
Floor space (sq. ft.)	15,000	20,000

There are 12 holidays besides Sundays in the year. The manufacturing department works 8 hours in a day. All machines work at 90% capacity throughout the year. (Assume 365 days in a year).
You are required to work out the Machine Hour rates for Departments A and B.

Question 59 - Rtp

PL Ltd. has three production departments P1, P2 and P3 and two service departments S1 and S2. The following data are extracted from the records of the company for the month of October, 2020:

	(₹)
Rent and Rates	12,50,000
General Lighting	1,50,000
Indirect Wages	3,75,000
Power	5,00,000
Depreciation on machinery	10,00,000
Insurance of Machinery	4,00,000

Other Information:

	P1	P2	P3	S1	S2
Direct wages (₹)	7,50,000	5,00,000	7,50,000	3,75,000	1,25,000
Horse Power of Machines used	60	30	50	10	-
Cost of machinery (₹)	60,00,000	80,00,000	1,00,00,000	5,00,000	5,00,000
Floor space (Sq. ft)	2,000	2,500	3,000	2,000	500
Number of light points	10	15	20	10	5
Production hours worked	6,225	4,050	4,100	-	-

Expenses of the service departments S1 and S2 are reapportioned as below:

	P1	P2	P3	S1	S2
S1	20%	30%	40%	-	10%
S2	40%	20%	30%	10%	-

Required:
(i) COMPUTE overhead absorption rate per production hour of each production department.
(ii) DETERMINE the total cost of product X which is processed for manufacture in department P1, P2 and P3 for 5 hours, 3 hours and 4 hours respectively, given that its direct material cost is ₹ 12,500 and direct labour cost is ₹ 7,500.

Question 60 - PYQ

A manufacturing company having strength of 50 workers planned for 300 working days of 8 hours each. Based on earlier year's trend , it is estimated that average absenteeism per worker would be 10 days in addition to eligibility of 20 days annual leave . The budgeted overheads amounted to ₹ 15,12,000. During the year , factory worker for 2 extra days to meet the production targets . The actual average absenteeism per worker was 8 days . Out of 50 workers , 20 took the annual leave of 20 days and the remaining took 15 days leave . 450 hours were lost due to machine breakdown . Overtime worked on production during the year amounted to 650 hours . Actual overheads amounted to ₹ 15,92,600.
You are required to :
(i) Calculate overhead absorption rate based on direct labour hours.
(ii) Determine the under or over absorption of overheads during the year.

Question 61 - Rtp

Pretz Ltd. is a manufacturing company having two production departments, 'A' & 'B' and two service departments 'X' & 'Y'. The following is the budget for March, 2022:

	Total (₹)	A (₹)	B (₹)	X (₹)	Y (₹)

Direct material		2,00,000	4,00,000	4,00,000	2,00,000
Direct wages		10,00,000	4,00,000	2,00,000	4,00,000
Factory rent	9,00,000				
Power (Machine)	5,10,000				
Depreciation	2,00,000				
General Lighting	3,00,000				
Perquisites	4,00,000				
Additional information:					
Area (Sq. ft.)		500	250	250	500
Capital value of assets (₹ lakhs)		40	80	20	20
Light Points		10	20	10	10
Machine hours		1,000	2,000	1,000	1,000
Horse power of machines		50	40	15	25

A technical assessment of the apportionment of expenses of service departments is as under:

	A	B	X	Y
Service Dept. 'X' (%)	55	25	–	20
Service Dept. 'Y' (%)	60	35	5	–

You are required to:
(a) PREPARE a statement showing distribution of overheads to various departments.
(b) PREPARE a statement showing re-distribution of service departments expenses to production departments using-
(i) Simultaneous equation method
(ii) Trial and error method
(iii) Repeated Distribution Method.

Question 62 - PYQ

XYZ Ltd. manufactures a single product. It recovers factory overheads at a pre-determined rate of ₹ 20 per man-day.
During the year 2020-21, the total factory overheads incurred and the man-days actually worked were ₹ 35.50 lakhs and 1.50 lakh days respectively. Out of the amount of ₹ 35.50 lakhs, ₹ 2.00 lakhs were in respect of wages for strike period and ₹ 1.00 lakh was in respect of expenses of previous year booked in the current year. During the period, 50,000 units were sold. At the end of the period, 12,000 completed units were held in stock but there was no opening stock of finished goods. Similarly there was no stock of uncompleted units at the beginning of the period but at the end of the period there were 20,000 uncompleted units which May be treated as 65% complete in all respects.
On investigation it was found that 40% of the unabsorbed overheads were due to factory inefficiency and the rest were attributable to increase in the cost of indirect materials and indirect labour. You are required to:
(i) Calculate the amount of unabsorbed overheads during the year 2020-21.
(ii) Show the accounting treatment of unabsorbed overheads in cost accounts and pass journal entry.

Question 63 - Mtp

A machine costing Rs 10 lakhs was purchased on 01-04-2021. The expected life of the machine is 10 years. At the end of this period its scrap value is likely to be ₹. 10,000. The total cost of all the machines including new ones was ₹ 90 lakhs. The other information is given as follows:
(i) Working hours of the machine for the year was 4,200 including 200 non-productive hours.
(ii) Repairs and maintenance for the new machine during the year was ₹ 6,000
(iii) Insurance Premium was paid for all machines ₹ 9,000.
(iv) New machines consumes 8 units of electricity per hour, the rate per unit belong ₹. 3.75
(v) The new machine occupies $1/10^{th}$ area of the department. Rent of the department is ₹ 2,400 per month.
(vi) Depreciation is charged on straight line basis.
Compute machine hour rate for the new machine.

Question 64 - MTP

A work-shop has 8 identical machines operated by 6 operators. The machine cannot work without an operator wholly engaged on it. The original cost of all the 8 machines works out to ₹ 64,00,000. The following particulars are furnished for a six months' period:

Normal available hours per operator	1,248
Absenteeism (without pay) hours per operator	18
Leave (with pay) hours per operator	20
Normal unavoidable idle time-hours per operator	10
Production bonus estimated	10% on wages
Power consumed	₹ 80,500
Supervision and Indirect Labour	₹ 33,000
Lighting and Electricity	₹ 12,000
Average rate of wages per day of 8 hours per operator	₹ 200
The following particulars are given for a year:	
Insurance	₹ 7,20,000
Sundry work Expenses	₹ 1,00,000
Management Expenses allocated	₹ 10,00,000
Depreciation	10% on the original cost

Repairs and Maintenance (including consumables): 5% of the value of all the machines.
Prepare a statement showing the comprehensive machine hour rate for the machine shop.

Question 65 - MTP

Madhu Ltd has calculated a predetermined overhead rate of ₹22 per machine hour for its Quality Check (QC) department. This rate has been calculated for the budgeted level of activity and is considered as appropriate for absorbing overheads. The following overhead expenditures at various activity levels had been estimated.

Total overheads	Number of machine hours
₹3,38,875	14,500
₹3,47,625	15,500
₹3,56,375	16,500

You are required to:
COMPUTE the variable overhead absorption rate per machine hour.
COMPUTE the estimated total fixed overheads.
CALCULATE the budgeted level of activity in machine hours.
CALCULATE the amount of under/over absorption of overheads if the actual machine hours were 14,970 and actual overheads were ₹3,22,000.

Question 66 - Rtp

SE Limited manufactures two products- A and B. The company had budgeted factory overheads amounting to ₹. 36,72,000 and budgeted direct labour hour of 1,80,000 hours. The company uses pre-determined overhead recovery rate for product costing purposes.
The department-wise break-up of the overheads and direct labour hours were as follows:

Particulars	Budgeted overheads	Budgeted direct labour hours	Rate per direct labour hour
Department Pie	₹. 25,92,000	90,000 hours	₹. 28.80
Department Qui	₹. 10,80,000	90,000 hours	₹. 12.00
Total	₹. 36,72,000	1,80,000 hours	

Additional Information:
Each unit of product A requires 4 hours in department Pie and 1 hour in department Qui. Also, each unit of product B requires 1 hour in department Pie and 4 hours in department Qui.
This was the first year of the company's operation. There was no WIP at the end of the year. However, 1,800 and 5,400 units of Products A and B were on hand at the end of the year.
The budgeted activity has been attained by the company.
You are required to:

I. DETERMINE the production and sales quantities of both products 'A' and 'B' for the above year.
II. ASCERTAIN the effect of using a pre-determined overhead rate instead of department-wise overhead rates on the company's income due to its effect on stock value.
CALCULATE the difference in the selling price due to the use of pre-determined overhead rate instead of using department-wise overhead rates. Assume that the direct costs (material and labour costs) per unit of products A and B were ₹. 25 and ₹. 40 respectively and the selling price is fixed by adding 40% over and above these costs to cover profit and selling and administration overhead.

Activity Based Costing

Question 1 - Study Material

ABC Ltd. is a multiproduct company, manufacturing three products A, B and C. The budgeted costs and production for the year ending 31st March, 20X8 are as follows:

Particulars	A	B	C
Production quantity (units)	4,000	3,000	1,600
Resources per unit			
- Direct material (kg.)	4	6	3
- Direct labour (minutes)	30	45	60

The budgeted direct labour rate was ₹ 10 per hour, and the budgeted material cost was ₹ 2 per kg. Production overheads were budgeted at ₹ 99,450 and were absorbed to products using the direct labour hour rate. ABC Ltd. followed an Absorption Costing System. ABC Ltd. is now considering to adopt an Activity Based Costing system. The following additional information is made available for this purpose.

1. Budgeted overheads were analyzed into the following: in (₹)
   Material handling - 29,100
   Storage costs - 31,200
   Electricity - 39,150
2. The cost Driver identified were as follows:
   Material handling - Weight of material handled
   Storage costs - Number of batches of material
   Electricity - Number of Machine operations
3. Data on Cost Driver was as follows:

Particulars	A	B	C
For completion production:			
Batches of material	10	5	15
Per unit of production:			
Number of machine operators	6	3	2

You are requested to:

1) PREPARE a statement for management showing the unit costs and total costs of each product using the absorption costing method.

2) PREPARE a statement for management showing the product costs of each product using the ABC approach.

3) STATE what are the reasons for the different product costs under the two approaches?

Question 2 - Study Material

MST Limited has collected the following data for its two activities. It calculates activity cost rates based on cost driver capacity.

Activity	Cost Driver	Capacity	Cost
Power	Kilowatt hour	5,000 kilowatt hour	₹ 2,00,000
Quality inspections	Number of inspections	10,000 inspections	₹ 3,00,000

The company makes three products M, S and T. For the year ended March 31, 20X9, the following consumption of cost Driver was reported:

Product	Kilowatt hour	Quality inspections
M	10,000	3,500
S	20,000	2,500
T	15,000	3,000

Required:

(i) COMPUTE the costs allocated to each product from each activity.

(ii) CALCULATE the cost of unused capacity for each activity.

(iii) DISCUSS the factors the management Consider in choosing a capacity level to compute the budgeted fixed overhead cost rate.

Question 3 - Study Material

ABC Ltd. Manufactures two types of machinery equipment Y and Z and applies/absorbs overheads on the basis of direct-labour hour. The budgeted overheads and direct-labour hour for the month of December, 20X8 are ₹ 12,42,500 and 20,000 hour respectively. The information about Company's products is as follows:

Particulars	Equipment Y	Equipment Z
Budgeted Production volume	2,500 units	3,125 units
Direct material cost	₹ 300 per unit	₹ 450 per unit
Direct labour cost		
Y : 3 hour @ ₹ 150 per hour		
X : 4 hour @ ₹ 150 per hour	₹ 450	₹ 600

ABC Ltd.'s overheads of ₹ 12,42,500 can be identified with three major activities: Order Processing (₹ 2,10,000), machine processing (₹ 8,75,000), and product inspection (₹ 1,57,500). These activities are driven by number of order processed, machine hour worked, and inspection hour, respectively. The data relevant to these activities is as follows:

Particulars	Order processed	Machine hour worked	Inspection hour
X	350	23,000	4,000
Y	250	27,000	11,000
Total	600	50,000	15,000

Required:

(i) Assuming use of direct-labour hour to absorb/apply overheads to production, COMPUTE the unit manufacturing cost of the equipment Y and Z, if the budgeted manufacturing volume is attained.

(ii) Assuming use of activity-based costing, COMPUTE the unit manufacturing costs of the equipment Y and Z, if the budgeted manufacturing volume is achieved.

(iii) ABC Ltd.'s selling prices are based heavily on cost. By using direct-labour hour as an application base, CALCULATE the amount of cost distortion (under-costed or over-costed) for each equipment.

Question 4 - Study Material

T Limited specializes in the distribution of pharmaceutical products. It buys from the pharmaceutical companies and resells to each of the three different markets.

(i) General Supermarket Chains

(ii) Drugstore Chains

(iii) Chemist Shops

The following data for the month of April, 20X9 in respect of RST Limited has been reported:

Particulars	General Supermarket Chains (₹)	Drugstore Chains (₹)	Chemist Shops (₹)
Average revenue per delivery	84,975	28,875	5,445
Average cost of goods sold per delivery	82,500	27,500	4,950
Number of deliveries	330	825	2,750

In the past, RST Limited has used gross margin percentage to evaluate the relative profitability of its distribution channels. The company plans to use activity –based costing for analyzing the profitability of its distribution channels. The Activity analysis of RST Limited is as under:

Activity Area	Cost Driver
Customer purchase order processing	Purchase order by customers
Line-item ordering	Line-items per purchase order
Store delivery	Store deliveries
Cartons dispatched to stores	Cartons dispatched to a store per delivery
Shelf-stocking at customer store	hour of shelf-stocking

The April, 20X9 operating costs (other than cost of goods sold) of RST Limited are ₹ 8,27,970. These operating costs are assigned to five activity areas. The cost in each area and the quantity of the cost allocation basis used in that area for April, 20X9 are as follows:

Activity Area	Total costs in April, 20X9 (₹)	Total Units of Cost Allocation Base used in April, 20X9

Customer purchase order processing	2,20,000	5,500 order
Line-item ordering	1,75,560	58,520 line items
Store delivery	1,95,250	3,905 store deliveries
Cartons dispatched to store	2,09,000	2,09,000 cartons
Shelf-stocking at customer store	28,160	1,760 hour

Other data for April, 20X9 include the following:

Particulars	**General Supermarket Chains**	**Drugstore Chains**	**Chemist Shops**
Total number of order	385	990	4,125
Average number of line items per order	14	12	10
Total number of store deliveries	330	825	2,750
Average number of cartons shipped per store delivery	300	80	16
Average number of hour of shelf-stocking per store delivery	3	0.6	0.1

Required:
(i) COMPUTE for April, 20X9 gross-margin percentage for each of its three distribution channels and compute T Limited's operating income.
(ii) COMPUTE the April, 20X9 rate per unit of the cost-allocation base for each of the five activity areas.
(iii) COMPUTE the operating income of each distribution channel in April, 20X9 using the activity-based costing information. Comment on the results. What new insights are available with the activity-based cost information?
(iv) DESCRIBE four challenges one would face in assigning the total April, 20X9 operating costs of ₹ 8,27,970 to five activity areas.

Question 5 - Study Material

Alpha Limited has decided to analyze the profitability of its five new customers. It buys bottled water at ₹ 90 per case and sells to retail customers at a list price of ₹ 108 per case. The data pertaining to five customers are:

Particulars	**customers**				
	A	**B**	**C**	**D**	**E**
Cases sold	4,680	19,688	1,36,800	71,550	8,775
List Selling Price	₹ 108	₹ 108	₹ 108	₹ 108	₹ 108
Actual Selling Price	₹ 108	₹ 106.20	₹ 99	₹ 104.40	₹ 97.20
Number of Purchase order	15	25	30	25	30
Number of Customer visits	2	3	6	2	3
Number of deliveries	10	30	60	40	20
Kilometers travelled per delivery	20	6	5	10	30
Number of expedited deliveries	0	0	0	0	1

Its five activities and their cost Driver are:

Activity	**Cost Driver rate**
Order taking	₹ 750 per purchase order
Customer visits	₹ 600 per customer visit

Deliveries	₹ 5.75 per delivery Km travelled
Product handling	₹ 3.75 per case sold
Expedited deliveries	₹ 2,250 per expedited delivery

Required:
(i) COMPUTE the customer-level operating income of each of five retail customers now being examined (A, B, C, D and E). Comment on the results.
(ii) STATE what insights are gained by reporting both the list selling price and the actual selling price for each customer?

Question 6 - Pyq

PQR Pens Ltd. manufactures two products - 'Gel Pen' and 'Ball Pen'. It furnishes the following data for the year 2017:

Product	Annual Output (units)	Total machine hour	Total number of purchase order	Total number of set ups
Gel Pen	5,500	24,000	240	30
Ball Pen	24,000	54,000	448	56

The annual overheads are as under:

Particulars	₹
Volume related activity costs	4,75,020
Set up related costs	5,79,988
Purchase related costs	5,04,992

Calculate the overhead cost per unit of each product - Gel Pen and Ball Pen on the basis of:
(i) Traditional method of charging overheads
(ii) Activity based costing method and
(iii) Find out difference in cost per unit between both the methods.

Question 7 - Pyq

M/s. HMB Limited is producing a product in 10 batches each of 15,000 units in a year and incurring following overheads there on (amount in ₹) :
Material procurement - 22,50,000
Maintenance - 17,30,000
Set - up - 6,84,500
Quality control - 5,14,800
The prime costs for the year amounted to ₹ 3,01,39,000.
The company is using currently the method of absorbing overheads on the basis of prime cost. Now it wants to shift to activity based costing. Information relevant to activity Driver for a year are as under:
Activity driver - Activity volume
No. of purchase order - 1,500
Maintenance hour - 9,080
No. of set ups - 2,250
No. of inspections - 2,710
The company has produced a batch of 15,000 units and has incurred ₹ 26,38,700 and ₹ 3,75,200 on material and wages respectively. The usage of activities of the said batch are as follows:
Material order - 48 order
Maintenance hour - 810 hour
No. of set ups - 40
No. of inspections - 25
You are required to:
(i) Find out cost of product per unit on absorption costing basis for the said batch.
(ii) Determine cost driver rate, total cost and cost per unit of output of the said batch on the basis of activity based costing.

Question 8 - Pyq

MNO Ltd. manufactures two types of equipment A and B and absorbs overheads on the basis of direct labour hour. The budgeted overheads and direct labour hour for the month of March 2019 are ₹ 15,00,000 and 25,000 hour respectively. The information about the company's products is as follows:

Particulars	Equipment	
	A	B
Budgeted production volume	3,200 units	3,850 units
Direct material cost	₹ 350 per unit	₹ 400 per unit
Direct labour cost		
A: 3 hour @ 120 per hour	₹ 360	
B: 4 hour @ 120 per hour		₹ 480

Overheads of ₹ 15,00,000 can be identified with the following three major activities:
Order processing - ₹ 3,00,000
Machine processing - ₹ 10,00,000
Product inspection - ₹ 2,00,000
These activities are driven by the number of order processed, machine hour worked and inspection hour respectively. The data relevant to these activities is as follows:

Particulars	order processed	Machine hour worked	Inspection hour
A	400	22,500	5,000
B	200	27,500	15,000
Total	600	50,000	20,000

Required:
(i) Prepare a statement showing the manufacturing cost per unit of each product using the absorption costing method assuming the budgeted manufacturing volume is attained.
(ii) Determine cost driver rates and prepare a statement showing the manufacturing cost per unit of each product using activity based costing, assuming the budgeted manufacturing volume is attained.
(iii) MNO Ltd's selling prices are based heavily on cost. By using direct labour hour as an application base, calculate the amount of cost distortion (under costed or over costed) for each equipment.

Question 9 - Rtp

G-2020 Ltd. is a manufacturer of a range of goods. The cost structure of its different products is as follows:

Particulars	Product A	Product B	Product C	
Direct materials	50	40	40	₹ / u
Direct labour @ ₹ 10/hour	30	40	50	₹ / u
Production overheads	30	40	50	₹ / u
Total cost	110	120	140	₹ / u
Quantity produced	10,000	20,000	30,000	Units

G-2020 Ltd. was absorbing overheads on the basis of direct labour hour. A newly appointed management accountant has suggested that the company should introduce ABC system and has identified cost Driver and cost pools as follows:

Activity cost pool	Cost driver	Associated cost (₹)
Stores receiving	Purchase requisitions	2,96,000
Inspection	Number of production runs	8,94,000
Dispatch	order executed	2,10,000
Machine set up	Number of set ups	12,00,000

The following information is also supplied:

Particulars	Product A	Product B	Product C
No. of set ups	360	390	450
No. of order executed	180	270	300
No. of production runs	750	1,050	1,200
No. of purchase requisitions	300	450	500

Required:
CALCULATE activity based production cost of all the three products.

Question 10 - Rtp

Family Store wants information about the profitability of individual product lines: Soft drinks, Fresh produce and Packaged food. Family store provides the following data for the year 20X7-X8 for each product line:

Particulars	Soft drinks	Fresh produce	Packaged food
Revenue	₹ 39,67,500	₹ 1,05,03,000	₹ 60,49,500
Cost of goods sold	₹ 30,00,000	₹ 75,00,000	₹ 45,00,000
Cost of bottles returned	₹ 60,000	₹ 0	₹ 0
Number of purchase order placed	360	840	360
Number of deliveries received	300	2,190	660
hour of shelf stocking time	540	5,400	2,700
Items sold	1,26,000	11,04,000	3,06,000

Family store also provides the following information for the year 20X7-X8:

Activity	Description of activity	Total cost	Cost allocation base
Bottle returns	Returning of empty bottles	₹ 60,000	Direct tracing to soft drink line
Ordering	Placing of order for purchases	₹ 7,80,000	1,560 purchase order
Delivering	Physical delivery and receipt of goods	₹ 12,60,000	3,150 deliveries
Shelf stocking	Stocking of goods on store shelves and ongoing restocking	₹ 8,64,000	8,640 hour of shelf stocking time
Customer support	Assistance provided to customers including check-out	₹ 15,36,000	15,36,000 items sold

Required:
(i) Family store currently allocates support cost (all cost other than cost of goods sold) to product lines on the basis of cost of goods sold of each product line. CALCULATE the operating income and operating income as a % of revenues for each product line.
(ii) If Family Store allocates support costs (all costs other than cost of goods sold) to product lines using and activity based costing system, CALCULATE the operating income and operating income as a % of revenues for each product line.

Question 11 - Rtp

MST Limited has collected the following data for its two activities. It calculates activity cost rates based on cost driver capacity.

Activity	Cost driver	Capacity	Cost (₹)
Power	Kilowatt hour	50,000 kilowatt hour	40,00,000
Quality inspections	No. of inspections	10,000 inspections	60,00,000

The company makes three products M, S and T. For the year ended March 31, 20X9, the following consumption of cost Driver was reported:

Product	Kilowatt hour	Quality inspections
M	10,000	3,500
S	20,000	2,500
T	15,000	3,000

Required:
(i) PREPARE a statement showing cost allocation to each product from each activity.
(ii) CALCULATE the cost of unused capacity for each activity.
(iii) STATE the factors the management Consider in choosing a capacity level to compute the budgeted fixed overhead cost rate.

Question 12 - Rtp

SMP Pvt. Ltd. manufactures three products using three different machines. At present the overheads are charged to products using labour hour. The following statement for the month of September 2019, using the absorption costing method has been prepared:

Particulars	Product X (using machine A)	Product Y (using machine B)	Product Z (using machine C)
Production units	45,000	52,500	30,000
Material cost per unit (₹)	350	460	410
Wages per unit @ ₹ 80 per hour	240	400	560
Overhead cost per unit (₹)	240	400	560
Total cost per unit (₹)	830	1,260	1,530
Selling price (₹)	1,037.50	1,575	1,912.50

The following additional information is available relating to overhead cost Driver.

Cost driver	Product X	Product Y	Product Z	Total
No. of machine set ups	40	160	400	600
No. of purchase order	400	800	1,200	2,400
No. of customers	1,000	2,200	4,800	8,000

Actual production and budgeted production for the month is same. worker are paid at standard rate. Out of total overhead costs, 30% related to machine set-ups, 30% related to customer order processing and customer complaint management, while the balance proportion related to material ordering.

Required:

(i) COMPUTE overhead cost per unit using activity based costing method.

(ii) DETERMINE the selling price of each product based on activity-based costing with the same profit mark-up on cost.

Question 13 - Pyq

A B C D Co. Ltd. produces and sells four products A, B, C and D. These products are similar and usually produced in production runs of 10 units and sold in a batch of 5 units. The production details of these products are as follows:

Product	A	B	C	D
Production (Units)	100	110	120	150
Cost per unit:				
Direct material (₹)	30	40	35	45
Direct labour (₹)	25	30	30	40
Machine hour (per unit)	5	4	3	4

The production overheads during the period are as follows:

Particulars	(₹)	(₹)
Factory works expenses	22,500	
Stores receiving costs	8,100	
Machine set up costs	12,200	
Cost relating to quality control	4,600	
Material handling and dispatch	9,600	57,000

The cost Driver for these overheads are detailed below:

Cost	Cost Driver
Factory works expenses	Machine hour
Stores receiving costs	Requisitions raised
Machine set up costs	No. of production runs
Cost relating to quality control	No. of production runs
Material handling and dispatch	No. of order executed

The number of requisitions raised on the stores was 25 for each product and number of order executed was 96, each order was in a batch of 05 units.

Required:

(i) Total cost of each product assuming the absorption of overhead on machine hour basis;
(ii) Total cost of each product assuming the absorption of overhead by using activity base costing; and
(iii) Show the differences between (i) and (ii) and comment.

Question 14 - Pyq

ABC Limited manufactures two radio models, the Nova which has been produced for five year and sells for ₹ 900, and the Royal, a new model introduced in early 2004, which sells for ₹ 1,140. Based on the following Income statement for the year 2004-05, a decision has been made to concentrate ABC Limited's marketing resources on the Royal model and to begin to phase out the Nova model.

ABC Limited - Income Statement for the year ending March 31, 2005

Particulars	Royal Model (₹)	Nova Model (₹)	Total (₹)
Sales	45,60,000	1,98,00,000	2,43,60,000
Cost of Goods sold	31,92,000	1,25,40,000	1,57,32,000
Gross margin	13,68,000	72,60,000	86,28,000
Selling & Administrative Expenses	9,78,000	58,30,000	68,08,000
Net Income	3,90,000	14,30,000	18,20,000
Unit Produced and sold	4,000	22,000	
Net Income per unit sold	97.50	65	

The standard unit costs for the Royal and Nova models are as follows:

Particulars	Royal Model (₹)	Nova Model (₹)
Direct materials	584	208
Direct Labour		
Royal (3.5 hrs x ₹ 12)	42	
Nova (1.5 hrs x ₹ 12)		18
Machine usage		
Royal (4 hrs x ₹ 18)	72	
Nova (8 hrs x ₹ 18)		144
Manufacturing overheads (applied on the basis of machine hour at a pre-determined rate of ₹ 25 per hour)	100	200
Standard Cost	798	570

ABC Ltd.'s Controller is advocating the use of activity-based costing and activity-based cost management and has gathered the following information about the company's manufacturing overheads cost for the year ending March 31, 2005.

Activity centre (Cost driver)	Traceable Costs (₹)	Number of Events		
		Royal	Nova	Total
Soldering (Number of solder joints)	9,42,000	3,85,000	11,85,000	15,70,000
Shipments (Number of shipments)	8,60,000	3,800	16,200	20,000
Quality control (Number of Shipments)	12,40,000	21,300	56,200	77,500
Purchase order (Number of order)	9,50,400	1,09,980	80,100	1,90,080
Machine Power (Machine hour)	57,600	16,000	1,76,000	1,92,000
Machine setups (Number of setups)	7,50,000	14,000	16,000	30,000
Total Traceable costs	48,00,000			

Required:

(i) Prepare a Statement showing allocation of manufacturing overheads using the principles of activity-based costing.
(ii) Prepare a Statement showing product cost profitability using activity-based costing.
(iii)Should ABC Ltd. continue to emphasize the Royal model and phase out the Nova model? Discuss.

Solution 14:
Statement Showing Allocation of Manufacturing Overheads Using Principles of Activity Based Costing.

Activity Centre	Traceable cost ₹	Cost allocation basis	Cost allocation basis	
			Royal (₹)	Nova (₹)
Soldering	9,42,000	385 : 1185	2,31,000	7,11,000
Shipments	8,60,000	38 : 162	1,63,400	6,96,600
Quality control	12,40,000	213 : 562	3,40,800	8,99,200
Purchase order	9,50,400	109980 : 80100	5,49,900	4,00,500
Machine lower	57,600	16 : 176	4,800	52,800
Machine set ups	7,50,000	14 : 16	3,50,000	4,00,000
	48,00,000		16,39,900	31,60,100
Units produced and sold			4,000	22,000
Manufacturing Overheads Cost per unit			₹ 409.98	₹ 143.64

(ii) Statement Showing Product Cost and Profitability using Activity Based Costing

Particulars	Royal (per unit cost ₹)	Nova (per unit cost ₹)	Total ₹
Standard cost other than manufacturing OHs cost	698	370	
Manufacturing OHs using activity-based costing	409.98	143.64	
Cost	1,107.98	513.64	
Selling Price/unit	1,140	900	
Gross Margin / unit	32.02	386.36	
Gross Margin	1,28,080	84,99,920	86,28,000
Selling & Adm. Expenses	9,78,000	58,30,000	68,08,000
Net Income	(8,49,920)	26,69,920	18,20,000

(iii) Novo Model should continue to be bread and butter product and Royal model should not be over-emphasized; rather it's pricing is required to be corrected.

Question 15 - Pyq
ABC Bank is examining the profitability of its Premier Account, a combined Savings and Cheque account. Depositors receive a 7% annual interest on their average deposit. ABC Bank earns an interest rate spread of 3% (the difference between the rate at which it lends money and rate it pays to depositors) by lending money for home loan purpose at 10%.
The Premier Account allows depositors unlimited use of services such as deposits, withdrawals, cheque facility, and foreign currency drafts. Depositors with Premier Account balances of ₹ 50,000 or more receive unlimited free use of services. Depositors with minimum balance of less than ₹ 50,000 pay ₹ 1,000-a-month service fee for their Premier Account.
ABC Bank recently conducted an activity-based costing study of its services. The use of these services in 2005-06 by three customers is as follows:

Particulars	**Activity- Based Cost Per Transaction**	**Account usage**		
		Customer X	**Customer Y**	**Customer Z**
Deposits/withdrawal with teller	₹ 125	40	50	5

Deposits/withdrawal with automatic teller machine (ATM)	₹ 40	10	20	16
Deposits/withdrawal on prearranged monthly basis	₹ 25	0	12	60
Bank Cheques written	₹ 400	9	3	2
Foreign Currency drafts	₹ 600	4	1	6
Inquiries about Account balance	₹ 75	10	18	9
Average Premier Account balance for 2005-06		₹ 55,000	₹ 40,000	₹ 12,50,000

Assume Customer X and Z always maintains a balance above ₹ 50,000, whereas Customer Y always has a balance below ₹ 50,000.
Required:
(i) Compute the 2005-06 profitability of the customers X, Y and Z Premier Account at ABC Bank.
(ii) What evidence is there of cross-subsidisation among the three Premier Accounts? Why might ABC Bank worry about this Cross-subsidisation, if the Premier Account product offering is Profitable as a whole?
(iii) What changes would you recommend for ABC Bank's Premier Account?

Question 16 - Pyq

ABC Ltd. Manufactures two types of machinery equipments Y and Z and applies/absorbs overheads on the basis of direct-labour hour. The budgeted overheads and direct-labour hour for the month of December, 2006 are ₹ 12,42,500 and 20,000 hour respectively. The information about Company's products is as follows:

Particulars	**Equipment Y**	**Equipment Z**
Budgeted Production volume	2,500 units	3,125 units
Direct material cost	₹ 300 per unit	₹ 450 per unit
Direct labour cost		
Y : 3 hour @ ₹ 150 per hour		
X : 4 hour @ ₹ 150 per hour	₹ 450	₹ 600

ABC Ltd.'s overheads of ₹ 12,42,500 can be identified with three major activities: Order Processing (₹ 2,10,000), machine processing (₹ 8,75,000), and product inspection (₹ 1,57,500). These activities are driven by number of order processed, machine hour worked, and inspection hour, respectively. The data relevant to these activities is as follows:

Particulars	**order processed**	**Machine hour worked**	**Inspection hour**
Y	350	23,000	4,000
Z	250	27,000	11,000
Total	600	50,000	15,000

Required:
(i) Assuming use of direct-labour hour to absorb/apply overheads to production, compute the unit manufacturing cost of the equipments Y and Z, if the budgeted manufacturing volume is attained.
(ii) Assuming use of activity-based costing, compute the unit manufacturing costs of the equipments Y and Z, if the budgeted manufacturing volume is achieved.
(iii) ABC Ltd.'s selling prices are based heavily on cost. By using direct-labour hour as an application base, calculate the amount of cost distortion (under-costed or over-costed) for each equipment.
(iv) Discuss, how an activity-based costing might benefit ABC Ltd.

Question 17 - Study Material

Humara - Apna' bank offers three products, viz., deposits, Loans and Credit Cards. The bank has selected 4 activities for a detailed budgeting exercise, following activity based costing methods. The bank wants to know the product wise total cost per unit for the selected activities, so that prices may be fixed accordingly.
The following information is made available to formulate the budget:

Activity	Present Cost (₹)	Estimation for the budget period
ATM Services:		
a) Machine Maintenance b) Rents c) Currency Replenishment Cost	4,00,000 2,00,000 1,00,000	All fixed, no change. Fully fixed, no change. Expected to double during budget period.
	7,00,000	(This activity is driven by no. of ATM transactions)
Computer Processing	5,00,000	Half this amount is fixed and no change is expected. The variable portion is expected to increase to three times the current level. (This activity is driven by the number of computer transactions)
Issuing Statements	18,00,000	Presently, 3 lakh statements are made. In the budget period, 5 lakh statements are expected. For every increase of one lakh statement, one lakh rupees is the budgeted increase. (This activity is driven by the number of statements)
Computer Inquiries	2,00,000	Estimated to increase by 80% during the budget period. (This activity is driven by telephone minutes)

The activity Driver and their budgeted quantifies are given below:

Activity Driver	Deposits	Loans	Credit Cards
No. of ATM Transactions	1,50,000	---	50,000
No. of Computer Processing Transactions	15,00,000	2,00,000	3,00,000
No. of Statements to be issued	3,50,000	50,000	1,00,000
Telephone Minutes	3,60,000	1,80,000	1,80,000

The bank budgets a volume of 58,600 deposit accounts, 13,000 loan accounts, and 14,000 Credit Card Accounts.

Required:

(i) CALCULATE the budgeted rate for each activity.

(ii) PREPARE the budgeted cost statement activity wise.

(iii) COMPUTE the budgeted product cost per account for each product using (i) and (ii) above.

Question 18 - Study Material

Woolmark Ltd. manufactures three types of products namely P, Q and R. The data relating to a period are as under:

Particulars	P	Q	R
Machine hour per unit	10	18	14
Direct Labour hour per unit	4	12	8
Direct Material per unit (₹)	90	80	120
Production (units)	3,000	5,000	20,000

Currently the company uses traditional costing method and absorbs all production overheads on the basis of machine hour. The machine hour rate of overheads is ₹ 6 per hour. Direct labour hour rate is ₹ 20 per hour.The company proposes to use activity based costing system and the activity analysis is as under:

Particulars	P	Q	R
Batch size (units)	150	500	1,000
Number of purchase order per batch	3	10	8

Number of inspections per batch	5	4	3

The total production overheads are analysed as under:
Machine set up costs..... 20%
Machine operation costs..... 30%
Inspection costs..... 40%
Material procurement related costs.....10%
Required
(i) CALCULATE the cost per unit of each product using traditional method of absorbing all production overheads on the basis of machine hour.
(ii) CALCULATE the cost per unit of each product using activity based costing principles.

Question 19 - Study Material

Family Store wants information about the profitability of individual product lines: Soft drinks, Fresh produce and Packaged food. Family store provides the following data for the year 2019-20 for each product line:

	Soft drinks	Fresh produce	Packaged food
Revenues	₹ 39,67,500	₹ 1,05,03,000	₹ 60,49,500
Cost of goods sold	₹ 30,00,000	₹ 75,00,000	₹ 45,00,000
Cost of bottles returned	₹ 60,000	₹ 0	₹ 0
Number of purchase order placed	360	840	360
Number of deliveries received	300	2,190	660
hour of shelf-stocking time	540	5,400	2,700
Items Sold	1,26,000	11,04,000	3,06,000

Family store also provides the following information for the year 2019-20:

Activity	Description of activity	Total Cost	Cost-allocation base
Bottles returns	Returning of empty bottles	₹ 60,000	Direct tracing to soft drink line
Ordering	Placing of order for purchases	₹ 7,80,000	1,560 purchase order
Delivery	Physical delivery and receipt of goods	₹ 12,60,000	3,150 deliveries
Shelf stocking	Stocking of goods on store shelves and on - going restocking	₹ 8,64,000	8,640 hour of shelf-stocking time
Customer Support	Assistance provided to customers including check-out	₹ 15,36,000	15,36,000 items sold

Required:
(i) Family store currently allocates support cost (all cost other than cost of goods sold) to product lines on the basis of cost of goods sold of each product line. CALCULATE the operating income and operating income as a % of revenues for each product line.
(ii) If Family Store allocates support costs (all costs other than cost of goods sold) to product lines using and activity-based costing system, CALCULATE the operating income and operating income as a % of revenues for each product line.

Question 20 - Study Material

BABYSOFT is a global brand created by Bio-organic Ltd. The company manufactures three ranges of beauty soaps i.e. BABYSOFT- Gold, BABYSOFT- Pearl, and BABYSOFT- Diamond. The budgeted costs and production for the month of December, 2020 are as follows:

	BABYSOFT- Gold		BABYSOFT- Pearl		BABYSOFT- Diamond	
Production of soaps (Units)	4,000		3,000		2,000	
Resources per Unit:	Qty	Rate	Qty	Rate	Qty	Rate
Essential Oils	60 ml	₹ 200 / 100 ml	55 ml	₹ 300 / 100 ml	65 ml	₹ 300 / 100 ml

Cocoa Butter	20 g	₹ 200 / 100 g	20 g	₹ 200 / 100 g	20 g	₹ 200 / 100 g
Filtered Water	30 ml	₹ 15 / 100 ml	30 ml	₹ 15 /100 ml	30 ml	₹ 50 / 100 ml
Chemicals	10 g	₹ 30 /100 g	12 g	₹ 50 / 100 g	15 g	₹ 60 / 100 g
Direct Labour	30 minutes	₹ 10 / hour	40 minutes	₹ 10 /hour	60 minutes	₹ 10 / hour

Bio-organic Ltd. followed an Absorption Costing System and absorbed its production overheads, to its products using direct labour hour rate, which were budgeted at ₹ 1,98,000.
Now, Bio-organic Ltd. is considering adopting an Activity Based Costing system. For this, additional information regarding budgeted overheads and their cost Driver is provided below:

Particulars	**(₹)**	**Cost Driver**
Forklifting cost	58,000	Weight of material lifted
Supervising cost	60,000	Direct labour hour
Utilities	80,000	Number of Machine operations

The number of machine operators per unit of production are 5, 5, and 6 for BABYSOFT- Gold, BABYSOFT- Pearl, and BABYSOFT- Diamond respectively.
(Consider (i) Mass of 1 litre of Essential Oils and Filtered Water equivalent to 0.8 kg and 1 kg respectively (ii) Mass of output produced is equivalent to the mass of input materials taken together.)
You are requested to:
(i) PREPARE a statement showing the unit costs and total costs of each product using the absorption costing method.
(ii) PREPARE a statement showing the product costs of each product using the ABC approach.
(iii) STATE what are the reasons for the different product costs under the two approaches?

Question 21 - Rtp

The following budgeted information relates to N Ltd. for the year 2021:

	Products	**Products**	**Products**
	X	**Y**	**Z**
Production and Sales (units)	1,00,000	80,000	60,000
	(₹)	(₹)	(₹)
Selling price per unit	90	180	140
Direct cost per unit	50	90	95
	hour	hour	hour
Machine department (machine hour per unit)	3	4	5
Assembly department (direct labour hour per unit)	6	4	3

The estimated overhead expenses for the year 2021 will be as below:
Machine Department ₹ 73,60,000
Assembly Department ₹ 55,00,000
Overhead expenses are apportioned to the products on the following basis:
Machine Department On the basis of machine hour
Assembly Department On the basis of labour hour
After a detailed study of the activities the following cost pools and their respective cost Driver are found:

Cost Pool	**Amount (₹)**	**Cost Driver**	**Quantity**
Machining services	64,40,000	Machine hour	9,20,000 hour
Assembly services	44,00,000	Direct labour hour	11,00,000 hour
Set-up costs	9,00,000	Machine set-ups	9,000 set-ups
Order processing	7,20,000	Customer order	7,200 order
Purchasing	4,00,000	Purchase order	800 order

As per an estimate the activities will be used by the three products:

	Product	Product	Product
	X	Y	Z
Machine set-ups	4,500	3,000	1,500
Customer order	2,200	2,400	2,600
Purchase order	300	350	150

You are required to PREPARE a product-wise profit statement using:
(i) Absorption costing method;
(ii) Activity-based method.

Question 22 - Rtp

KD Ltd. is following Activity based costing. Budgeted overheads, cost Driver and volume are as follows:

Cost pool	Budgeted overheads (₹)	Cost driver	Budgeted volume
Material procurement	18,42,000	No. or order	1,200
Material handling	8,50,000	No. of movement	1,240
Maintenance	24,56,000	Maintenance hour	17,550
Set-up	9,12,000	No. of set-ups	1,450
Quality control	4,42,000	No. of inspection	1,820

The company has produced a batch of 7,600 units, its material cost was ₹ 24,62,000 and wages ₹ 4,68,500.
Usage activities of the said batch are as follows:
Material order 56
Material movements 84
Maintenance hour 1,420 hour
Set-ups 60
No. of inspections 18
Required:
(i) CALCULATE cost driver rates.
(ii) CALCULATE the total and unit cost for the batch.

Question 23 - Rtp

Following are the data of three product lines of a departmental store for the year 2019 -20:

	Soft drinks	Fresh produce	Packaged food
Revenues	₹ 39,67,500	₹ 1,05,03,000	₹ 60,49,500
Cost of goods sold	₹ 30,00,000	₹ 75,00,000	₹ 45,00,000
Cost of bottles returned	₹ 60,000	₹ 0	₹ 0
Number of purchase order placed	360	840	360
Number of deliveries received	300	2,190	660
hour of shelf-stocking time	540	5,400	2,700
Items sold	1,26,000	11,04,000	3,06,000

Additional information related with the store are as follows:

Activity	Description of activity	Total Cost	Cost-allocation base
Bottles returns	Returning of empty bottles	₹ 60,000	Direct tracing to soft drink line
Ordering	Placing of order for purchases	₹ 7,80,000	1,560 purchase order
Delivery	Physical delivery and receipt of goods	₹ 12,60,000	3,150 deliveries
Shelf stocking	Stocking of goods on store shelves and on-going restocking	₹ 8,64,000	8,640 hour of shelf-stocking time

Customer Support	Assistance provided to customers including check-out	₹ 15,36,000	15,36,000 items sold

Required:
CALCULATE the total cost and operating income using Activity Based Costing method.

Question 24 - Mtp

RVP Cinema provides the following data for the year 2020-21:

Particulars	**Premium Hall (₹)**	**Recliner Hall (₹)**	**7D Hall (₹)**	**Cafeteria (₹)**
Revenue	11,55,000	18,75,000	9,30,000	5,25,000
Cost of Goods sold	-	-	-	4,51,125
Digital media cost	6,19,800	9,46,875	4,02,900	-
Number of Credit Card transactions	75,000	90,000	60,000	45,000
Number of Tests	12,000	18,000	15,000	7,500
Number of Setups	225	450	150	75
Area in Square feet	3,000	4,500	2,250	750
Number of Customer contacts	2,62,500	3,00,000	1,50,000	37,500
Number of Customer online order	2,10,000	2,47,500	1,20,000	22,500

Cost analysis has revealed the following:

Activity	**Activity Cost (₹)**	**Activity Driver**	**Activity Capacity**
Marketing Expenses	2,25,000	Number of Customer contacts	7,50,000
Website Maintenance Expenses	1,50,000	Number of Customer online order	6,00,000
Credit Card Processing Fees	1,35,000	No. of Credit Card Transactions	2,70,000
Cleaning Equipment Cost	3,15,000	Number of square feet	10,500
Inspecting and testing costs	2,62,500	Number of tests	52,500
Setting up machine's costs	4,50,000	Number of set-ups	900

Required:
(i) If RVP Cinema allocates all costs (other than Cost of Goods sold and Digital Media costs) to the departments on the basis of Activity Based Costing system, CALCULATE the operating income and percentage of operating income of each department.
(ii) RVP Cinema operated for year under the assumption that profitability can be increased by increasing net revenue from Cafeteria. However, the Supervisor of RVP Cinema wants to shut down Cafeteria. On the basis of (i) above, STATE whether the contention of the Supervisor is valid or not.

Question 25 - Mtp

ABY Ltd. manufactures four products, namely A, B, C and D using the same plant and process. The following information relates to production period December, 2020:

Product	**A**	**B**	**C**	**D**
Output in units	1,440	1,200	960	1,008
Cost per unit:				
Direct Materials	₹ 84	₹ 90	₹ 80	₹ 96
Direct Labour	₹ 20	₹ 18	₹ 14	₹ 16
Machine hour per unit	4	3	2	1

The four products are similar and are usually produced in production runs of 48 units per batch and are sold in batches of 24 units. Currently, the production overheads are absorbed using machine hour rate. The production overheads incurred by the company for the period December, 2020 are as follows:

	(₹)
Machine department costs:	
Rent, deprecation and supervision	2,52,000
Set-up Costs	80,000
Store receiving costs	60,000
Inspection	40,000
Material handling and dispatch	10,368

During the period December, 2020, the following cost Driver are to be used for allocation of overheads cost:

Cost	Cost driver
Set-up Costs	Number of production runs (batches)
Stores receiving	Requisition raised
Inspection	Number of production runs (batches)
Material handling and dispatch	order executed

It is also determined that:

(i) Machine department costs should be apportioned among set-up, stores receiving and inspection activities in proportion of 4 : 3 : 2.

(ii) The number of requisitions raised on stores is 50 for each product. The total number of material handling and dispatch order executed during the period are 192 and each order being for a batch size of 24 units of product.

Required:

(i) CALCULATE the total cost of each product, if all overhead costs are absorbed on machine- hour rate basis.

(ii) CALCULATE the total cost of each product using activity-based costing.

Question 26 - Pyq

ABC Ltd. manufactures three products X, Y and Z using the same plant and resources. It has given the following information for the year ended on 31st March, 2020:

	X	Y	Z
Production Quantity (units) Cost per unit:	1200	1440	1968
Direct Material (₹)	90	84	176
Direct Labour (₹)	18	20	30

Budgeted direct labour rate was ₹ 4 per hour and the production overheads, shown in table below, were absorbed to products using direct labour hour rate. Company followed Absorption Costing Method. However, the company is now considering adopting Activity Based Costing Method.

	Budgeted Overheads (₹)	Cost Driver	Remarks
Material Procurement	50,000	No. of order	No. of order was 25 units for each product.
Set-up	40,000	No. of production Runs	All the three products are produced in production runs of 48 units.
Quality Control	28,240	No. of Inspections	Done for each production run.
Maintenance	1,28,000	Maintenance hour	Total maintenance hour were 6,400 and was allocated in the ratio of 1:1:2 between X, Y & Z.

Required:

1. Calculate the total cost per unit of each product using the Absorption Costing Method.
2. Calculate the total cost per unit of each product using the Activity Based Costing Method.

Question 27 - Pyq

ABC Ltd. is engaged in production of three types of Fruit Juices: Apple, Orange and Mixed Fruit.

The following cost data for the month of March 2020 are as under:

Particulars	Apple	Orange	Mixed Fruit
Units produced and sold	10,000	15,000	20,000

Material per unit (₹)	8	6	5
Direct Labour per unit (₹)	5	4	3
No. of Purchase order	34	32	14
No. of Deliveries	110	64	52
Shelf Stocking hour	110	160	170

Overheads incurred by the company during the month are as under :

	(₹)
Ordering costs	64,000
Delivery costs	1,58,200
Shelf Stocking costs	87,560

Required:
(i) Calculate cost driver's rate.
(ii) Calculate total cost of each product using Activity Based Costing.

Question 28 - Pyq

PQR Ltd has decided to analyse the profitability of its five new customers. It buys soft drink bottles in cases at ₹ 45 per case and sells them to retail customers at a list price of ₹ 54 per case. The data pertaining to five customers are given below:

Particulars	**customers**				
	A	**B**	**C**	**D**	**E**
Number of Cases Sold	9,360	14,200	62,000	38,000	9,800
List Selling Price (₹)	54	54	54	54	54
Actual Selling Price (₹)	54	53.40	49	50.20	48.60
Number of Purchase order	30	50	60	50	60
Number of customers visits	4	6	12	4	6
Number of Deliveries	20	60	120	80	40
Kilometer travelled per delivery	40	12	10	20	60
Number of expedite Deliveries	0	0	0	0	2

Its five activities and their cost Driver are:

Activity	**Cost Driver**
Order taking	₹ 200 per purchase order
Customer visits	₹ 300 per each visit
Deliveries	₹ 4.00 per delivery km travelled
Product Handling	₹ 2.00 per case sold
Expedited deliveries	₹ 100 per such delivery

You are required to :
(i) Compute the customer level operating income of each of five retail customers by using the Cost Driver rates.
(ii)Examine the results to give your comments on Customer 'D' in comparison with Customer 'C' and on Customer 'E' in comparison with Customer 'A'.

Question 29 - Rtp

Family Store wants information about the profitability of individual product lines: Soft drinks, Fresh produce and Packaged food. Family store provides the following data for the year 2020-21 for each product line:

	Soft drinks	**Fresh produce**	**Packaged food**

Revenues	₹ 39,67,500	₹ 1,05,03,000	₹ 60,49,500
Cost of goods sold	₹ 30,00,000	₹ 75,00,000	₹ 45,00,000
Cost of bottles returned	₹ 60,000	₹ 0	₹ 0
Number of purchase order placed	360	840	360
Number of deliveries received	300	2,190	660
hour of shelf-stocking time	540	5,400	2,700
Items sold	1,26,000	11,04,000	3,06,000

Family store also provides the following information for the year 2020-21:

Activity	**Description of activity**	**Total Cost (₹)**	**Cost-allocation base**
Bottles returns	Returning of empty bottles	60,000	Direct tracing to soft drink line
Ordering	Placing of order for purchases	7,80,000	1,560 purchase order
Delivery	Physical delivery and receipt of goods	12,60,000	3,150 deliveries
Shelf stocking	Stocking of goods on store shelves and on-going restocking	8,64,000	8,640 hour of shelf-stocking time
Customer Support	Assistance provided to customers including check-out	15,36,000	15,36,000 items sold

Required:
(i) Family store currently allocates support cost (all cost other than cost of goods sold) to product lines on the basis of cost of goods sold of each product line. CALCULATE the operating income and operating income as a % of revenues for each product line.
(ii) If Family Store allocates support costs (all costs other than cost of goods sold) to product lines using and activity-based costing system, CALCULATE the operating income and operating income as a % of revenues for each product line.

Question 30 - Pyq

PQR Ltd. is engaged in the production of three products P , Q , R. The company calculates Activity Cost Rates on the basis of Cost Driver capacity which is provided as below:

Activity	**Cost Driver**	**Cost Driver Capacity**	**Cost(₹)**
Direct Labour hour	Labour hour	30,000 Labour hour	3,00,000
Production Runs	No. of Production Runs	600 Production Runs	1,80,000
Quality Inspections	No. of Inspection	8000 Inspection	2,40,000

The consumption of activities during the period is as under:

Activity/Products	**P**	**Q**	**R**
Direct Labour hour	10,000	8,000	6,000
Production Runs	200	180	160
Quality Inspections	3,000	2,500	1,500

You are required to:
(i) Compute the costs allocated to each Product from each activity.
(ii) Calculate the cost of unused capacity for each Activity.
(iii) A potential Customer has approached the company for the supply of 12,000 units of a new product 'S' to be delivered in lots of 1500 units per quarter. This will involve an initial design cost of ₹ 30,000 and per quarter production will involve the following :

Direct Material	₹ 18,000
Direct Labour hour	1,500 hour
No. of Production runs	15
No. of Quality Inspection	250

Prepare cost sheet segregating Direct and Indirect Costs and compute the Sale value per quarter of Product 'S' using ABC system considering a markup of 20% on Cost.

Question 31 - Rtp

PCP Limited belongs to the apparel industry. It specializes in the distribution of fashionable garments. It buys from the industry and resells the same to the following two different supermarkets:
(i) Supermarket A dealing in Adults' garments (Age group 15 - 30)
(ii) Supermarket B dealing in Kids' garments (Age group 5 - 10)
The following data for the month of April in respect of PCP Limited has been reported:

	Supermarket A (₹)	Supermarket B (₹)
Average revenue per delivery	1,69,950	57,750
Average cost of goods sold per delivery	1,65,000	55,000
Number of deliveries	660	1,650

In the past, PCP Limited has used gross margin percentage to evaluate the relative profitability of its supermarket segments.
The company plans to use activity –based costing for analyzing the profitability of its supermarket segments. The April month's operating costs (other than cost of goods sold) of PCP Limited are
₹ 16,55,995. These operating costs are assigned to five activity areas. The cost in each area and Activity analysis including cost driver for the month of April are as follows:

Activity Area	Total costs (₹)	Cost Driver
Store delivery	3,90,500	Store deliveries
Cartons dispatched to store	4,15,250	Cartons dispatched to a store per delivery
Shelf-stocking at customer store	64,845	hour of shelf-stocking
Line-item ordering	3,45,400	Line-items per purchase order
Customer purchase order processing	4,40,000	Purchase order by customers

Other data for the month of April include the following:

	Supermarket A	Supermarket B
Total number of store deliveries	1,100	2,805
Average number of cartons shipped per store delivery	250	50
Average number of hour of shelf-stocking per store delivery	6	1.5
Average number of line items per order	14	12
Total number of order	770	1,980

Required:
(i) COMPUTE gross-margin percentage for each of its supermarket segments and compute PCP Limited's operating income.
(ii)COMPUTE the operating income of each supermarket segments using the activity- based costing information.

Question 32 - Pyq

A drug store is presently selling three types of drugs namely 'Drug A' 'Drug B' and 'Drug C'. Due to some constraints, it has decided to go for only one product line of drugs. It has provided the following data for the year 2020-21 for each product line:

	Drug Types		
	A	B	C
Revenues (in ₹)	74,50,000	1,11,75,000	1,86,25,000
Cost of goods sold (in ₹)	41,44,500	68,16,750	1,20,63,750
Number of purchase order placed (in nos)	560	810	630
Number of deliveries received	950	1,000	850
hour of shelf-stocking time	900	1,250	2,350

Units sold (in Nos)	1,75,200	1,50,300	1,44,500

Following additional information is also provided:

Activity	Description of Activity	Total Cost (₹)	Cost-allocation base
Drug license fee	Drug license fee	5,00,000	To be distributed in ratio 2:3:5 between A,B,C
Ordering	Placing of order for purchases	8,30,000	2,000 purchase order
Delivery	Physical delivery and receipts of goods	18,20,000	2,800 deliveries
Shelf stocking	Stocking of goods	32,40,000	4,500 hour of shelf-stocking time
Customer support	Assistance provided to customers	28,20,000	4,70,000 units sold

You are required to:
(i) Calculate the operating income and operating income as a percentage (%) of revenue of each product line if:
(a) All the support costs (other than costs of goods sold) are allocated in the ratio of cost of goods sold.
(b) All the support costs (other than costs of goods sold) are allocated using the activity-based costing system.
(ii) Give your opinion about choosing the product line on the basis of operating income as a percentage (%) of revenue of each product line under both the situations as above.

Question 33 - Mtp

Breezle Ltd. Has decided to analyse the profitability of its five new customers. It buys soft drink bottles in cases at ₹. 54 per case and sells them to retail customers at a list price of ₹. 64.80 per case. The data pertaining to five customers are given below.

Particulars	customers				
	Aey	Bee	Cee	Dee	Eey
Number of cases sold	9,360	14,200	62,000	38,000	9,800
List Selling Price (₹)	64.80	64.80	64.80	64.80	64.80
Actual Selling Price (₹)	64.80	64.08	58.80	60.24	58.32
Number of purchase order	30	50	60	50	60
Number of customer visits	4	6	12	4	6
Number of deliveries	20	60	120	80	40
Kilometres travelled per delivery	40	12	10	20	60
Number of expediate deliveries	0	0	0	0	2

Its five activities and their cost Driver are:

Activity	Cost Driver
Order taking	₹ 240 per purchase order
Customer visits	₹ 360 per each visit
Deliveries	₹ 4.80 per delivery km travelled
Product Handling	₹ 2.40 per case sold
Expedited deliveries	₹ 120 per such delivery

You are required to:
(i) Compute the customer level operating income of each of five retail customers by using the Cost Driver rates.
(ii) Examine the results to give your comments on Customer 'Dee' in comparison with Customer 'Cee' and on Customer 'Eey' in comparison with Customer 'Aey'.

Question 34 - Mtp

The following budgeted information relates to B Ltd. for the year 2021:

	Products		
	X	Y	Z
Production and Sales (units)	1,00,000	80,000	60,000
	(₹)	(₹)	(₹)

Selling price per unit	45	90	70
Direct cost per unit	25	45	50
	hour	hour	hour
Machine department (machine hour per unit)	3	4	5
Assembly department (direct labour hour per unit)	6	4	3

The estimated overhead expenses for the year 2021 will be as below:
Machine Department ₹ 36,80,000
Assembly Department ₹ 27,50,000
Overhead expenses are apportioned to the products on the following basis:
Machine Department On the basis of machine hour
Assembly Department On the basis of labour hour
After a detailed study of the activities the following cost pools and their respective cost Driver are found:

Cost Pool	Amount (₹)	Cost Driver	Quantity
Machining services	32,20,000	Machine hour	9,20,000 hour
Assembly services	22,00,000	Direct labour hour	11,00,000 hour
Set-up costs	4,50,000	Machine set-ups	9,000 set-ups
Order processing	3,60,000	Customer order	7,200 order
Purchasing	2,00,000	Purchase order	800 order

As per an estimate the activities will be used by the three products:

	Products		
	X	Y	Z
Machine set-ups	4,500	3,000	1,500
Customer order	2,200	2,400	2,600
Purchase order	300	350	150

You are required to PREPARE a product-wise profit statement using:
(i) Absorption costing method;
(ii) Activity-based method.

Question 35 - Pyq

Star Limited manufacture three products using the same production methods. A conventional product costing system is being used currently. Details of the three products for a typical period are:

Product	Labour Hrs. per unit	Machine Hrs. per unit	Materials per Unit1	Volume in Units
AX	1.00	2.00	35	7,500
BX	0.90	1.50	25	12,500
CX	1.50	2.50	45	25,000

Direct Labour costs ₹. 20 per hour and production overheads are absorbed on a machine hour basis. The overhead absorption rate for the period is ₹. 30 per machine hour.
Management is considering using Activity Based Costing system to ascertain the cost of the products. Further analysis shows that the total production overheads can be divided as follows:

Particulars	%
Cost relating to set-ups	40
Cost relating to machinery	10
Cost relating to material handling	30
Costs relating to inspection	20
Total production overhead	100

The following activity volumes are associated with the product line for the period as a whole. Total activities for the period:

Product	No. of set-ups	No. of movements of Materials	No. of inspections
AX	350	200	200

BX	450	280	400
CX	740	675	900
Total	1,540	1,155	1,500

Required:
i. Calculate the cost per unit for each product using the conventional method.
ii. Calculate the cost per unit for each product using activity based costing method.

Question 36 - Mtp

SMD Limited manufactures four products namely A, B, C and D using the same production and process facilities. The company has been following conventional method of costing and wishes to shift to activity-based costing system. The data pertaining to four products are:

Product	Units produced	Material per unit (₹)	Labour hour per unit	Machine hour per unit
A	1,500	140	1	3
B	2,500	90	3	2
C	10,000	180	2	6
D	6,000	150	1.5	4

The following activity volumes are associated to the production process for the relevant period -

	Number of Inspections	Number of Material Movements	Number of set-ups
A	200	15	100
B	250	20	125
C	900	100	600
D	650	85	400

The cost data also states that:
· Direct Labour cost: ₹ 60 per hour
· Machine hour rate: ₹ 280 per hour
· Production overheads are absorbed on machine hour basis.
For activity-based costing, a thorough, analysis of the production process revealed that:
Costs relating to set-ups and inspection bears the equal percentage while costs relating to machinery accounts for 20% of the production overhead.
Costs relating to material handling stands at 50% of costs relating to machinery.
You are required to:
1.Prepare a statement showing the unit costs and total costs of each product using the absorption costing method.
2.Prepare a statement showing the unit costs and total costs of each product using activity - based costing system.

Question 37 - Mtp

ANI Limited is a trader of a Product Z. It has decided to analyse the profitability of its five new customers. It buys Z article at ₹5,400 per unit and sells to retail customers at a listed price of ₹6,480 per unit. The data pertaining to five customers are:

	customers				
	A	B	C	D	E
Units sold	4,500	6,000	9,500	7,500	12,750
Listed Selling Price	₹6,480	₹6,480	₹6,480	₹6,480	₹6,480
Actual Selling Price	₹6,480	₹6,372	₹5,940	₹6,264	₹5,832
Number of Purchase order	15	25	30	25	30
Number of Customer visits	2	3	6	2	3
Number of deliveries	10	30	60	40	20
Kilometers travelled per delivery	20	6	5	10	30
Number of expedited deliveries	0	0	0	0	1

Its five activities and their cost Driver are:

Activity	Cost Driver Rate
Order taking	₹4,500 per purchase order
Customer visits	₹3,600 per customer visit
Deliveries	₹7.50 per delivery Km travelled
Product handling	₹22.50 per case sold
Expedited deliveries	₹13,500 per expedited delivery

Required:
1. COMPUTE the customer-level operating income of each of five retail customers (A, B, C, D and E).
2. STATE the factors ANI Limited should consider in deciding whether to drop a customer.

Question 38 - Pyq

XYZ Ltd. is engaged in manufacturing two products- Express Coffee and Instant Coffee. It furnishes the following data for a year:

Product	Actual Output (units)	Total Machine hour	Total Number of Purchase order	Total Number of set ups
Express Coffee	5,000	20,000	160	20
Instant Coffee	60,000	1,20,000	384	44

The annual overheads are as under:

Particulars	₹.
Machine Processing costs Set up related costs Purchase related costs	7,00,000 7,68,000 6,80,000

You are required to:
a.Compute the costs allocated to each product – Express Coffee and Instant Coffee from each activity on the basis of Activity- Based Costing (ABC) method.
b.Find out the overhead cost per unit of each product – Express coffee and Instant coffee based on (a) above.

Question 39 - Pyq

Beta Limited produces 50,000 Units, 45,000 Units and 62,000 Units of product 'A', 'B' and 'C' respectively. At present the company follows absorption costing method and absorbs overhead on the basis of direct labour hour. Now, the Company wants to adopt Activity Based Costing.
The information provided by Beta Limited is as follows:

	Product A	Product B	Product C
Floor Space Occupied	5,000 Sq. Ft.	4,500 Sq. Ft.	6,200 Sq. Ft.
Direct Labour hour	7,500 hour	7,200 hour	7,800 hour
Direct Machine hour	6,000 hour	4,500 hour	4,650 hour
Power Consumption	32%	28%	40%

Overhead for year are as follows:

Rent & Taxes	₹ 8,63,500
Electricity Expense	₹ 10,66,475
Indirect labour	₹ 13,16,250
Repair & Maintenance	₹ 1,28,775
	₹ 33,75,000

Required:
a. Calculate the overhead rate per labour hour under Absorption Costing.
b. Prepare a cost statement showing overhead cost per unit for each product – 'A', 'B' and 'C' as per Activity based Costing.

Question 40 - Rtp

Hygiene Care Ltd. is a manufacturer of a range of goods. The cost structure of its different products is as follows:

Particulars	Hand Wash	Detergent Powder	Dishwasher

Direct Materials (₹. / Pu)	150	120	120
Direct Labour @₹.10/ hour (₹. / Pu)	45	60	75
Production Overheads (₹. / Pu)	40	50	40
Total Cost (₹. / Pu)	235	230	235
Quantity Produced (Units)	30,000	60,000	90,000

Hygiene Care Ltd. was absorbing overheads on the basis of direct labour hour. Management accountant has suggested that the company should introduce ABC system and has identified cost Driver and cost pools as follows:

Activity Cost Pool	**Cost Driver**	**Associated Cost**
Goods Receiving	Number of Dispatch Order	8,88,000
Inspecting and Testing costs	Number of Production Runs	26,82,000
Dispatching	Number of dispatch order	6,30,000
Storage Cost	Number of Batches of material	36,00,000

The following information is also supplied:

Details	**Hand Wash**	**Detergent Powder**	**Dishwasher**
Batches of material	720	780	900
Number of dispatch order	360	540	600
No. of Production Runs	1,500	2,100	2,400
Number of Dispatch order	600	900	1,000

Required: CALCULATE activity-based production cost of all the three products.

Cost Sheet

Question 1 - Rtp

Impact Ltd. provides you the following details of its expenditures for the year ended 31st March, 2021:

S.No.	Particulars	Amount (₹)	Amount (₹)
(i)	Raw materials purchased		5,00,00,000
(ii)	GST paid under Composition scheme		10,00,000
(iii)	Freight inwards		5,20,600
(iv)	Trade discounts received		10,00,000
(v)	Wages paid to factory workers		15,20,000
(vi)	Contribution made towards employees' PF & ESIS		1,90,000
(vii)	Production bonus paid to factory workers		1,50,000
(viii)	Fee for technical assistance		1,12,000
(ix)	Amount paid for power & fuel		2,62,000
(x)	Job charges paid to job workers		4,50,000
(xi)	Stores and spares consumed		1,10,000
(xii)	Depreciation on:		
	Factory building	64,000	
	Office building	46,000	
	Plant & Machinery	86,000	1,96,000
(xiii)	Salary paid to supervisors		1,20,000
(xiv)	Repairs & Maintenance paid for:		
	Plant & Machinery	58,000	
	Sales office building	50,000	
	Vehicles used by directors	20,600	1,28,600
(xv)	Insurance premium paid for:		
	Plant & Machinery	31,200	
	Factory building	28,100	59,300
(xvi)	Expenses paid for quality control check activities		25,000
(xvii)	Research & development cost paid for improvement in production process		48,200
(xviii)	Expenses paid for administration of factory work		1,38,000
(xix)	Salary paid to functional mangers:		
	Production control	4,80,000	
	Finance & Accounts	9,60,000	
	Sales & Marketing	12,00,000	26,40,000
(xx)	Salary paid to General Manager		13,20,000
(xxi)	Packing cost paid for:		
	Primary packing necessary to maintain quality	1,06,000	
	For re-distribution of finished goods	1,12,000	2,18,000
(xxii)	Interest and finance charges paid (for usage of non-equity fund)		3,50,000
(xxiii)	Fee paid to auditors		1,80,000
(xxiv)	Fee paid to legal advisors		1,20,000
(xxv)	Fee paid to independent directors		2,40,000

(xxvi)	Payment for maintenance of website for online sales		1,80,000
(xxvii)	Performance bonus paid to sales staffs		2,40,000
(xxviii)	Value of stock as on 1st April, 2020:		
	Raw materials	9,00,000	
	Work-in-process	4,00,000	
	Finished goods	7,00,000	20,00,000
(xxix)	Value of stock as on 31st March, 2021:		
	Raw materials	5,60,000	
	Work-in-process	2,50,000	
	Finished goods	11,90,000	20,00,000

Amount realized by selling of waste generated during manufacturing process – ₹ 66,000/-
From the above data, you are required to PREPARE Statement of cost of Impact Ltd. for the year ended 31st March, 2021, showing (i) Prime cost, (ii) Factory cost, (iii) Cost of Production, (iv) Cost of goods sold and (v) Cost of sales.

Question 2 - Study Material

The following data relates to the manufacture of a standard product during the month of April, 2018:

Particulars	**Amount (₹.)**
Raw materials	1,80,000
Direct wages	90,000
Machine Hours worked (Hours)	10,000
Machine hour rate (per hour)	8
Administration overheads	35,000
Selling overheads (per unit)	5
Units produced	4,000
Units sold	3,600
Selling price per unit	125

You are required to PREPARE a cost sheet in respect of the above showing:
(i) Cost per unit
(ii) Profit for the month

Question 3 - Study Material

The following information has been obtained from the records of ABC Corporation for the period from June 1 to June 30, 20X8:

	On June 1, 20X8 (₹.)	**On June 30, 20X8 (₹.)**
Cost of raw materials	60,000	50,000
Cost of work-in-process	12,000	15,000
Cost of stock of finished goods	90,000	1,10,000
Purchase of raw materials during June' 20X8		4,80,000
Wages paid		2,40,000
Factory overheads		1,00,000
Administration overheads (related to production)		50,000
Selling & distribution overheads		25,000
Sales		10,00,000

PREPARE a statement giving the following information:
(a) Raw materials consumed;
(b) Prime cost;
(c) Factory cost;
(d) Cost of goods sold; and
(e) Net profit.

Question 4 - Study Material

The books of Adarsh Manufacturing Company present the following data for the month of April, 20X9:

Direct labour cost ₹.17,500 being 175% of works overheads.
Cost of goods sold excluding administrative expenses ₹.56,000.
Inventory accounts showed the following opening and closing balances:

	April 1(₹.)	April 30 (₹.)
Raw materials	8,000	10,600
Work in progress	10,500	14,500
Finished goods	17,600	19,000

Other data are:

	(₹.)
Selling expenses	3,500
General and administration expenses	2,500
Sales for the month	75,000

You are required to:
(i) COMPUTE the value of materials purchased.
(ii) PREPARE a cost statement showing the various elements of cost and also the profit earned.

Question 5 - Study Material

A Ltd. Co. has capacity to produce 1,00,000 units of a product every month. Its works cost at varying levels of production is as under:

Level	Works cost per unit (₹.)
10%	400
20%	390
30%	380
40%	370
50%	360
60%	350
70%	340
80%	330
90%	320
100%	310

Its fixed administration expenses amount to ₹.1,50,000 and fixed marketing expenses amount to ₹.2,50,000 per month respectively. The variable distribution cost amounts to ₹.30 per unit.
It can sell 100% of its output at ₹.500 per unit provided it incurs the following further expenditure:
(a) it gives gift items costing ₹.30 per unit of sale;
(b) it has lucky draws every month giving the First prize of ₹.50,000; 2nd prize of ₹.25,000, 3rd prize of ₹.10,000 and three consolation prizes of ₹.5,000 each to customers buying the product.
(c) it spends ₹.1,00,000 on refreshments served every month to its customers;
(d) it sponsors a television programme every week at a cost of ₹.20,00,000 per month.
It can market 30% of its output at ₹.550 per unit without incurring any of the expenses referred to in (a) to (d) above.
PREPARE a cost sheet for the month showing total cost and profit at 30% and 100% capacity level.

Question 6 -

The cost of sale of Product Z is made up as follows:

Particulars	₹.
Materials used in manufacturing	5,500
Materials used in packing materials	1,000
Materials used in selling the product	150
Materials used in the factory	75
Materials used in the office	125
Primary Packing Costs	800
Quality Control Cost	600
Labour required in producing	1,000
Labour required for supervision of the Management – Factory	200
Freight inward of material used in manufacturing	1,000

Expenses – Indirect – Factory	100
Expenses – Office	125
Depreciation – Office Building and Equipment	75
Depreciation – Factory	175
Research and Development Costs	700
Recoveries on account of sale of scrap produced in the normal course of manufacture	100
Selling Expenses	350
Advertising	125

Assuming that all the products manufactured are sold, what should be the selling price to obtain a profit of 25% on selling price?
Show the divisions of costs for Product Z.

Cost Sheet – Cost of Raw Material Purchased

Question 7 - Pyq

The books and records of the Anand Manufacturing Company present the following data for the month of August, 1998:
Direct labour cost ₹. 17,500 (175% of factory overhead) Cost of sales ₹. 56,000.
Inventory accounts showed these opening and closing balances:

Particulars	August 1 (₹.)	August 31 (₹.)
Raw Materials	8,000	10,600
Work-in-Progress	10,500	14,500
Finished Goods	17,600	19,000
Other data:		
Selling Expenses		3,500
General and Administration Expenses		2,500
Sales for the month		75,000

You are required to compute cost of Raw Materials purchased & prepare a statement showing cost of goods manufactured and sold and profit earned.

Cost Sheet – Current and Future Cost and Selling Price

Question 8 - Pyq

Cool-Wind Ltd. manufactures fans, which are sold at ₹. 400 per piece. The cost of sale is composed of 40% of direct material, 30% wages and 30% overhead.
An increase in material price by 25% and in wage rate by 10% is expected in the forthcoming year; as a result of which the profit at current selling price May dwindle by 39% of present gross profit.
With the above information, you are required to:
(a) Prepare a statement showing current and future cost and profit at present selling price, and
(b) Determine the future selling price, if the present rate of gross profit is to be maintained.

Cost Sheet – Reverse Working to Compute Purchases

Question 9 - Pyq

Comprehensive Ltd gives you the following information –
1. From Financial Records:

Particulars	₹. 000s
Sales for the year	75,00
Direct Labour	17,50
Management Expenses	2,50
Selling Expenses	3,50

2. From Inventory Records:

Particulars	As at 31st Dec (₹. 000s)	As at 1st Jan (₹. 000s)
Raw Materials	10,60	8,00
Finished Goods	19,00	17,60
WIP (50% complete)	14,50	10,50

3. From analysis of past data:
(a) Direct Labour would be 175% of Works Overheads.
(b) Cost of Goods Sold (excluding Administration Overheads) would be ₹. 11,200 per unit.
(c) Selling expenses would be ₹. 700 per unit.
You are required to:
1. Compute the value of materials purchased during the year.
2. Determine the rate of profit earned on Sales.
3. Discuss whether interest payment of ₹. 2,00,000 on working Capital would affect the above rate of profit.

Cost Sheet – Product Wise Cost Analysis and Apportionment

Question 10 - Pyq

Bright Shoe-Polish Company manufacturing black and brown polish in one standard size of tin retailing at ₹. 12 and ₹. 13.30 respectively. Following information is supplied to you:

Opening Stock:	
Black polish	2,400 tins
Brown polish	8,000 tins
Closing Stock:	
Black polish	5400 tins
Brown polish	3,000 tins
Sales:	
Black polish	72,000 tins
Black polish	30,000 tins
Direct materials:	
Polish	₹. 2,46,000
Tins	₹. 1,20,000
Direct wages	₹. 2,04,000
Production overhead	₹. 3,06,000
Administration and selling overhead	₹. 1,02,000

The opening stock of black and brown polish was valued at its production cost. The cost of raw materials for brown polish is 10 per cent higher than for black, but there is no difference in the cost of tins. Direct wages for brown polish are 8 per cent higher than those of black polish and production overheads are considered to vary with direct wages. Administration and selling overhead is absorbed at a uniform rate per tin of polish sold. Prepare a statement to show the cost and profit per tin of polish.

Question 11 - Pyq

SK Engineering Company Limited manufactures two types of auto bearing type 'XD' and type 'XE'. The company's records show the following Particulars for those bearing for the month of May, 2009:

Particulars	Amount (₹.)
Direct Materials	38,10,000
Direct labour	20,10,000
Production overheads	6,03,000
Office Overheads	6,42,300

There was no work-in-progress at the beginning or at the end of the month. It was ascertained that:

- Direct material cost per bearing for type 'XD' was 160 percent of those for type 'XE'.
- Direct labour cost per bearing for type 'XE' was 40 percent of those for type 'XD'.
- Production overheads were absorbed on the basis of direct labour cost.
- Office overheads were absorbed on the basis of factory cost.
- Selling and distribution overheads were ₹. 2 per bearing sold for each type.
- Stock of finished bearing on 1st May, 2009 was 15,000 bearings @ ₹.15 of type 'XD' and 20,000 bearing @ ₹. 8 of type 'XE'.
- Production during the month of May, 2009 was 2,70,000 bearings of type 'XD' and 3,30,000 bearings of type 'XE ' and out of May's output 25,000 bearings of type 'XD' and 40,000 bearings of type 'XE' would be remains in stock on 31st May, 2009 which valued at cost of production. You are required to:

(1) Prepare a statement showing cost of production each type of bearings.
(2) Prepare, if the company desires at 20 percent profit on selling price.

Cost Sheet – Finding Out Missing Figures

Question 12 - Pyq

A fire occurred in the factory premises on October 31, 2003. The accounting records have been destroyed. Certain accounting records were kept in another building. They reveal the following for the period September 1, 2003 to October 31, 2003:

- Direct material purchased — ₹. 2,50,000
- Work in process inventory, 1.9.2003 — ₹. 40,000
- Direct materials inventory, 1.9.2003 — ₹. 20,000
- Finished goods inventory, 1.9.2003 — ₹. 37,750
- Indirect manufacturing costs — 40% of conversion cost
- Sales revenues — ₹. 7,50,000
- Direct manufacturing labour — ₹. 2,22,250
- Prime costs — ₹. 3,97,750
- Gross margin percentage based on revenues — 30%
- Cost of goods available for sale — ₹. 5,55,775

The loss is fully covered by insurance company. The insurance company wants to know the historical cost of the inventories as a basis for negotiating a settlement, although the settlement is actually to be based on replacement cost, not historical cost.

Required:

(i) Finished goods inventory, 31.10.2003
(ii) Work in process inventory, 31.10.2003
(iii) Direct materials inventory, 31.10.2003

Estimation of Selling Price Overhead Estimation – Quotation

Question 13 - Pyq

Stand Ltd is engaged in manufacture of leather items as per customers specifications. Summary of their accounts for the last year shown in the following information:

Particulars	Amount (₹.)
Opening stock of Raw Materials	50,000
Purchases of Raw Materials	12,60,000
Closing Stock of Raw Materials	75,000
Production OH	1,96,000
Administration OH	1,45,000
workers' Wages	7,00,000

In the current year, the Company has obtained a job from Ram. Estimates of Material and Labour Cost for this job are ₹. 5,500 and ₹. 4,000 respectively. The Company's costing system recognizes Production OH as a % of Direct labour and Administration OH as a % of Works Cost. Calculate the Price that the Company should quote Ram, in order to earn a profit of 20% on Sales.

Estimation of New Selling Price

Question 14 - Pyq

A Company manufactures Radios, which are sold at ₹. 1,600 per unit. The total cost is composed of 30% for Direct Materials, 40% for Direct Wages and 30% for Overheads. An increase in material price by 30% and in wage rates by 10% is expected in the forthcoming year, as a result of which the profit at current selling price May Decrease by 40% of the present profit per unit. You are required to prepare a statement showing current and future profit at present Selling Price. What should be the Selling Price to maintain the present rate of profit?

Question 15 - Pyq

A Company produces a Machine and sells it for ₹. 3,000. There is an increase of 20% in the Cost of Material, 10% in Labour, and 10% in Overhead Cost. The only figures available are that Material Cost is 50% of Cost of Sales, Labour Cost is 30% of Cost of Sales and Overhead is 20% of Cost of Sales.

The anticipated increased cost in relation to the present Sales Price would cause a 30% Decrease in the amount of the present Gross Profit. What would be the Selling Price of the machine to give the same percentage of Gross Profit as before?

Question 16 - Pyq

The cost structure of an article the selling price of which is ₹. 45,000 is as follows:

Direct Materials	50%
Direct Labour	20%
Overheads	30%

An increase of 15% in the cost of materials and of 25% in the cost of labour is anticipated. These increased costs in relation to the present selling price would cause a 25% Decrease in the amount of present profit per article.

You are required

(a) To prepare a statement of profit per article at present and

(b) The revised selling price to produce the same percentage of profit to sales as before.

Estimation of Overhead as Percentage of Costs

Question 17 - Pyq

In a manufacturing company factor overheads are charged as fixed percentage basis on direct labour and office overheads are charged on the basis of percentage of factory cost. The following information is available related to the ending 31st March, 2008:

Particulars	Production A	Production B
Direct Materials	₹. 19,000	₹. 15,000
Direct Labour	₹. 15,000	₹. 25,000
Sales	₹. 60,000	₹. 80,000
Profits	25% on cost	25% on sales price

You are required to find out:

(a) The percentage of factory overheads on direct labour.

(b) The percentage of office overheads on factory cost.

Overhead Analysis into Fixed and Variable

Question 18 - Pyq

Popeye Company is a metal and wood cutting manufacturer, selling products to home construction market. Consider the following data for the month of October.

Particulars	₹.	Particulars	₹.
Sandpaper	5,000	Plant Leasing Costs	1,35,000
Material Handling Costs	1,75,000	Depreciation - Plant Equipment	90,000
Lubricants and Coolants	12,500	Property Taxes on Plant Equipment	10,000
Miscellaneous Indirect Manufacturing Labour	1,00,000	Fire Insurance on Plant Equipment	7,500
Direct Manufacturing Labour	7,50,000	Direct Materials Purchased	11,50,000
Direct Materials, 1 October	1,00,000	Sales Revenues	34,00,000
Direct Materials, 31 October	1,25,000	Marketing Promotions	1,50,000
Finished Goods, 1 October	2,50,000	Marketing Salaries	2,50,000
Finished Goods, 31 October	3,75,000	Distribution Costs	1,75,000
Work-in-Process, 1 October	25,000	Customer Service Costs	2,50,000
Work-in-Process, 31 October	35,000		

1. Prepare an Income Statement with separate supporting schedule of Cost of Goods Manufactured.
2. For all manufacturing items, indicate by V or F, whether each is basically a Variable Cost or a Fixed Cost (where the cost object is a product unit).

Preparation of Income Statement – With Supporting Schedules

Question 19 - Pyq

The following figures are extracted from the Trial Balance of Gogetter Co. on 30th September, 1986:

Particulars	₹.	Particulars	₹.
Inventories:		Indirect Labour	18,000
Finished Stock	80,000	Factory Supervision	10,000

Raw Materials	1,40,000	Repairs and Upkeep-Factory	14,000
Work-in-Process	2,00,000	Heat, Light and Power	65,000
Office Appliances	17,400	Rates and Taxes	6,300
Plant & Machinery	4,60,500	Miscellaneous Factory expenses	18,700
Buildings	2,00,000	Sales Commission	33,600
Sales	7,68,000	Sales Travelling	11,000
Sales Return & Rebates	14,000	Sales Promotion	22,500
Materials Purchased	3,20,000	Distribution Department Salaries and expenses	18,000
Freight incurred on Materials	16,000	Office Salaries and Expenses	8,600
Purchase Returns	4,800	Interest on Borrowed Funds	2,000
Direct labour	1,60,000		

Further details are available as follows:

Closing Inventories:

Finished Goods	₹. 1,15,000
Raw Materials	₹. 1,80,000
Work-in-Process	₹. 1,92,000

Accrued expenses on:

Direct Labour	₹. 8,000
Indirect Labour	₹. 1,200
Interest on Borrowed Funds	₹. 2,000

Depreciation to be provided on:

Office Appliances	5%
Plant and Machinery	10%
Buildings	4%

Distribution of the following costs:

Heat, light and Powers to Factory, Office and Selling in the ratio 8:1:1.

Rates and Taxes are two-thirds to Factory and one-third of Office. Depreciation on Buildings to Factory, Office and Selling in the ratio 8:1:1.

With the help of the above information, you are required to prepare a condensed Profit and Loss Statement of Gogetter Co. for the year ended 30th September, 1986 along with supporting schedules:

(i) Cost of Sales
(ii) Administration Expenses
(iii) Selling and Distribution Expenses.

Income Statement – Wrong Estimation of Overhead based Selling Price

Question 20 - Rtp

Dayalan has a small furniture factory and specialize in the manufacture of tables of standard sizes of which he can make 15,000 a year. Last year, he made and sold 10,000 tables and his cost per table was ₹. 55, made up as **(a)** Materials ₹. 30, **(b)** Labour ₹. 10 and **(c)** OH (Fixed) recovered at 50% of Material Cost ₹. 15.

Prices are fixed by adding a standard margin of 10% to the total cost arrived at as above. For the current year, due to a fall in the cost of materials, total cost was determined at ₹. 40 per table as under – (a) Materials ₹. 20, (b) Labour ₹. 10 and (c) Overhead (Fixed) recovered at 50% of Material Cost ₹. 10.

Dayalan maintained his standard margin at 10% of his total cost of sales. Sales were at the same level as in the previous year. You are required to –

1. Determine Profit or Loss for the current year
2. Compute the price that should have been charged in the current year to yield the same profit as in previous year.
3. Compute the price that should have been charged in the current year to yield the same profit PERCENTAGE as in previous year.

Direct and Indirect Cost Apportionment for a Dealership Business

Question 21 - Pyq

XYZ Auto Ltd is in the business of selling cars. It also sells insurance and finance as part of its overall business strategy. The following information is available for the Company –

Particulars	Physical Units	Sales Value
Sales of Cars	10,000 Cars	₹. 30,000 Lakhs
Sales of Insurance	6,000 Policies	₹. 1,500 Lakhs
Sales of Finance	8,000 Loans	₹. 19,200 Lakhs

The Revenue Earnings from each line of business before expenses are as follows:
Sale of Cars – 3% of Sales Value, Sale of Insurance – 20% of Sales Value, Sale of Finance – 2% of Sales Value.
The expenses of the Company are as follows –

Salesman Salaries	₹. 200 Lakhs
Rent	₹. 100 Lakhs
Electricity	₹. 100 Lakhs
Advertising	₹. 200 Lakhs
Documentation Cost per Insurance Policy	₹. 100
Documentation Cost for each Loan	₹. 200
Direct Sales Expenses per Car	₹. 5,000

Indirect Costs have to be allocated in the ratio of physical units sold. You are required to:

- Make a Cost Sheet for each product allocating the Direct and Indirect Costs, and also showing the product-wise profit and Total Profit.
- Calculate the percentage of profit to revenue earned from each line of business.

Determination of Selling Price

Question 22 - Pyq

A Re-roller produced 400 metric tons of MS bars spending ₹. 36,00,000 towards Material and ₹. 6,20,000 towards Rolling Charges. Ten percent of the output was found to be defective, which has to be sold at 10% less than the price for good production. If the sales realization should give the Firm an overall profit of 12.5% on cost, find the Selling Price per Metric Ton of both the categories of bars. The scrap arising during the rolling process fetched a realization of ₹. 60,000.

Decision Making on Foreign Offer

Question 23 - Rtp

New Products Company wishes to launch its product in the market. The estimates of costs are –
Direct Materials and Direct Labour per unit = ₹. 40 and ₹. 36 respectively.
Production OH will be as under –

Production Department	OH Rate	Normal Working Hours for OH purposes	Fixed OH included in Total OH	Time required p.u. of the product
A	₹. 3.60 per hour	30,000 Hours	₹. 36,000	5 Hours
B	₹. 4.80 per hour	20,000 Hours	₹. 12,000	2.5 Hours
C	₹. 6.00 per hour	40,000 Hours	₹. 60,000	4 Hours

- Annual Administration and Selling Expenses applicable to the new product is ₹. 2,50,000.
- Estimated Sales Quantity per annum = 50,000 units.

You are required to:
1. Prepare a Cost Sheet and compute the unit selling price with a Profit Margin of 40% of Total Cost.
2. Advise management whether to accept offer from a Foreign Buyer, for additional 10,000 units at ₹. 125 p.u.

Basic Decision Making

Question 24 - Pyq

The following information is available to Z Ltd. for the financial year ending 31st March 2016:

Particulars	(₹.)
Direct material	3,45,000
Direct wages	3,90,000
Production overheads (75% variable)	2,40,000
Administration overheads (75% fixed)	1,20,000
Selling and distribution overheads (50% fixed)	1,60,000
Sales – 10,000 units	15,50,000
Opening stock – Nil	

Closing stock – Finished goods – 5,000 units	
No WIP (Opening / closing)	

For the year 2016 - 17, it is estimated that:

1. Output will increase by one – third; sales quantity will increase by 50% by incurring additional advertisement expenses of ₹.1,45,200. Assume that opening stock is First sold before using the current year's output.
2. Material prices will increase by 5%.
3. Wage rate will increase by 5% while overall direct labour efficiency will Decrease by 4%.
4. The variable overheads will be at the same unit rates as last year.
5. Fixed production overheads will increase by 25%.
6. Assume that production and sales units were achieved as per budget last year and will be achieved as per estimate this year also.
7. The company will revise its selling price in 2016-17 to ₹.125 per unit. The same selling price will hold for the units sold from the opening stock also.

You are required to prepare a statement showing cost of sales and sales profit giving effect to the above for the financial year 2016-17.

Semi Variable Cost and Pricing Decision

Question 25 - Pyq

A manufacturing Company has an installed capacity of 1,50,000 units per annum. Its cost structure is given below:

Particulars	**₹.**
Variable cost unit	
Materials	10
Labour (subject to a minimum of ₹. 1,00,000 per month)	10
Overheads	4
Fixed overheads per annum	1,92,300
Semi-variable overheads per annum at 75% capacity (It will increase by ₹. 4,000 per annum for increase of every 5% of the capacity utilization or any part thereof)	60,000

The capacity utilization for the next year is budgeted at 75% for First 3 months 80% for the next six month and 90% for the remaining three months.

Required: If the company is planning to have a profit of 20% on the selling price, calculate the selling price per unit for the next year.

Question 26 - Pyq

A manufacturing Company has an installed capacity of 1,20,000 units p.a. The cost structure of the product is given below –

Material Costs	₹. 8 per unit
Labour (subject to a minimum of ₹. 56,000 per month)	₹. 8 per unit
Variable Overheads	₹. 3 per unit
Fixed Overheads	₹. 1,04,000 per annum

Semi-Variable Overheads ₹. 48,000 per annum at 60% capacity, which increase by ₹. 6,000 per annum for increase of every 10% of the capacity utilization or any part thereof, for the year as a whole.

The capacity utilization for the next year is estimated at 60% for two months, 75% for six months and 80% for the remaining part of the year. If the Company is planning to have a profit of 25% on the Selling Price, calculate the Selling Price per unit. Assume that there are no Opening and Closing Stocks.

Question 27 - Pyq

Maximum production capacity of JK Ltd is 5,20,000 units per annum. Details of estimated cost of production are –

- Direct Material ₹. 15 per unit.
- Direct wages ₹. 9 per unit (subject to a minimum of ₹. 2,50,000 per month).
- Fixed Overheads ₹.9,60,000 per annum.
- Variable Overheads ₹. 8 per unit.
- Semi-Variable Overheads are ₹. 5,60,000 per annum up to 50% capacity and additional ₹. 1,50,000 per annum for every 25% increase in capacity or a part of it.

JK limited worked at 60% capacity for the First 3 months during the year 2008, but it is expected to work at 90% capacity for the remaining nine months.
The Selling Price per unit was ₹. 44 during the First 3 months.
Calculate what Selling Price per unit should be fixed for the remaining nine months to yield a total profit of ₹. 15,62,500 for the whole year.

Question 28 - Rtp

A Factory can produce 60000 units p.a. at 100% capacity. The estimated cost of production is as under:

Direct Material	₹. 18 per unit
Direct Labour	₹. 12 per unit
Indirect Expenses:	
Fixed	₹. 9,00,000 per annum
Variable	₹. 30 per unit
Semi Variable	₹. 3,00,000 per annum up to 50% capacity and an extra amount of ₹. 60,000 for every 20% increase in capacity or part thereof.

If the production programme of the Factory is as indicated below, and the Management desires to ensure a profit of ₹. 2,76,000 for the year, work out the Average Selling Price at which each unit should be quoted.

- First three months of the year 50% of the capacity.
- Remaining nine months 80% of the capacity.

Question 29 - Pyq

A Factory incurred the following expenditure during last year –

Particulars	**₹.**	**₹.**
Direct Material Consumed		12,00,000
Manufacturing Wages		7,00,000
Manufacturing Overhead:		
Fixed	3,60,000	
Variable	2,50,000	6,10,000
Total		25,10,000

In the next year, the following changes are expected in production and cost of production –

- Production will increase due to recruitment of 60% more workers in the factory.
- Overall Efficiency will Decline by 10% on account of recruitment of new workers.
- There will be an increase of 20% in Fixed Overhead and 60% in Variable Overhead.
- The cost of Direct Material will be Decreased by 6%.
- The Company desires to earn a profit of 10% on Selling Price.

Ascertain the Cost of Production and Sales Value for the next year.

Question 30 - Pyq

XYZ a manufacturing firm has revealed following information for September 2019:

	1st September (₹.)	**30th September (₹.)**
Raw materials	2,42,000	2,92,000
Work in progress	2,00,000	5,00,000

The firm incurred following expenses for a targeted production of 1,00,000 units during the month:

	(₹.)
Consumable stores and spares of factory	3,50,000
Research and development cost for process improvements	2,50,000
Quality control cost	2,00,000
Packing cost (secondary) per unit of goods sold	2
Lease rent of production asset	2,00,000
Administrative expenses (general)	2,24,000
Selling and distribution expenses	4,13,000
Finished goods (opening)	Nil
Finished goods (closing)	5,000 units

Detective output which is 4% of targeted production, realizes ₹.61 per unit. Closing stock is valued at cost of production (excluding administrative expenses).
Cost of goods sold, excluding administrative expenses amounts to ₹.78,26,000.

Direct employees cost is ½ of the cost of material consumed.
Selling price of the output is ₹.110 per unit.
You are required to –
(i) Calculate the value of material purchased
(ii) Prepare cost sheet showing the profit earned by the firm.

Question 31 - Pyq

Following details are provided by M/s ZIA Private Limited for the quarter ending 30th September 2018 (amount in ₹.):

1. Direct expenses – 1,80,000
2. Direct wages being 175% of factory overheads – 2,57,250
3. Cost of goods sold – 18,75,000
4. Selling and distribution overheads – 60,000
5. Sales – 22,10,000
6. Administrative overheads are 10% of factory overheads

Stock details as per stock register:

Particulars	**30th June 2018 (₹.)**	**30th September 2018 (₹.)**
Raw materials	2,45,600	2,08,000
Work in progress	1,70,800	1,90,000
Finished goods	3,10,000	2,75,000

You are required to prepare a cost sheet showing:
(i) Raw material consumed
(ii) Prime cost
(iii) Factory cost
(iv) Cost of goods sold
(v) Cost of sales and profit

Question 32 - Study Material

From the following Particulars, you are required to PREPARE monthly cost sheet of Aditya Industries:

	Amount (₹)
Opening Inventories:	
- Raw materials	12,00,000
- Work-in-process	18,00,000
- Finished goods (10,000 units)	9,60,000
Closing Inventories:	
- Raw materials	14,00,000
- Work-in-process	16,04,000
- Finished goods	?
Raw materials purchased	1,44,00,000
GST paid on raw materials purchased (ITC available)	7,20,000
Wages paid to production workers	36,64,000
Expenses paid for utilities	1,45,600
Office and administration expenses paid	26,52,000
Travelling allowance paid to office staffs	1,21,000
Selling expenses	6,46,000

Machine Hours worked- 21,600 Hours
Machine hour rate- ₹ 8.00 per hour
Units sold- 1,60,000
Units produced- 1,94,000
Desired profit- 15% on sales.

Question 33 - Rtp

RTA Ltd. has the following expenditures for the year ended 31st December, 2020:

Particulars	**Amount (₹.)**	**Amount (₹.)**
(i) Raw materials purchased		5,00,00,000
(ii) Freight inward		9,20,600

(iii) Wages paid to factory workers		25,20,000
(iv) Royalty paid for production		1,80,000
(v) Amount paid for power & fuel		3,50,000
(vi) Job charges paid to job workers		3,10,000
(vii) Stores and spares consumed		1,10,000
(viii) Depreciation on office building		50,000
(ix) Repairs and maintenance paid for :		
- Plant & Machinery	40,000	
- Sales office building	20,000	60,000
(x) Insurance premium paid for :		
- Plant & Machinery	28,200	
- Factory building	18,800	47,000
(xi) Expenses paid for quality control check activities		18,000
(xii) Research & development cost paid for improvement in production process		20,000
(xiii) Expenses paid for pollution control and engineering & maintenance		36,000
(xiv) Salary paid to Sales & Marketing mangers		5,60,000
(xv) Salary paid to General Manager		6,40,000
(xvi) Packing cost paid for:		
- Primary packing necessary to maintain quality	46,000	
- For re-distribution of finished goods	80,000	1,26,000
(xvii) Fee paid to independent directors		1,20,000
(xviii) Performance bonus paid to sales staffs		1,20,000
(xix) Value of stock as on 1stJanuary, 2020:		
- Raw materials	10,00,000	
- Work-in-process	8,60,000	
- Finished goods	12,00,000	30,60,000
(xx) Value of stock as on 31stDecember, 2020:		
- Raw materials	8,40,000	
- Work-in-process	6,60,000	
- Finished goods	10,50,000	25,50,000

Amount realized by selling of scrap and waste generated during manufacturing process –₹. 48,000/-
From the above data you are requested to PREPARE Statement of Cost for RTA Ltd. for the year ended 31st December, 2020, showing (i) Prime cost, (ii) Factory cost, (iii) Cost of Production, (iv) Cost of goods sold and (v) Cost of sales.

Question 34 - Rtp

The following details are available from the books of R Ltd. for the year ending 31st March 2020:

Particulars	**Amount (₹.)**
Purchase of raw materials	84,00,000
Consumable materials	4,80,000
Direct wages	60,00,000
Carriage inward	1,72,600
Wages to foreman and store keeper	8,40,000
Other indirect wages to factory staffs	1,35,000
Expenditure on research and development on new production technology	9,60,000
Salary to accountants	7,20,000
Employer's contribution to EPF & ESI	7,20,000
Cost of power & fuel	28,00,000
Production planning office expenses	12,60,000

Salary to delivery staffs	14,30,000
Income tax for the assessment year 2019-20	2,80,000
Fees to statutory auditor	1,80,000
Fees to cost auditor	80,000
Fees to independent directors	9,40,000
Donation to PM-national relief fund	1,10,000
Value of sales	2,82,60,000
Position of inventories as on 01-04-2019:	
- Raw Material	6,20,000
- W-I-P	7,84,000
- Finished goods	14,40,000
Position of inventories as on 31-03-2020:	
- Raw Material	4,60,000
- W-I-P	6,64,000
- Finished goods	9,80,000

From the above information PREPARE a cost sheet for the year ended 31 st March 2020.

Question 35 - Rtp

From the following data of Arnav Metallic Ltd., CALCULATE Cost of production:

	Amount (₹.)
(i) Repair & maintenance paid for plant & machinery	9,80,500
(ii) Insurance premium paid for plant & machinery	96,000
(iii)Raw materials purchased	64,00,000
(iv)Opening stock of raw materials	2,88,000
(v)Closing stock of raw materials	4,46,000
(vi)Wages paid	23,20,000
(vii)Value of opening Work-in-process	4,06,000
(viii)Value of closing Work-in-process	6,02,100
(ix)Quality control cost for the products in manufacturing process	86,000
(x)Research & development cost for improvement in production process	92,600
(xi)Administrative cost for:	
- Factory & production	9,00,000
- Others	11,60,000
(xii) Amount realised by selling scrap generated during the manufacturing process	9,200
(xiii)Packing cost necessary to preserve the goods for further processing	10,200
(xiv) Salary paid to Director (Technical)	8,90,000

Question 36 - Pyq

The following data are available from the books and records of Q Ltd. for the month of April 2020:
Direct Labour Cost = ₹. 1,20,000 (120% of Factory Overheads)
Cost of Sales = ₹. 4,00,000
Sales = ₹. 5,00,000
Accounts show the following figures:

	1st April, 2020 (₹.)	**30th April, 2020 (₹.)**
Inventory:		
Raw material	20,000	25,000
Work-in-progress	20,000	30,000
Finished goods	50,000	60,000

Other details:		
Selling expenses		22,000
General & Admin. expenses		18,000

You are required to prepare a cost sheet for the month of April 2020 showing:
(i) Prime Cost
(ii) Works Cost
(iii) Cost of Production
(iv) Cost of Goods sold
(v) Cost of Sales and Profit earned.

Question 37 - Pyq

X Ltd. manufactures two types of pens 'Super Pen' and 'Normal Pen'. The cost data for the year ended 30th September, 2019 is as follows:

	(₹.)
Direct Materials	8,00,000
Direct Wages	4,48,000
Production Overhead	1,92,000
Total	14,40,000

It is further ascertained that :
(1) Direct materials cost in Super Pen was twice as much of direct material in Normal Pen.
(2) Direct wages for Normal Pen were 60% of those for Super Pen.
(3) Production overhead per unit was at same rate for both the types.
(4) Administration overhead was 200% of direct labour for each.
(5) Selling cost was ₹. 1 per Super pen.
(6) Production and sales during the year were as follow :

Production		**Sales**	
	No. of units		No. of units
Super Pen Normal Pen	40,000 1,20,000	Super Pen	36,000

(7) Selling price was ₹. 30 per unit for Super Pen.
Prepare a Cost Sheet for 'Super Pen' showing:
(i) Cost per unit and Total Cost
(ii) Profit per unit and Total Profit

Question 38 - Rtp

A Ltd. produces a single product X. During the month of December 2021, the company has produced 14,560 tonnes of X. The details for the month of December 2021 are as follows:

- Materials consumed ₹ 15,00,000
- Power consumed 13,000 Kwh @ ₹ 7 per Kwh
- Diesels consumed 1,000 litres @ ₹ 93 per litre
- Wages & salary paid – ₹ 64,00,000
- Gratuity & leave encashment paid – ₹ 44,20,000
- Hiring charges paid for HEMM- ₹ 13,00,000
- Hiring charges paid for cars used for official purpose – ₹ 80,000
- Reimbursement of diesel cost for the cars – ₹ 20,000
- The hiring of cars attracts GST under RCM @5% without credit.
- Maintenance cost paid for weighing bridge (used for weighing of final goods at the time of despatch) – ₹ 7,000
- AMC cost of CCTV installed at weighing bridge (used for weighing of final goods at the time of despatch) and factory premises is ₹ 6,000 and ₹ 18,000 per month respectively.
- TA/ DA and hotel bill paid for sales manager- ₹ 16,000
- The company has 180 employees works for 26 days in a month.

Required:
(a) PREPARE a Cost sheet for the month of December 2021.

(b) COMPUTE Earnings per manshift (EMS) and Output per manshift (OMS) for the month of December 2021.

Question 39 - Pyq

The Accountant of KPMR Ltd. has prepared for the following budget for the coming year 2022 for its two products 'AYE' and 'ZYE':

Particulars	**Product 'AYE'**	**Product 'ZYE'**
Production & Sales (in units)	4,000	3,000
	Amount (in ₹)	**Amount (in ₹)**
Selling price per unit	200	180
Direct material per unit	80	70
Direct labour per unit	40	35
Variable overhead per unit	20	25
Fixed overhead per unit	10	10

After reviewing the above budget, the management has called the marketing team for suggesting some measures for increasing the sales. The marketing team has suggested that by promoting the products on social media, the sales quantity of both the products can be increased by 5%. Also, the selling price per unit will go up by 10%. But this will result in increase in expenditure on variable overheads and fixed overhead by 20% and 5% respectively for both the products.

You are required to prepare flexible budget for both the products:

(i) Before promotion on social media,

(ii) After promotion on social media.

Question 40 - Pyq

G Ltd. manufactures leather bags for office and school purposes. The following information is related with the production of leather bags for the month of September 2021.

(1) Leather sheets and cotton clothes are the main inputs and the estimated requirements per bag is two metres of leather sheets and one metre of cotton cloth. 2,000 metre of leather sheets and 1,000 metre of cotton clothes are purchased at ₹ 3,20,000 and ₹ 15,000 respectively. Freight paid on purchases is ₹ 8,500.

(2) Stitching and finishing need 2,000 – man Hours at ₹ 80 per hour.

(3) Other direct costs of ₹ 10 per labour hour is incurred.

(4) G Ltd. have 4 machines at a total cost of ₹ 22,00,000. Machines have a life of 10 years with a scrap value of 10% of the original cost. Depreciation is charged on a straight-line method.

(5) The monthly cost of administration and sales office staffs are ₹ 45,000 and ₹ 72,000 respectively. G Ltd. pays ₹ 1,20,000 per month as rent for a 2,400 sq. feet factory premises. The administrative and sales office occupies 240 sq. feet and 200 sq. feet respectively of factory space.

(6) Freight paid on delivery of finished bags is ₹ 18,000.

(7) During the month, 35 kgs of scrap (cuttings of leather and cotton) are sold at ₹ 150 per kg.

(8) There are no opening and closing stocks of input materials. There is a finished stock of 100 bags in stock at the end of the month.

You are required to prepare cost sheet in respect of above for the month of September 2021 showing:

Cost of raw material consumed.

- Prime Cost
- Works/Factory Cost
- Cost of Production
- Cost of goods sold
- Cost of Sales

Question 41 - Pyq

The following data are available from the books and records of A Ltd. for the month of April 2022:

Particulars	**Amount (₹.)**
Stock of raw materials on 1st April 2022	10,000
Raw materials purchased	2,80,000
Manufacturing wages	70,000
Depreciation on plant	15,000
Expenses paid for quality control check activities	4,000
Lease Rent of Production Assets	10,000

Administrative Overheads (Production)	15,000
Expenses paid for pollution control and engineering & maintenance	1,000
Stock of raw materials on 30th April 2022	40,000
Primary packing cost	8,000
Research & development cost (Process related)	5,000
Packing cost for redistribution of finished goods	1,500
Advertisement expenses	1,300

Stock of finished goods as on 1st April 2022 was 200 units having a total cost of ₹. 28,000.
The entire opening stock of finished goods has been sold during the month.
Production during the month of April, 2022 was 3,000 units. Closing stock of finished goods as on 30th April, 2022 was 400 units.
You are required to:
a) Prepare a Cost Sheet for the above period showing the:

- Cost of Raw Material consumed
- Prime Cost
- Factory Cost
- Cost of Production
- Cost of goods sold
- Cost of Sales

b) Calculate selling price per unit, if sale is made at a profit of 20% on sales.

Question 42 - Mtp

A manufacturing process yields the following products out of the raw materials introduced in the process:
Main Product X 60% of Raw Materials
By-Product Y 15% of Raw Materials
By Product Z 20% of Raw Materials
Wastage 5% of Raw Materials. Other information is as follows: **Total Cost:**
a. Raw Materials 1,000 units of ₹ 9,200;
b. Labour ₹ 8,200;
c. Overheads ₹ 12,000
d. One unit of product z requires ½ the raw materials required for one unit of product Y,
e. One unit of product X requires1½ times the raw materials required for product Y.
f. Product X required double the time needed for production of one unit of Y and one unit of Z.
g. Product Z requires ½ the time required for the production of one unit of product Y.
h. Overheads are to be apportioned in the ratio of 6:1:1.
You are required to CALCULATE the total and per unit of cost of each of the products.

Question 43 - Mtp

The following information is available from SN Manufacturing Limited's books for the month of April 2023.

	April 1	April 30
Opening and closing inventories data:		
Stock of finished goods	2,500 units	?
Stock of raw materials	₹ 42,500	₹ 38,600
Work-in-progress	₹ 42,500	₹ 42,800
Other data are:		
Raw materials purchased		₹ 6,95,000
Carriage inward		₹ 36,200
Direct wages paid		₹ 3,22,800
Royalty paid for production		₹ 35,800
Purchase of special designs, moulds and patterns (estimated life 12 production cycles)		₹ 1,53,600
Power, fuel and haulage (factory)		₹ 70,600
Research and development costs for improving the production process (amortized)		₹ 31,680
Primary packing cost (necessary to maintain quality)		₹ 6,920
Administrative overhead		₹ 46,765
Salary and wages for supervisor and foremen		₹ 28,000

Other Information:

- Opening stock of finished goods is to be valued at ₹ 8.05 per unit.
- During the month of April, 1,52,000 units were produced and 1,52,600 units were sold. The closing stock of finished goods is to be valued at the relevant month's cost of production. The company follows the FIFO method.
- Selling and distribution expenses are to be charged at 20 paisa per unit.
- Assume that one production cycle completed in one month.

Required:

1. Prepare a cost sheet for the month ended on April 30, 2023, showing the various elements of cost (raw material consumed, prime cost, factory cost, cost of production, cost of goods sold, and cost sales.)
2. Calculate the selling price per unit if profit is charged at 20 percent on sales.

COST ACCOUNTING SYSTEM

Question 1 - Study Material

The following figures are extracted from the Trial Balance of Go-getter Co. on 30th September, 2020:

	Dr. (Rs)	Cr. (Rs)
Inventories:		
· Finished Stock	80,000	
· Raw Materials	1,40,000	
· Work-in-Process	2,00,000	
Office Appliances	17,400	
Plant & Machinery	4,60,500	
Building	2,00,000	
Sales		7,68,000
Sales Return and Rebates	14,000	
Materials Purchased	3,20,000	
Freight incurred on Materials	16,000	
Purchase Returns		4,800
Direct employee cost	1,60,000	
Indirect employee cost	18,000	
Factory Supervision	10,000	
Repairs and factory up-keeping expenses	14,000	
Heat, Light and Power	65,000	
Rates and Taxes	6,300	
Miscellaneous Factory Expenses	18,700	
Sales Commission	33,600	
Sales Travelling	11,000	
Sales Promotion	22,500	
Distribution Deptt.—Salaries and Expenses	18,000	
Office Salaries and Expenses	8,600	
Interest on Borrowed Funds	2,000	

Further details are as follows :

(i) Closing inventories :

Finished goods	1,15,000
Raw Materials	1,80,000
Work – in – progress	1,92,000

(ii) Outstanding Expenses on :

Direct employee cost	8,000
Indirect employee cost	1,200
Interest on borrowed funds	2,000

(iii) Depreciation to be provided on :

Office Appliances	5%
Plant & Machinery	10%
Buildings	4%

(iv) Distribution of the following costs :

Heat, Light and Power to Factory, Office and distribution in the ratio 8:1:1.

Rates and taxes two – thirds to factory, and one – third to office.

Depreciation on buildings to Factory, Office and Selling in the ratio 8:1:1.

With the help of the above information , you are required to prepare a condensed Prepare a condensed Profit and Loss statement of Go- getter Co. for the year ended 30th September, 2020 along with supporting schedules of :

(i) Cost of Sales.

(ii) Selling & Distribution Expenses.

(iii) Administration Expenses.

Question 2 - Study Material

As on 31st March, 2008 the following balances existed in a firm's Cost Ledger:

Particulars	Dr. (₹)	Cr. (₹)
Stores Ledger Control A/c	3,01,435	
Work-in-Progress Control A/c	1,22,365	
Finished Stock Ledger Control A/c	2,51,945	
Manufacturing Overhead Control A/c		10,525
Cost Ledger Control A/c		6,65,220
	6,75,745	6,75,745

During the next three months the following items arose:

Particulars	Amount (₹)
Finished product (at cost)	2,10,835
Manufacturing overhead incurred	91,510
Raw materials purchased	1,23,000
Factory Wages	50,530
Indirect Labour	21,665
Cost of Sales	1,85,890
Material issued to production	1,27,315
Sales returned at Cost	5,380
Material returned to suppliers	2,900
Manufacturing overhead charged to production	77,200

You are required to pass the journal Entries, write up the accounts and schedule the balances, stating what each balance represents.

Solution 2:

Journal entries are as follows:

Particulars	Dr. (₹)	Cr. (₹)
1. Finished stock ledger Control A/c Dr. To Work-in-progress Control A/c	2,10,835	 2,10,835
2. Manufacturing Overhead Control A/c Dr. To Cost Ledger Control A/c	91,510	 91,510
3. Stores Ledger Control A/c Dr. To Cost Ledger Control A/c	1,23,000	 1,23,000
4. (i) Wage Control A/c Dr. To Cost Ledger Control A/c (ii) Work-in-progress Control A/c Dr. To Wage Control A/c (iii) Manufacturing Overhead Control A/c Dr. To Wage Control A/c	72,195 50,530 21,665	 72,195 50,530 21,665
5. Cost of Sales A/c Dr. To Finished Stock Ledger A/c	1,85,890	 1,85,890
6. Work-in-Progress Control A/c Dr. To Stores Ledger Control A/c	1,27,315	 1,27,315
7. Finished Stock Ledger Control A/c Dr. To Cost of Sales A/c	5,380	 5,380
8. Cost Ledger Control A/c Dr. To Stores Ledger Control A/c	2,900	 2,900
9. Work-in-Progress Control A/c Dr. To Manufacturing Overhead Control A/c	77,200	 77,200

COST LEDGER

Cost Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)

To Stores Ledger Control A/c (return)	2,900	By Balance b/d	6,65,220
To Balance c/d	9,49,025	By Manufacturing Overhead Control A/c	91,510
		By Stores Ledger Control A/c	1,23,000
		By Wage Control A/c	72,195
	9,51,925		9,51,925

Stores Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	3,01,435	By Work-in-Progress Control A/c	1,27,315
To Cost Ledger Control A/c	1,23,000	By Cost Ledger Control A/c	2,900
		By Balance c/d	2,94,220
	4,24,435		4,24,435

Work-in-Progress Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,22,365	By Finished Stock Ledger Control A/c	2,10,835
To Wage Control A/c	50,530	By Balance c/d	1,66,575
To Stores Ledger Control A/c	1,27,315		
To Manufacturing Overhead Control A/c	77,200		
	3,77,410		3,77,410

Finished Stock Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	2,51,945	By Cost of Sales A/c	1,85,890
To Work-in-Progress Control A/c	2,10,835	By Balance c/d	2,82,270
To Cost of Sales A/c (return at cost)	5,380		
	4,68,160		4,68,160

Manufacturing Overhead Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost Ledger Control A/c	91,510	By Balance b/d	10,525
To Wage Control A/c	21,665	By Work-in-Progress Control A/c	77,200
		By Balance c/d (under recovered)	25,450
	1,13,175		1,13,175

Wage Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost Ledger Control A/c	72,195	By Work-in-Progress Control A/c	50,530
		By Manufacturing Overhead Control A/c	21,665
	72,195		72,195

Cost of Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Finished Stock Ledger Control A/c	1,85,890	By Finished Stock Ledger Control A/c (Return)	5,380
		By Balance c/d	1,80,510
	1,85,890		1,85,890

Trial Balance

Particulars	Dr. (₹)	Cr. (₹)
Stores Ledger Control A/c	2,94,220	
Work-in-Progress Control A/c	1,66,575	
Finished Stock Ledger Control A/c	2,82,270	
Manufacturing Overhead Control A/c	25,450	
Cost of Sales A/c	1,80,510	
Cost Ledger Control A/c		9,49,025
	9,49,025	9,49,025

Question 3 - Study Material

JOURNALISE the following transactions assuming that cost and financial transactions are integrated:

Particulars	₹
Raw materials purchased	2,00,000
Direct materials issued to production	1,50,000
Wages paid (30% indirect)	1,20,000
Wages charged to production	84,000
Manufacturing expenses incurred	84,000
Manufacturing overhead charged to production	92,000
Selling and distribution costs	20,000
Finished products (at cost)	2,00,000
Sales	2,90,000
Closing stock	Nil
Receipts from debtors	69,000
Payments to creditors	1,10,000

Question 4 - Pyq

Pass Journal Entries under Non-Integrated System for the following transaction-

- Issue of Materials: Direct ₹ 5,50,000, Indirect ₹ 1,50,000.
- Materials worth ₹ 45,000 returned to Stores from Production Floor.
- Gross Wages paid ₹ 48,000, Employer's Contribution to PF and ESI amount to ₹ 2,000. Wage Analysis sheet shows ₹ 20,000 towards Direct Labour, ₹ 12,000 towards Indirect Factory Labour, ₹ 10,000 towards Salaries to Office Staff and ₹ 8,000 for Salaries to Sales Staff.
- Production Overhead incurred ₹ 1,40,000, Absorbed ₹ 2,65,000.
- During physical verification of Stores, it was found that 100 units of Raw Materials returned to the Supplier has not been recorded. Its Purchase Invoice Price is ₹ 50 per unit, while the current Standard Cost is ₹ 48 per unit. [The Company policy is to written off/adjust the differences in Costing P & L A/c.]

Solution 4:

	Particulars	Dr.	Cr.
1	Work-in-Progress Control A/c Dr. Production OH Control A/c Dr. To Raw Materials Control A/c (Being Raw Materials issued for Direct and Indirect purposes.)	5,50,000 1,50,000	 7,00,000
2	Raw Materials Control A/c Dr. To Work-in-Progress Control A/c (Being Materials returned to Stores from Production Floor.)	45,000	 45,000

3	Wages Control A/c Dr. To General Ledger Adjustment A/c (Being Wages paid ₹ 48,000 + Employers' Contribution to PF and ESI ₹ 2,000 = Total Labour Cost ₹ 50,000)	50,000	 50,000
4	Work-in-Progress Control A/c Dr. Production OH Control A/c Dr. Administrative OH Control A/c Dr. Selling & Distribution OH Control A/c Dr. To Wages Control A/c (Being Wages analyzed as ₹ 20,000 towards Direct Labour, ₹ 12,000 towards Indirect Factory Labour, ₹ 10,000 towards Salaries to Office Staff and ₹ 8,000 for Salaries to Sales Staff.)	20,000 12,000 10,000 8,000	 50,000
5	Production OH Control A/c Dr. To General Ledger Adjustment A/c (Being Production OH incurred)	1,40,000	 1,40,000
6	Work-in-Progress Control A/c Dr. To Production OH Control A/c (Being Production OH absorbed)	2,65,000	 2,65,000
7	Costing P & L A/c Dr. To Production OH Control A/c (Being under absorption transferred to Costing P & L Account)	37,000	 37,000
8	General Ledger Adjustment A/c (₹ 50 × 100 units) Dr. To Ram Material Control A/c [at Standard Cost] (₹ 48 × 100 units) To Costing P & L A/c (Variance written off/written back) (Being Materials returned to Supplier, price difference adjusted in Costing P & L)	5,000	 4,800 200

Notes:

- It is assumed that sufficient stock of RM is available for issue.
- Difference in absorption is ignored. Alternatively, difference in absorption can be transferred to Costing P & L A/c, after preparing the POH Control A/c as indicated below.

Production Overheads Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Raw Material Control – Indirect Materials	1,50,000	By WIP Control – POH absorption	2,65,000
To Wages Control –Indirect wages	12,000	By Costing P & L A/c –transfer (Balancing Figure)	37,000
To General Ledger Adjustment – POH incurred	1,40,000		
	3,02,000		3,02,000

Non Integrated System – Various Ledger Accounts

Question 5 - Study Material

Acme Manufacturing Co. Ltd. opens the costing records, with the balances as on 1st July, 20X8 as follows:

	(₹)	(₹)
Material Control A/c	1,24,000	
Work-in-Process Control A/c	62,500	
Finished Goods Control A/c	1,24,000	
Production Overhead Control A/c	8,400	
Administrative Overhead Control A/c		12,000
Selling & Distribution Overhead Control A/c	6,250	
Cost Ledger Control A/c		3,13,150
	3,25,150	3,25,150

The following are the transactions for the quarter ended 30th September 20X8:

Particulars	(₹)
Materials purchased	4,80,100
Materials issued to jobs	4,77,400
Materials to works maintenance	41,200
Materials to administration office	3,400
Materials to selling department	7,200
Wages direct	1,49,300
Wages indirect	65,000
Transportation for indirect materials	8,400
Production overheads	2,42,250
Absorbed production overheads	3,59,100
Administration overheads	74,000
Administration allocation to production	52,900
Administration allocation to sales	14,800
Sales overheads	64,200
Sales overheads absorbed	82,000
Finished goods produced	9,58,400
Finished goods sold	9,77,300
Sales	14,43,000

Make up the various accounts as you envisage in the Cost Ledger and PREPARE a Trial Balance as at 30th September, 20X8.

Question 6 - Pyq

The following balances were extracted from a company's ledger as on 31st December, 1997:

Particulars	Amount (₹)	Amount (₹)
Raw materials control A/c	48,836	
Work-in-progress control A/c	14,745	
Finished stock control A/c	21,980	
Nominal ledger control A/c		85,561
	85,561	85,561

Further transactions took place during the following quarter as follows:

Particulars	Amount (₹)
Factory overhead – allocated to WIP	11,786
Goods finished – at cost	36,834
Raw materials purchased	22,422
Direct wages – allocated to WIP	18,370
Cost of goods sold	42,000
Raw materials – issued to production	17,000
Raw materials – credited by suppliers	1,000
Inventory audit – raw materials losses	1,300
WIP rejected (with no scrap value)	1,800
Customer's returns (at cost) of finished goods	3,000

Prepare all Leger Accounts in Cost Leger.

Solution 6:

Raw Materials Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	48,836	By W.I.P. control A/c	17,000
To Nominal ledger control A/c	22,422	By Nominal ledger control A/c	1,000

		By Nominal ledger control A/c	1,300
		By Balance c/d	51,958
	71,258		71,258

Work-in-Progress Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	14,745	By Finishing stock control A/c	36,834
To Nominal ledger control A/c	11,786	By Nominal ledger control A/c	1,800
To Raw material control A/c	17,000	By Balance c/d	23,267
To Nominal ledger control A/c	18,370		
	61,901		61,901

Finished Stock Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	21,980	By Nominal ledger control A/c	42,000
To W.I.P. Control A/c	36,834	By Balance c/d	19,814
To Nominal ledger control A/c	3,000		
	61,814		61,814

Nominal Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Raw material control A/c	1,000	By Balance b/d	85,561
To Raw material control A/c	1,300	By Raw material control A/c	22,422
To Finished stock control A/c	42,000	By W.I.P. control A/c	11,786
To W.I.P. Control A/c	1,800	By W.I.P. control A/c	18,370
To Balance c/d	95,039	By Finishing stock control A/c	3,000
	1,41,139		141139

Treatment of Selling Overhead and Administration Overhead as Period Costs

Question 7 - Study Material, Pyq

On 31st March, 2008 the following balances were extracted from the books of the Supreme Manufacturing Company:

Particulars	Dr. (₹)	Cr. (₹)
Stores Ledger Control A/c	35,000	
Work-in-Progress Control A/c	38,000	
Finished Goods Control A/c	25,000	
Cost Ledger Control A/c		98,000
	98,000	98,000

The following transactions took place in April 2008:

Particulars	Amount (₹)
Raw Materials:	
Purchased	95,000
Returned to Suppliers	3,000
Issued to Production	98,000
Returned to Stores	3,000
Productive Wages	40,000
Indirect Labour	25,000
Factory overhead expenses incurred	50,000
Selling and Administrative expenses	40,000
Cost of finished goods transferred to warehouse	2,13,000
Cost of Goods sold	2,10,000

Sales	3,00,000

Factory overheads are applied to production at 150% of direct wages, any under/over absorbed overhead being carried forward for adjustment in the subsequent months. All administrative and selling expenses are treated as period costs and charged off to the Profit and Loss Account of the month in which they are incurred.

Show the following Accounts:

(a) Cost Ledger Control A/c
(b) Stores Ledger Control A/c
(c) Work-in-Progress Control A/c
(d) Finished Goods Stock Control A/c
(e) Factory Overhead Control A/c
(f) Costing Profit & Loss A/c
(g) Trial Balance as at 30th April, 2008.

Solution 7:

(a) Cost Ledger Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Costing Profit & Loss A/c (Sales)	3,00,000	By Balance b/d	98,000
To Stores Ledger Control A/c	3,000	By Stores Ledger Control A/c	95000
To Balance c/d	95,000	By Wages Control A/c (Productive wages + Indirect wages)	65000
		By Factory Overhead Control A/c	50,000
		By Selling & Administration Overhead Expenses	40,000
		By Costing Profit & Loss A/c	50,000
	3,98,000		3,98,000

(b) Stores Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	35,000	By Cost Ledger Control A/c	3,000
To Cost Ledger Control A/c	95,000	By Work-in-Progress Control A/c	98,000
To Work-in-Progress Control A/c	3,000	By Balance c/d	32,000
	1,33,000		1,33,000

(c) Work-in-Progress Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	38,000	By Stores Ledger Control A/c	3,000
To Stores Ledger Control A/c	98,000	By Finished Goods A/c	2,13,000
To Wages Control A/c	40,000	By Balance c/d	20,000
To Factory Overhead Control A/c	60,000		
	2,36,000		2,36,000

(d) Finished Goods Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	25,000	By Cost of goods sold A/c	2,10,000
To Work-in-Progress Control A/c	2,13,000	By Balance c/d	28,000
	2,38,000		2,38,000

(e) Factory Overhead Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Wage Control A/c (Indirect Labour)	25,000	By Work-in-Progress A/c (150% of ₹40,000)	60,000
To Cost Ledger Control A/c	50,000	By Balance c/d	15,000

	75,000		75,000

(f) Costing Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost of Goods Sold A/c	2,10,000	By Cost Ledger Control A/c (Sales)	3,00,000
To Selling and Administration Overhead A/c	40,000		
To Cost Ledger Control A/c (Costing profit - balancing fig.)	50,000		
	3,00,000		3,00,000

(g) Trial Balance (as at 30th April, 2008)

Particulars	Amount (₹)	Particulars	Amount (₹)
To Stores Ledger Control A/c	32,000		
To Work-in-Progress Control A/c	20,000		
To Finished Goods Control A/c	28,000		
To Factory Overhead Control A/c	15,000	By Cost Ledger Control A/c	95,000
	95,000		95,000

Working Notes:

(1) Wages Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost Ledger Control A/c	65,000	By Work-in-Progress Control A/c	40,000
		By Factory Overhead Control A/c	25,000
	65,000		65,000

(2) Cost of Goods Sold Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Finished Goods Control A/c	2,10,000	By Costing Profit & Loss A/c	2,10,000
	2,10,000		2,10,000

(3) Selling & Administrative Expenses Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost Ledger Control A/c	40,000	By Costing Profit & Loss A/c	40,000
	40,000		40,000

Completion of Accounts – Incomplete Records

Question 8 - Pyq, Study Material

A fire destroyed some accounting records of Unfortunate Ltd. You have been able to collect the following from the spoilt papers/ records and as a result of consultation with accounting staff in respect of January.

Incomplete Ledger Entries:

Raw-Materials Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	32,000		

Work-in-Progress Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	9,200	By Finished Goods Control A/c	1,51,000

Payables (Creditors) Account

Particulars	Amount (₹)	Particulars	Amount (₹)
		By Balance b/d	16,400
To Balance c/d	19,200		

Manufacturing Overheads Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost Ledger Control A/c (Amount Spent)	29,600		

Finished Goods Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	24,000	By balance c/d	30,000

Additional Information:

- The Cashbook showed that ₹ 89,200 have been paid to Creditors for Raw Material.
- Ending inventory of Work-in-Progress included Material ₹ 5,000 on which 300 Direct Labour Hours have been booked against Wages and Overheads.
- The Job Card showed that workers have worked for 7,000 hours. The Wage Rate is ₹ 10 per Labour Hour.
- Overhead Recovery Rate was ₹ 4 per Direct Labour Hour.

You are required to complete the above accounts in the Cost Ledger of the Company.

Solution 8:

(Materials) Stores Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	32,000	By WIP Control A/c (RM issued to Production)	53,000
To Cost Ledger Control (RM Purchases) Taken from Memorandum Creditors A/c	92,000	Taken from WIP Control A/c	
		By balance c/d (balancing figure)	71,000
	1,24,000		1,24,000

Memorandum Creditors Account (to calculate Purchases)

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cash/ Bank (amount paid to Creditors)	89,200	By balance b/d	16,400
		By Stores Ledger Control (RM Purchases) (Bal. Figure)	92,000
To balance c/d	19,200		
	1,08,400		1,08,400

Manufacturing OH Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost Ledger Control A/c (OH incurred)	29,600	By WIP Control A/c (OH absorbed) = 7,000 hours at ₹ 4 per hour	28,000
		By balance c/d (balancing figure)	1,600
	29,600		29,600

Work-in-Progress Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	9,200	By Finished Goods Control A/c (Production	1,51,000
To Stores Ledger Control (RM Issues) (b/f)	53,000	By balance c/d	9,200
To Wages Control A/c (7,000 hours at ₹ 10)	70,000		

To POH Control (Absorbed) (7,000 hours at ₹ 4)	28,000		
	1,60,200		1,60,200

Value of Closing WIP = Materials ₹ 5,000 + Labour 300 hours at ₹ 10 + OH 300 hours at ₹ 4 = ₹ 9,200.

Finished Goods Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	24,000	By Cost of Sales A/c (COGS Transfer)	1,45,000
To WIP Control A/c (FG Production)	1,51,000	By balance c/d	30,000
	1,75,000		1,75,000

Question 9 - Study Material

The following incomplete accounts are furnished to you for the month ended 31st October, 20X8.

Stores Ledger Control Account

1.10.20X8 To Balance ₹ 54,000

Work in Process Control Account

1.10.20X8 To Balance ₹ 6,000

Finished Goods Control Account

1.10.20X8 To Balance ₹ 75,000

Factory Overheads Control Account

Total debits for October, 20X8 ₹ 45,000

Factory Overheads Applied Account

Cost of Goods Sold Account

Creditors for Purchases Account

1.10. 20X8 By Balance ₹ 30,000

Additional information:

(i) The factory overheads are applied by using a budgeted rate based on direct labour hours. The budget for overheads for 20X8 is ₹ 6,75,000 and the budget of direct labour hours is 4,50,000.

(ii) The balance in the account of creditors for purchases on 31.10.20X8 is ₹ 15,000 and the payments made to creditors in October, 20X8 amount to ₹ 1,05,000.

(iii) The finished goods inventory as on 31st October, 20X8 is ₹ 66,000.

(iv) The cost of goods sold during the month was ₹ 1,95,000.

(v) On 31st October, 20X8 there was only one unfinished job in the factory. The cost records show that ₹ 3,000 (1,200 direct labour hours) of direct labour cost and ₹ 6,000 of direct material cost had been charged.

(vi) A total of 28,200 direct labour hours were worked in October, 20X8. All factory workers earn same rate.

(vii) All actual factory overheads incurred in October, 20X8 have been posted.

You are required to FIND:

a) Materials purchased during October, 20X8.

b) Cost of goods completed in October, 20X8.

c) Overheads applied to production in October, 20X8.

d) Balance of Work-in-process Control A/c on 31st October, 20X8.

e) Direct materials consumed during October, 20X8.

f) Balance of Stores Ledger Control Account on 31st October, 20X8.

g) Over absorbed or under absorbed overheads for October, 20X8.

Sales and Gross Profit Margin

Question 10 - Pyq

A company operates separate cost accounting and financial accounting system. The following is the list of Opening balance as on 1.04.2001 in the Cost Ledger.

Particulars	Debit (₹)	Credit (₹)
Stores Ledger Control Account	53,375	-
WIP Control Account	1,04,595	-

Finished Goods Control Account	30,780	-
General Ledger Adjustment Account	-	1,88,750

Transactions for the quarter ended 30.06.2001 are as under:

Particulars	**Amount (₹)**
Materials Purchased	26,700
Materials issued to Production	40,000
Materials issued for Factory Repairs	900
Factory Wages Paid (Including Indirect Wages ₹ 23,000)	77,500
Production Overheads incurred	95,200
Production Overheads under-absorbed and written off	3,200
Sales	2,56,000

The Company's gross profit is 25% on Factory Cost. At the end of the quarter, WIP stocks increased by ₹ 7,500. Prepare the relevant Control Accounts, Costing Profit and Loss Account and General Leger Adjustment Account to record the above transactions for the quarter ended 30.06.2001.

Solution 10:

General Ledger Adjustment Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Sales	2,56,000	By Balance b/d	1,88,750
To Balance c/d	1,80,150	By Stores ledger control A/c	26,700
		By Wages control A/c	77,500
		By Overheads control A/c	95,200
		By Costing Profit & Loss A/c	48,000
	4,36,150		4,36,150

Stores Ledger Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	53,375	By WIP control A/c	40,000
To General ledger adjustment A/c	26,700	By Factory overhead control A/c	900
		By Balance c/d	39,175
	80,075		80,075

WIP Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	1,04,595	By Finished goods control A/c	2,02,900
To Stores ledges control A/c	40,000	By Balance c/d	1,12,095
To Wages control A/c	54,500		
To Factory O/H control A/c	1,15,900		
	3,14,995		3,14,995

Finished Goods Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	30,780	By Cost of sales A/c	2,04,800
To WIP control A/c	2,02,900	By Balance c/d	28,880
	2,33,680		2,33,680

Gross profit is 25% on Factory cost on 20% on sales.

Hence cost of sales = ₹ 2,56,000 - 20% of ₹ 2,56,000 = ₹ 2,04,800

Factory Overhead Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Stores ledger control A/c	900	By Costing Profit & Loss A/c	3,200
To Wages control A/c	23,000	By WIP control A/c	1,15,900
To General Ledger Adjustment A/c	95,200		
	1,19,100		1,19,100

Cost of Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Finished goods control A/c	2,04,800	By Costing Profit & Loss A/c	2,04,800
	2,04,800		2,04,800

Wages Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To General ledger adjustment A/c	77,500	By Factory overhead control A/c	23,000
		By WIP control A/c	54,500
	77,500		77,500

Costing Profit & Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Factory OH Control A/c	3,200	By GLA A/c	2,56,000
To Cost of sales A/c	2,04,800		
To General ledger adjustment A/c (Profit)	48,000		
	2,56,000		2,56,000

Trial Balance (as on 30.06.2001)

Particulars	Amount (₹)	Particulars	Amount (₹)
To Stores ledger control A/c	39,175		
To WIP control A/c	1,12,095		
		By General ledger	
To Finished goods control A/c	28,880	adjustment A/c	1,80,150
	1,80,150		1,80,150

Non Integrated System and Reconciliation

Question 11 - Pyq

The following figures have been extracted from the cost records of a manufacturing company:

Particulars	Amount (₹)
Stores	
Opening Balance	63,000
Purchases	3,36,000
Transfer from Work-in-progress	1,68,000
Issue to Work-in-progress	3,36,000
Issue to Repairs and Maintenance	42,000
Deficiencies found in Stock taking	12,600
Work-in-progress:	
Opening Balance	1,26,000
Direct Wages applied	1,26,000
Overhead Applied	5,04,000
Closing Balance	84,000

Finished Products: Entire output is sold at Profit of 10% on actual cost from work-in-progress.
Other: Wages incurred ₹ 1,47,000; Overhead incurred ₹ 5,25,000.
Income from investment ₹ 21,000; Loss on sale of Fixed Assets ₹ 42,000.
Draw the stores control account, work in progress control account, costing profit and loss account, profit and loss account and reconciliation statement.

Solution 11:

Stores Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance c/d	63,000	By Work-in-progress	3,36,000
To General Ledger Adjustment A/c	3,36,000	By Overhead A/c	42,000
To work-in-progress A/c	1,68,000	By Overhead A/c (Deficiency Assumed as Normal)	12,600
		By Balance c/d	1,76,400
	5,67,000		5,67,000

Work-in-Progress Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,26,000	By Stores Ledger Control A/c	1,68,000
To Stores Ledger Control A/c	3,36,000	By Costing Profits & Loss A/c (Finished goods at cost	
To Work-in-progress A/c	1,26,000	Balancing figure)	8,40,000
To Overhead A/C (applied)	5,04,000	By Balance c/d	84,000
	10,92,000		10,92,000

Costing Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Work-in-Progress A/c	8,40,000	By General Ledger Adjustment A/c (Sales)	
To General Ledger Adjustment A/c (Profit)	84,000	(8,40,000 + 84,000)	9,24,000
	9,24,000		9,24,000

Financial Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Opening Stock		By Sales	9,24,000
Stores 63,000		By Income from investment	21,000
WIP 1,26,000	1,89,000	By Closing Stock	
		Stores 1,76,400	
To Purchases	3,36,000	WIP 84,000	2,60,400
To Wages	1,47,000	By Loss	33,600
To Overhead	5,25,000		
To Loss on sale of fixed Assets	42,000		
	12,39,000		12,39,000

Reconciliation Statement

Particulars	Amount (₹)
Profit as per Cost Account	84,000
Add: Income from investment	21,000
	1,05,000

Less: Under absorption of overhead	96,600	
Loss on sale of fixed assets	42,000	1,38,600
Loss as per Financial Accounts		33,600

Note: Deficiency in stock taking May be treated as abnormal loss and it can be transferred from stores ledger Control Account to Costing Profit Account. Then consequential changes in accounting entries in overheads Control Account has to be done.

Working Notes:

Overheads Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Stores Ledger Control A/c	42,000	By Working in Progress	5,04,000
To Stores Ledger Control A/c	12,600	By Balanced c/d	96,600
To Wages Control A/c Indirect Wages (1,47,000 – 1,26,000)	21,000		
To General Ledger Adjustment A/c	5,25,000		
	6,00,600		6,00,600

Solution 11:

Stores Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance c/d	63,000	By Work-in-progress	3,36,000
To General Ledger Adjustment A/c	3,36,000	By Overhead A/c	42,000
To work-in-progress A/c	1,68,000	By Overhead A/c (Deficiency Assumed as Normal)	12,600
		By Balance c/d	1,76,400
	5,67,000		5,67,000

Work-in-Progress Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,26,000	By Stores Ledger Control A/c	1,68,000
To Stores Ledger Control A/c	3,36,000	By Costing Profits & Loss A/c (Finished goods at cost	
To Work-in-progress A/c	1,26,000	Balancing figure)	8,40,000
To Overhead A/C (applied)	5,04,000	By Balance c/d	84,000
	10,92,000		10,92,000

Costing Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Work-in-Progress A/c	8,40,000	By General Ledger Adjustment A/c (Sales)	
To General Ledger Adjustment A/c (Profit)	84,000	(8,40,000 + 84,000)	9,24,000
	9,24,000		9,24,000

Financial Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Opening Stock		By Sales	9,24,000
Stores 63,000		By Income from investment	21,000
WIP 1,26,000	1,89,000	By Closing Stock	
To Purchases	3,36,000	Stores 1,76,400	
To Wages	1,47,000	WIP 84,000	2,60,400

To Overhead	5,25,000	By Loss	33,600
To Loss on sale of fixed Assets	42,000		
	12,39,000		12,39,000

Reconciliation Statement

Particulars	**Amount (₹)**
Profit as per Cost Account	84,000
Add: Income from investment	21,000
	1,05,000
Less: Under absorption of overhead 96,600	
Loss on sale of fixed assets 42,000	1,38,600
Loss as per Financial Accounts	33,600

Note: Deficiency in stock taking May be treated as abnormal loss and it can be transferred from stores ledger Control Account to Costing Profit Account. Then consequential changes in accounting entries in overheads Control Account has to be done.

Working Notes:

Overheads Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Stores Ledger Control A/c	42,000	By Working in Progress	5,04,000
To Stores Ledger Control A/c	12,600	By Balanced c/d	96,600
To Wages Control A/c			
Indirect Wages (1,47,000 – 1,26,000)	21,000		
To General Ledger Adjustment A/c	5,25,000		
	6,00,600		6,00,600

Question 12 - Pyq

Following information has been extracted from the records of XYZ Pvt. Ltd.:

Stores:	₹
Opening balance	54,000
Purchases	2,88,000
Transfer from WIP	1,44,000
Issue to WIP	2,88,000
Issue for repairs	36,000
Deficiency found in stock	10,800
Work in Progress:	
Opening balance	1,08,000
Direct wages applied	1,08,000
Overheads charged	4,32,000
Closing balance	72,000
Finished Production:	
Entire production is sold at a profit of 15% on cost	at WIP
Wages paid	1,26,000
Overheads incurred	4,50,000

Draw the stores ledger control A/c, WIP control A/c, Overheads Control A/c and Costing Profit & Loss Account.

Question 13 - Pyq

You are given the following information of the Cost Department of a Manufacturing Company:

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
Stores:		Work-in-Progress:	
Opening Balance	12,60,000	Opening Balance	25,20,000
Purchases	67,20,000	Direct Wages applied	25,20,000
Transfer from Work-in-Progress	33,60,000	Overhead applied	90,08,000
Issue to Work-in-Progress	67,20,000	Closing Balance	15,20,000

Issue to Repairs and Maintenance	840,000		
Shortage found in stock taking	2,52,000		

Finished Products: Entire output is sold at a profit of 12% on actual cost from work-in-progress.
Others information: Wages incurred ₹ 29,40,000, Overhead Incurred ₹ 95,50,000.
Income from Investments – ₹ 4,00,000, Loss on sale of Fixed Assets ₹ 8,40,000.
Shortage in stock taking is treated as normal loss.
You are required to prepare –
(a) Stores Control Account, (b) Work-in-Progress Control Account, (c) Costing P & L Account, (d) Profit & Loss Account, and (e) Reconciliation Statement.

Reverse Working – Reconciliation – Non Integrated Accounts Ledger Preparation

Question 14 - Pyq

ABC Pvt. Ltd. has furnished its profit and Loss account for the year ended 31st March, 2009 and also given a statement showing reconciliation between the profit as per financial records and cost records. The profit and Loss account is given below:

Profit and Loss Account for the year ended 31st March, 2009

Particulars	Amount (₹)	Particulars	Amount (₹)
To Opening Stock:		By Sales	17,80,000
Raw Materials	95,500	By Closing Stock:	
W.I.P	45,000	Raw Materials	99,000
Finished goods	78,000	W.I.P	58,000
To Purchases	6,42,000	Finished goods	80,000
To Direct wages	2,22,000	By Dividend received on Shares	1,65,000
To Factory overheads	2,45,000		
To Administrative expenses	1,98,500		
To Selling expenses	3,42,000		
To Goodwill written off	80,000		
To Interest on loans	50,000		
To Legal charges	42,000		
To Net profit	1,42,000		
	21,82,000		21,82,000

Reconciliation Statement as at 31st March, 2009 is given below:

Particulars	Amount (₹)	Amount (₹)
Profits as per financial records		1,42,000
Add:		
Raw Material – Closing stock	1,500	
W.I.P. – Opening Stock	2,000	
Finished goods – Operating Stock	3,000	
Finished goods – Closing Stock	1,000	
Goodwill written off	80,000	
Interest on loans	50,000	
Legal charges	42,000	1,79,500
		3,21,500
Less:		
Raw Material – Opening Stock	2,500	
W.I.P. – Closing Stock	3,500	
Dividend received on shares	1,65,000	1,71,000
Profits as per cost records		1,50,500

You are required to draw up the following accounts in the cost ledger of ABC Pvt. Ltd.:
(i) Material control Account
(ii) W.I.P. Control Account

(iii) Finished goods control Account
(iv) Cost of sales Account
(v) Costing profit and loss Account

Treatment of Gross Profit Margin, Capital WIP and Royalty Payment

Question 15 - Rtp (Similar), Study Material

A Company operates on historic cost accounting system, which is not integrated with the financial accounts. At the beginning of a month, the Opening Balances in Cost Ledger were – (In ₹ Lakhs)

Stores Ledger Control Account	80
Work-in-Progress Control Account	20
Finished Goods Control Account	430
Building Construction Account	10

Credit Balance in the Cost Ledger Control A/c at the beginning of the month was ₹ 540 Lakhs.
During the month, the following transactions took place (₹ in lakhs)

Materials	Purchased	40
	Issued to Production	50
	Issued to Factory Maintenance	6
	Issued to Building Construction	4
Wages	Gross Wages Paid	150
	Indirect Wages	40
	For Building Construction	10
Works Overheads	Amount Incurred (excluding items shown above)	160
	Absorbed Building Construction	20
	Under – absorbed	8
Other Items	Royalty paid (related to production)	5
	Selling, distribution and Administration OH	25
	Sales	450

At the end of the month, the stock of Raw Material and WIP was ₹ 55 Lakhs and ₹ 25 Lakhs respectively. The loss arising in the Raw Material Account is treated as Factory Overheads. The Building under Construction was completed during the month. Company's Gross Profit Margin is 20% on Sales. Prepare the relevant Control Accounts to record the above transactions in the Cost Ledger of the Company.

Question 16 - Rtp

XYZ Ltd. maintains a non-integrated accounting system for the purpose of management information. The following are the data related with year 2020-21:

Particulars	**(Rs in '000)**
Opening balances:	
- Stores ledger control A/c	24,000
- Work-in-process control A/c	6,000
- Finished goods control A/c	1,29,000
- Building construction A/c	3,000
- Cost ledger control A/c	1,62,000
During the year following transactions took place:	
Materials:	
- Purchased	12,000
- Issued to production	15,000
- Issued to general maintenance	1,800
- Issued to building construction	1,200
Wages:	
- Gross wages paid	45,000

- Indirect wages paid	12,000
- For building construction	3,000
Factory overheads:	
- Actual amount incurred (excluding items shown above)	48,000
- Absorbed in building construction	6,000
- Under-absorbed	2,400
Royalty paid	1,500
Selling, distribution and administration overheads	7,500
Sales	1,35,000

At the end of the year, the stock of raw material and work-in-process was Rs 1,65,00,000 and Rs 75,00,000 respectively. The loss arising in the raw material account is treated as factory overheads. The building under construction was completed during the year. Gross profit margin is 20% on sales.
Required:
PREPARE the relevant control accounts to record the above transactions in the cost ledger of the company.

Question 17 - Rtp

X Ltd. maintains a non-integrated accounting system for the purpose of management information. The following are the data related with year 2021 -22:

Particulars	**Amount ('000)**
Opening balances:	
- Stores ledger control A/c	48,000
- Work-in-process control A/c	12,000
- Finished goods control A/c	2,58,000
- Building construction A/c	6,000
- Cost ledger control A/c	3,24,000
During the year following transactions took place:	
Materials:	
- Purchased	24,000
- Issued to production	30,000
- Issued to general maintenance	3,600
- Issued to building construction	2,400
Wages:	
- Gross wages paid	90,000
- Indirect wages paid	24,000
- For building construction	6,000
Factory overheads:	
- Actual amount incurred (excluding items shown above)	96,000
- Absorbed in building construction	12,000
- Under-absorbed	4,800
Royalty paid	3,000
Selling distribution and administration overheads	15,000
Sales	2,70,000

At the end of the year, the stock of raw material and work-in-process was Rs 3,30,00,000 and Rs 15,00,000 respectively. The loss arising in the raw material account is treated as factory overheads. The building under construction was completed during the year. Gross profit margin is 20% on sales.
Required:
PREPARE the relevant control accounts to record the above transactions in the cost ledger of the company.

Integrated Accounting System

Question 18 - Pyq

Dutta Enterprises operates an integral system of accounting. You are required to PASS the Journal Entries for the following transactions that took place for the year ended 30th June, 20X8. (Narrations are not required.)

Particulars	₹
Raw materials purchased (50% on Credit)	6,00,000
Materials issued to production	4,00,000

Wages paid (50% Direct)	2,00,000
Wages charged to production	1,00,000
Factory overheads incurred	80,000
Factory overheads charged to production	1,00,000
Selling and distribution overheads incurred	40,000
Finished goods at cost	5,00,000
Sales (50% Credit)	7,50,000
Closing stock	Nil
Receipts from debtors	2,00,000
Payments to creditors	2,00,000

Question 19 - Study Material

Dutta Enterprises operates an Integral system of accounting. You are required to PASS the Journal Entries for the following transactions that took place for the year ended 30th June, 2020. (Narrations are not required.)

	(Rs)
Raw materials purchased (50% on Credit)	6,00,000
Materials issued to production	4,00,000
Wages paid (50% Direct)	2,00,000
Wages charged to production	1,00,000
Factory overheads incurred	80,000
Factory overheads charged to production	1,00,000
Selling and distribution overheads incurred	40,000
Finished goods at cost	5,00,000
Sales (50% Credit)	7,50,000
Closing stock	Nil
Receipts from debtors	2,00,000
Payments to creditors	2,00,000

Question 20 - Pyq

Journalize the following transactions assuming the cost and financial accounts are integrated:

Particulars	**Amount (Rs.)**
Direct Materials issued to production	Rs. 5,88,000
Allocation of Wages (Indirect)	Rs. 7,50,000
Factory Overheads (Over absorbed)	Rs. 2,25,000
Administrative Overheads (Under absorbed)	Rs. 1,55,000
Deficiency found in stock of Raw material (Normal)	Rs. 2,00,000

Question 21 - Pyq

BPR Limited keeps books on integrated accounting system. The following balances appear in the books as on April 1, 2002:

Particulars	**Dr. (₹)**	**Cr. (₹)**
Stores Control A/c	40,950	-
Work-in-progress A/c	38,675	-
Finished Goods A/c	52,325	-
Bank A/c	-	22,750
Creditors A/c	-	18,200
Fixed Assets A/c	1,47,875	-
Debtors A/c	27,300	-
Share Capital A/c	-	1,82,100
Provision for Depreciation A/c	-	11,375
Provision for Doubtful Debts A/c	-	3,725
Factory overheads Outstanding A/c	-	6,250
Pre-Paid Administration Overheads A/c	9975	-

Profit & Loss A/c	-	72,800
	3,17,100	3,17,100

The transactions for the year ended March 31, 2003 were as given below:

Particulars	**Amount (₹)**	**Amount (₹)**
Direct Wages	1,97,925	
Indirect Wages	11,375	2,09,300
Purchase of materials (on credit)		2,27,500
Materials issued to production		2,50,250
Materials issued for repairs		4,550
Goods finished during the year (at cost)		4,89,125
Credit Sales		6,82,500
Cost of Goods sold		5,00,500
Production overheads absorbed		1,09,200
Production overheads paid during the year		91,00,000
Production overheads outstanding at the end of year		7,775
Administration overheads paid during the year		27,300
Selling overheads incurred		31,850
Payments to Creditors		2,29,775
Payments received from Debtors		6,59,750
Depreciation of Machinery		14,789
Administration overheads outstanding at the end of year		2,225
Provision for doubtful debts at the end of the year		4,590

Required: Write up accounts in the integrated ledger of BPR Limited and prepare a Trial Balance.

Solution 21:

Stores Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	40,950	By WIP A/c	2,50,250
To Creditors A/c	2,27,500	By Production overheads A/c	4,550
		By Balance c/d	13,650
	2,68,450		2,68,450

Wages Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Bank	1,97,925	By Work-in-progress A/c	1,97,925
To Bank	11,375	By Production overheads A/c	11,375
	2,09,300		2,09,300

Work-in-Progress Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	38,675	By Finished goods A/c	4,89,125
To Wages control A/c	1,97,925	By Balance c/d	1,06,925
To Stores control A/c	2,50,250		
To Production overheads A/c	1,09,200		
	5,96,050		5,96,050

Production Overheads Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Wages control A/c	11,375	By WIP A/c	1,09,200
To Stores control A/c	4,550	By Profit & loss A/c	14,039
To Bank (91,000 – 6,250)	84,750	(Under absorbed overheads written off)	

To Production overheads outstanding	7,775		
To Provision for depreciation	14,789		
	1,23,239		1,23,239

Finished Goods Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	52,325	By Cost of sales A/c	5,00,500
To Work-in-progress A/c	4,89,125	By Balance c/d	80,450
To Administration Overheads A/c	39,500		
	5,80,950		5,80,950

Administration Overheads Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Prepaid Administration Overheads A/c	9,975	By Finished goods A/c	39,500
To Bank	27,300		
To Administration Overheads outstanding	2,225		
	39,500		39,500

Cost of Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Finished goods A/c	5,00,500	By Sale A/c	5,32,350
To Selling overheads	31,850		
	5,32,350		5,32,350

Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost of sales A/c	5,32,350	By Debtors A/c	6,82,350
To Cost & loss A/c	1,50,000		
	6,82,350		6,82,350

Factory overheads/Production overheads outstanding Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank	6,250	By Balance b/d	6,250
To Balance c/d	7,775	By Production overheads	7,775
	14,025		14,025

Prepaid Administration overheads Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	9,975	By Administration overheads A/c	9,975
	9,975		9,975

Provision for depreciation Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance c/d	26,164	By Balance b/d	11,375
		By Production overheads A/c	14,789
	26,164		26,164

Provision for doubtful debts Account

Particulars	Amount (₹)	Particulars	Amount (₹)

To Balance c/d	4,590	By Balance b/d	3,725
		By Profit & loss A/c	865
	4590		4590

Profit & Loss A Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Provision for doubtful debts	865	By Balance b/d	72,800
To Production overheads	14,039	By Sales A/c	1,50,150
To Balance c/d	2,08,046		
	2,22,950		2,22,950

Debtors Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	27,300	By Bank A/c	6,59,750
To Sales A/c	6,82,500	By Balance c/d	50,050
	7,09,800		7,09,800

Creditors Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank	2,29,775	By Balance b/d	18,200
To Balance c/d	15,925	By Stores control A/c	2,27,500
	2,45,700		2,45,700

Fixed Assets Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	1,47,875	By Balance c/d	1,47,875
	1,47,875		1,47,875

Bank Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Debtors	6,59,750	By Balance b/d	22,750
		By Direct wages	1,97,925
		By Indirect wages	11,375
		By Production overheads (₹ 84,750 + ₹ 6,250)	91,000
		By Administration Overheads	27,300
		By Selling overheads A/c	31,850
		By Creditors A/c	2,29,775
		By Balance c/d	47,775
	6,59,750		6,59,750

Trail Balance As on March 31, 2003

Particulars	Dr. (₹)	Cr. (₹)
Stores control A/c	13,650	
Work-in-progress A/c	1,06,925	
Finished goods A/c	80,450	
Bank A/c	47,775	
Creditors A/c		15,925
Fixed assets A/c	1,47,875	
Debtors A/c	50,050	

Share capital A/c		1,82,000
Provision for depreciation A/c		26,164
Profit & loss A/c		2,08,046
Production overheads outstanding A/c		7,775
Outstanding administrative overheads A/c		2,225
Provision for doubtful debts A/c		4,590
	4,46,725	4,46,725

Question 22 - Rtp

From the following information write up Control Accounts and prepare a Trial Balance:

Opening Balances

Share Capital	5,00,000	Sundry Creditors	3,00,000	Bank	50,000
Reserves	3,00,000	Sundry Debtors	3,00,000	Cash	50,000
Plant and Machinery	5,00,000	Stock	2,00,000		

Transactions during the year were as follows

Purchases of Stores	12,00,000	Manufacturing OH charged to production	3,75,000
Stores issued to Production	12,00,000	Selling and Distribution Expenses	2,00,000
Stores in Hand	1,00,000	Finished Stock Production at Cost	20,00,000
Wage (Direct) incurred	7,00,000	Sales	30,00,000
Direct Wages charged to production	6,50,000	Inventory Adjustment	1,00,000
Manufacturing OH incurred	4,00,000	Payment to Creditors	10,00,000
		Received from Debtors	20,00,000

Cost and Financial Records are integrated and books are kept accordingly.

Solution 22:

Stores Ledger Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	2,00,000	By WIP Control – issued to production	12,00,000
To Cash/ Bank / Creditors (RM Purchases)	12,00,000	By Inventory Adjustment A/c	1,00,000
		By balance c/d (balancing figure)	1,00,000
	14,00,000		14,00,000

Wages Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cash / Bank	7,00,000	By WIP Control – Direct Wages	6,50,000
		By POH Control – Indirect Wages (balancing figure)	50,000
	7,00,000		7,00,000

POH Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cash/Bank/ – POH paid	4,00,000	By WIP Control – POH absorbed	3,75,000
To Wages Control (Indirect Wages transfer)	50,000	By balance c/d (balancing figure)	75,000
	4,50,000		4,50,000

WIP Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)

To Stores Ledger Control – RM Consumed	12,00,000	By Finished Goods Control – Production transfer	20,00,000
To Wages Control – Direct Wages	6,50,000	By balance c/d (balancing figure)	2,25,000
To POH Control – POH absorbed	3,75,000		
	22,25,000		22,25,000

Finished Goods Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To WIP Control – Production transfer	20,00,000	By Cost of Sales A/c – COGS transfer	20,00,000
	20,00,000		20,00,000

SOH Control Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cash/ Bank / – SOH paid	2,00,000	By Cost of Sales A/c – SOH absorbed	2,00,000
	2,00,000		2,00,000

Cost of Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Finished Goods Control A/c	20,00,000	By P & L A/c – COS transfer	22,00,000
To SOH Control A/c	2,00,000		
	22,00,000		22,00,000

Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To P & L A/c – Sales transfer	30,00,000	By Debtors A/c – Sales made	30,00,000
	30,00,000		30,00,000

Inventory Adjustment Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Stores Ledger Control A/c	1,00,000	By P & L A/c – transfer	1,00,000
	1,00,000		1,00,000

Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost of Sales	22,00,000	By Sales	30,00,000
To Normal Profit c/d (balancing figure)	8,00,000		
Total	30,00,000	Total	30,00,000
To Inventory Adjustment written off	1,00,000	By Normal Profit b/d	8,00,000
To Net Profit for the year c/d (balancing figure)	7,00,000		
	8,00,000		8,00,000

Sundry Debtors Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	3,00,000	By Cash/Bank (Received from Debtors)	20,00,000
To Sales A/c	30,00,000	By balance c/d (balancing figure)	13,00,000
	33,00,000		33,00,000

Sundry Creditors Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank (Payments)	10,00,000	By balance b/d	3,00,000
To balance c/d (balancing figure)	5,00,000	By Stores Ledger Control A/c	12,00,000
	15,00,000		15,00,000

Share Capital Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance c/d (balancing figure)	5,00,000	By balance b/d	5,00,000
	5,00,000		5,00,000

Reserves Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance c/d (balancing figure)	3,00,000	By balance b/d	3,00,000
	3,00,000		3,00,000

Plant and Machinery Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To balance b/d	5,00,000	By balance c/d (balancing figure)	5,00,000
	5,00,000		5,00,000

Cash and Bank Account

Particulars		Amount (₹)	Particulars	Amount (₹)
To balance b/d	Cash	50,000	By Sundry Creditors	10,00,000
	Bank	50,000	By Wages Control A/c	7,00,000
To Sundry Debtors		20,00,000	By POH Control A/c	4,00,000
To balance c/d (Bank Overdraft)		2,00,000	By SOH Control A/c	2,00,000
		23,00,000		23,00,000

Trial Balance at the end of the period

Particulars	Dr. (₹)	Cr. (₹)
Stores Ledger Control A/c	1,00,000	
Work in Progress Control A/c	2,25,000	
Production OH Control A/c	75,000	
Bank Overdraft A/c		2,00,000
Debtors A/c	13,00,000	
Creditors A/c		5,00,000
Plant and Machinery A/c	5,00,000	
Share Capital A/c		5,00,000
Reserves A/c		3,00,000
Profit and Loss A/c		7,00,000
Total	22,00,000	22,00,000

Question 23 - Study Material

Bangalore Petrochemicals Co. keeps books on integrated accounting system. The following balances appear in the books as on 1st January, 2005.

Particulars	Dr. (₹)	Cr. (₹)
Stores control A/c	18,000	
Work-in-Progress A/c	17,000	
Finished goods A/c	13,000	
Bank A/c	10,000	
Creditors A/c		8,000

Fixed assets A/c	55,000	
Debtors A/c	12,000	
Share capital A/c		80,000
Depreciation provision A/c		5,000
Profit and loss A/c		32,000
	1,25,000	1,25,000

Transactions for the year ended 31st Dec., 2005 were as given below:

Particulars	**Amount (₹)**	**Amount (₹)**
Wages – direct	87,000	
Wages – indirect	5,000	92,000
Purchase of materials (on credit)		1,00,000
Materials issued to production		1,10,000
Materials for repairs		2,000
Goods finished during the year (at cost)		2,15,000
Sales (credit)		3,00,000
Cost of goods sold		2,20,000
Production overhead absorbed		48,000
Production overhead incurred		40,000
Administration overhead incurred (production)		12,000
Selling overhead incurred		14,000
Payments of creditors		1,01,000
Payments of debtors		2,90,000
Depreciation of machinery		1,300
Prepaid rent (included in factory overheads)		300

Prepare accounts in the integrated ledger.

Solution 23:

Stores Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	18,000	By Work-in-Progress A/c	1,10,000
To Creditors A/c	1,00,000	By Production Overheads	2,000
		By Balance c/d	6,000
	1,18,000		1,18,000

Wages Control Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Bank A/c	92,000	By Work-in-Progress A/c	87,000
		By Production overheads A/c	5,000
	92,000		92,000

Work-in-Progress Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Balance b/d	17,000	By Finished goods A/c	2,15,000
To Stores control A/c	1,10,000	By Balance c/d	47,000
To Wages control A/c	87,000		
To Production overheads A/c	48,000		
	2,62,000		2,62,000

Production Overhead Account

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**

To Wages Control A/c	5,000	By Work-in-Progress A/c	48,000
To Stores Control A/c	2,000	By Prepaid Rent A/c	300
To Bank A/c	40,000		
To Depreciation Provision	1,300		
	48,300		48,300

Finished Goods Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	13,000	By Cost of Sales A/c	2,20,000
To Work-in-Progress	2,15,000	By Balance c/d	20,000
To Administration Overhead	12,000		
	2,40,000		2,40,000

Administration Overheads Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank A/c	12,000	By Finished Goods A/c	12,000
	12,000		12,000

Cost of Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Finished Goods A/c	2,20,000	By Sales A/c	2,34,000
To Selling and Distribution Overheads A/c	14,000		
	2,34,000		2,34,000

Selling and Distribution Overheads Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank A/c	14,000	By Cost of Sales A/c	14,000
	14,000		14,000

Sales Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Cost of Sales	2,34,000	By Debtors A/c (Cr. Sales)	3,00,000
To P & L A/c (Profit)	66,000		
	3,00,000		3,00,000

Prepaid Rent Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Production Overheads	300	By Balance c/d	300
	300		300

Depreciation Provision Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance c/d	6,300	By Balance b/d	5,000
		By Production Overhead A/c	1,300
	6,300		6,300

Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance c/d	98,000	By Sales A/c	66,000
		By Profit b/d (last year)	32,000
	98,000		98,000

Debtors Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	12,000	By Bank A/c	2,90,000
To Sales	3,00,000	By Balance c/d	22,000
	3,12,000		3,12,000

Creditors Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Bank	1,01,000	By Balance b/d	8,000
To Balance c/d	7,000	By Stores Control A/c	1,00,000
	1,08,000		1,08,000

Bank Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	10,000	By Creditors	1,01,000
To Debtors	2,90,000	By Wages Control A/c	92,000
		By Production Overhead A/c	40,000
		By Administration Overhead A/c	12,000
		By Selling & Distribution Overhead A/c	14,000
		By Balance c/d	41,000
	3,00,000		3,00,000

Fixed Assets Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance b/d	55,000	By Balance c/d	55,000
	55,000		55,000

Share Capital Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Balance c/d	80,000	By Balance b/d	80,000
	80,000		80,000

Trial Balance As on 31st December, 2005

Particulars	Dr. (₹)	Cr. (₹)
Stores Control A/c	6,000	
Work-in-Progress A/c	47,000	
Finished Goods A/c	20,000	
Bank A/c	41000	
Creditors A/c		7,000
Fixed Assets A/c	55,000	
Debtors A/c	22,000	
Share Capital A/c		80,000
Depreciation Provision A/c		6,300
Profit and Loss A/c		98,000
Prepaid Rent A/c	300	
Total	1,91,300	1,91,300

Question 24 - Pyq

The following information is available from a company's records for March, 2016:

a) Opening balance of Creditor's Account	25,000
b) Closing balance of Creditor's Account	40,000
c) Payment made to Creditors	5,80,000
d) Opening balance of Stores Ledger Control Account	40,000
e) Closing balance of Stores Ledger Control Account	65,000
f) Wages paid (for 8,000 hours) 20% relate to indirect workers	4,00,000
g) Various indirect expenses incurred	60,000
h) Opening balance of WIP control account	50,000
i) Inventory of WIP at the end of the month includes material worth ₹ 35,000 on which 400 labour hours have been booked	
j) Factory overhead is charged to production at budgeted rate based on direct labour hours	
k) Budgeted overhead cost is ₹ 20,80,000 for budgeted direct labour hours of 1,04,000	

You are required to prepare Creditor's A/c, Stores ledger control A/c, WIP control A/c, Wages control A/c and Factory overheads control A/c.

Journal Entries

Question 25 - Rtp

Journalize the following transactions in the books of a Company maintaining Integrated Accounts –

Credit Purchases	₹ 12,00,000
Production Wages paid	₹ 7,00,000
Stocks issued to Production Orders	₹ 8,00,000
Works OH charged to production	₹ 4,50,000
FG transferred from Production Orders	₹ 18,00,000
AOH charged to Production	₹ 1,50,000
Works OH outstanding	₹ 1,20,000
Works Expenses Paid	₹ 4,60,000

Solution 25:

Journal Entries under Integrated System of Accounting

	Particulars	Dr. (₹)	Cr. (₹)
1.	Stores Ledger Control A/c Dr. To Sundry Creditors A/c (Being goods purchased on credit)	12,00,000	12,00,000
2.	Wages Control A/c Dr. To Cash / Bank A/c (Being Production Wages paid)	7,00,000	7,00,000
3.	Work-in-Progress Control A/c Dr. To Wages Control A/c (Being Production Wages transferred to WIP Control A/c)	7,00,000	7,00,000
4.	Work-in-Progress Control A/c Dr. To Stores Ledger Control A/c (Being Stores issued against Production Orders)	8,00,000	8,00,000
5.	Work-in-Progress Control A/c Dr. To Production Overheads Control A/c (Being Production OH allocated to production/ jobs)	4,50,000	4,50,000
6.	Finished Goods Control A/c Dr. To Work-in-Progress Control A/c (Being goods finished during the year transferred)	18,00,000	18,00,000
7.	Finished Goods Control A/c Dr. To Administration Overhead Control A/c (Being Administration Expenses charged to production)	1,50,000	1,50,000
8.	Production OH Control A/c Dr. To Works Expenses Payable A/c	1,20,000	1,20,000

	(Being Works Expenses incurred during the period but still unpaid)		
9.	Production OH Control A/c Dr. To Cash/ Bank A/c (Being Works Expenses paid during the period)	4,60,000	 4,60,000

Question 26 - Pyq

Journalize the following transactions assuming cost and financial accounts are integrated:

Particulars	₹
Material issued: Direct Indirect	 3,25,000 1,15,000
Allocation of wages (25% indirect)	6,50,000
Under / Over absorbed overheads Factory (over) Administration (under)	 2,50,000 1,75,000
Payment to sundry creditors	1,50,000
Collection from sundry debtors	2,00,000

Question 27 - Pyq

Journalize the following transactions in cost books under Non - Integrated system of accounting:

(i) Credit purchase of material - ₹27,000
(ii) Manufacturing overhead charged to production - ₹ 6,000
(iii) Selling and distribution overheads recovered from Sales - ₹ 4,000
(iv) Indirect wages incurred - ₹ 8,000
(v) Material returned from production to stores - ₹ 9,000

Miscellaneous Practical Problems

Discrepancies between Book Stock and Physical Stock

Question 28 - Pyq

After the annual stock taking you come to know of some significant discrepancies between book stock and physical stock. You gather the following information:

Item	Stock Card (Units)	Stores Ledger (Units)	Physical Check (Units)	Cost/Unit (₹)
A	600	600	560	60
B	380	380	385	40
C	750	780	720	10

(a) What action should be taken to record the information shown above?
(b) Suggest reasons for the shortage and discrepancies disclosed above and recommend a possible course of action by management to prevent future losses.

Solution 28:

(a) For recording the information shown in the problem under consideration, the following action May be taken:

1. Check the stock card and stores ledger. The correct physical quantity should be recorded.
2. Investigate reasons for stock losses or surpluses.
3. After ascertaining the reasons for stock losses the following treatment May be followed:
   - Debit Factory Overhead A/c
     Credit Stores Ledger Control A/c
   - (If the shortage is considered as normal loss)
     Debit Costing P & L A/c
   - Credit Stores Ledger Control A/c
     (If the shortage is considered as abnormal)
   - Debit Work-in-Progress A/c
     Credit Stores Ledger Control A/c
     (If the shortage is due to non-recording or short recording, etc.)
4. Rectification entry May be passed for clerical errors.
5. After ascertaining the reason for stock surpluses on appropriate action May be taken as follows:

- Debit Stores Ledger A/c
  Credit Factory Overhead A/c
  (If the Excess of stock is due to normal causes)
- Debit Stores Ledger Control A/c
  Credit Costing P & L A/c
  (If the excess at stock is due to abnormal causes)
- Debit Stores Ledger Control A/c
  Credit Work-in-Progress A/c
  (If the excess of stock is due to wrong recording, etc.)

6. In the given example the losses are with reference to items A (₹ 60 × 40 units = ₹ 2,400) and C (₹ 10 × 60 = ₹ 600). As the reasons for these losses are not given, they May be debited to P & L A/c and Stores Ledger Control A/c be credited accordingly.
7. The gains are in respect of stock item B (₹ 40 × 5 = ₹ 200). For treating gain of ₹ 200, Stores Ledger Control A/c be debited and Costing P & L A/c be credited.

(b) Reasons for the shortage and discrepancies:
(i) Wastage of material due to spoilage, evaporation etc. which May be normal or abnormal.
(ii) Components issued for production without entry on stock card and/or stores ledger.
(iii) Stores staff wrongly reading figures on the requisitions.
(iv) Theft of stock from stores.
(v) Clerical errors in stores ledger.

Recommended Course of action to prevent future losses
(i) Entry in the stores should be restricted to authorized persons only.
(ii) All issues of stock should be against proper stock requisition slips.
(iii) Stores should follow a system of internal check for all items of stock.
(iv) Proper accounting is done for all stock movements.
(v) Recording of entries in stores ledger and stock card should be made carefully.
(vi) Stock items which come first in the stores should be issued first to avoid losses due to deterioration or obsolescence.

Reconciliation

Question 1 - Study Material

The following figures are available from the financial records of ABC Manufacturing Co. Ltd. for the year ended 31-3-2006.

Particulars		Amount (₹)
Sales (20,000 units)		25,00,000
Materials		10,00,000
Wages		5,00,000
Factory Overheads		4,50,000
Office and administrative Overhead (production related)		2,60,000
Selling and distribution Overheads		1,80,000
Finished goods (1,230 units)		1,50,000
Work-in-Progress:		
Materials	30,000	
Labour	20,000	
Factory Overheads	20,000	70,000
Goodwill written off		2,00,000
Interest on capital		20,000

In the Costing records, factory overhead is charged at 100% wages, administration overhead 10% of factory cost and selling and distribution overhead at the rate of ₹10 per unit sold.
Prepare a statement reconciling the profit as per cost records with the profit as per financial records.

Question 2 - Mtp

The following figures have been taken from the financial accounts of a manufacturing firm for the year ended 31st March, 2021:

Particulars	(₹)
Direct material consumption	20,00,000
Direct wages	12,00,000
Factory overheads	6,40,000
Administrative overheads	2,80,000
Selling and distribution overheads	3,84,000
Bad debts	32,000
Preliminary expenses written off	16,000
Legal charges	4,000
Dividend received	40,000
Interest on fixed deposit	8,000
Sales - 48,000 units	48,00,000
Closing stock:	
- Finished stock - 4,000 units	3,20,000
- Work-in-process	96,000

The cost accounts for the same period reveal that the Direct Material consumption was ₹22,40,000; Factory overhead is recovered at 20% on prime cost; Administration overhead is recovered @ ₹4.8 per unit of production; and Selling and Distribution overheads are recovered at ₹6.40 per unit sold.
Required: PREPARE Costing and Financial Profit & Loss Accounts and RECONCILE the difference in the profit as arrived at in the two sets of accounts.

Question 3 - Pyq

The financial book of a company reveal the following data for the year ended 31st March, 2002:

Particulars	Amount (₹)
Opening Stock:	
Finished goods 875 units	74,375

Work-in-process [1.4.01 to 31.3.02]	32,000
Raw materials consumed	7,80,000
Direct Labour	4,50,000
Factory overheads	3,00,000
Goodwill	1,00,000
Administration overheads (production related)	2,95,000
Dividend paid	85,000
Bad Debts	12,000
Selling and Distribution Overheads	61,000
Interest received	45,000
Rent received	18,000
Sales 14,500 units	20,80,000
Closing Stock: Finished goods 375 units	41,250
Work-in-process	38,667

The cost records provide as under:
Factory overheads are recovered at 60% of direct wages.
Administration overheads (production related) are recovered at 20% of factory cost.
Selling and distribution overheads are charged at ₹4 per unit sold.
Opening stock of finished goods is valued at ₹104 per unit.
The company value Work-in-Progress at factory cost for both Financial and Cost Profit Reporting.
Required:
(i) Prepare statements for the year ended 31st March, 2002 to show the profit as per financial records and the profit as per costing records.
(ii) Present a statement reconciling the profit as per costing records with the profit as per Financial Records.

Question 4 - Study Material, Pyq

The following figures have been extracted from the Financial Accounts of a Manufacturing Firm for the first year of its operation:

Particulars	**Amount (₹)**
Direct Material Consumption	50,00,000
Direct Wages	30,00,000
Factory Overhead	16,00,000
Administration Overheads (production related)	7,00,000
Selling and Distribution Overheads	9,60,000
Bad Debts	80,000
Preliminary Expenses written off	40,000
Legal Charges	10,000
Dividends Received	1,00,000
Interest Received on Deposits	20,000
Sales (1,20,000 units)	1,20,00,000
Closing Stock:	
Finished Goods (4,000 units)	3,20,000
Work-in-Progress	2,40,000

The cost accounts for the same period reveal that the direct material consumption was ₹56,00,000. Factory overhead is recovered at 20% on prime cost. Administration overhead is recovered at ₹6 per unit of production. Selling and distribution overheads are recovered at ₹8 per unit sold.
Prepare the Profit and Loss Accounts both as per financial records and as per cost records. Reconcile the profits as per the two records.

Question 5 - Study Material

Following are the figures extracted from the Cost Ledger of a manufacturing unit.

Particulars	**Amount (₹)**
Stores:	

Opening balance	15,000
Purchases	80,000
Transfer from WIP	40,000
Issue to WIP	80,000
Issue to repairs and maintenance	10,000
Sold as a special case of cost	5,000
Shortage in the year	3,000
Work-in-Progress:	
Opening inventory	30,000
Direct labour cost charged	30,000
Overhead cost charged	1,20,000
Closing Balance	20,000
Finished Products:	
Entire output is sold at 10% profit on actual cost from work-in-progress	
Others:	
Wages for the period	35,000
Overhead Expenses	1,25,000

Ascertain the profit or loss as per financial accounts and cost accounts and reconcile them.

Computing Costing Profits – Preparation of Reconciliation Statement

Question 6 - Pyq

M/s Sellwell Ltd. has furnished you the following information from the financial books for the year ended 31st December, 1993:

Profit & Loss Account for the year ended 31st December, 1993

Particulars	Amount (₹)	Particulars	Amount (₹)
Opening stock of finished goods 500 units at ₹17.50 each	8,750	Sales 10,250 units	3,58,750
Materials consumed	1,30,000	Closing stock of finished goods:	
Wages	75,000	250 units at ₹25 each	6,250
Gross Profit c/d	1,51,250		
	3,65,000		3,65,000
Factory overheads	47,375	Gross Profit c/d	1,51,250
Administration overheads (production related)	53,000	Interest	125
Selling expenses	27,500	Rent received	5,000
Bad Debts	2,000		
Preliminary expenses	2,500		
Net profit	24,000		
	1,56,375		1,56,375

The cost sheet shows:

- The Cost of Materials at ₹13 per unit;
- The Labour Cost at ₹7.50 per unit;
- The Factory Overheads are absorbed at 60% of labour cost;
- The Administration Overheads (production related) are absorbed at 20% of factory cost;
- Selling Expenses are charged at ₹3 per unit;
- The opening stock of finished goods is valued at ₹22.50 per unit.

You are required to prepare:

(i) The cost sheet showing the number of units produced and the cost of production, by elements of costs, per unit and in total.

(ii) The statement of profit or loss as per cost accounts for the year ended 31st December, 1993.

(iii)The statement showing the reconciliation of profit or loss as shown by the cost accounts with the profit as shown by the financial accounts.

Question 7 - Pyq

ABC Ltd. has furnished the following information from the financial books for the year ended 31st March, 2007:

Profit and Loss Account

Particulars	Amount (₹)	Particulars	Amount (₹)
To Opening Stock (500 units at ₹140 each)	70,000	By Sales (10,250 units)	28,70,000
To Material Consumed	10,40,000	By Closing Stock (250 units at ₹200 each)	50,000
To Wages	6,00,000		
To Gross Profit c/d	12,10,000		
	29,20,000		29,20,000
To Factory Overheads	3,79,000	By Gross Profit b/d	12,10,000
To Administration Overheads (production related)	4,24,000	By Interest	1,000
To Selling Expenses	2,20,000	By Rent Received	40,000
To Bad Debts	16,000		
To Preliminary Expenses	20,000		
To Net Profit	1,92,000		
	12,51,000		12,51,000

The cost sheet shows the cost of materials at ₹104 per unit and the labour the cost at ₹60 per unit. The factory overheads are absorbed at 60% of labour cost and administration overheads (production related) at 20% of factory cost. Selling expenses are charged at ₹24 per unit. The opening stock of finished goods is valued at ₹180 per unit. You are required to prepare:

(i) A statement showing profit as per Cost accounts for the year ended 31st March, 2007; and

(ii) A statement showing the reconciliation of profit as disclosed in Cost accounts with the profit shown in financial accounts.

Reconciliation – Costing and Financial Profits – Absorption Based on Normal Capacity

Question 8 - Study Material, Pyq

The following information is available from the financial books of a company having a normal production capacity of 60,000 units for the year ended 31st March, 2006:

- Sales ₹10,00,000 (50,000 units).
- There was no opening and closing stock of finished units.
- Direct material and direct wages cost were ₹5,00,000 and ₹2,50,000 respectively.
- Actual factory expenses were ₹1,50,000 of which 60% are fixed.
- Actual administrative expenses (production related) were ₹45,000 which are completely fixed.
- Actual selling and distribution expenses were ₹30,000 of which 40% are fixed.
- Interest and dividends received ₹15,000.

You are required to:

(a) Find out profit as per financial books for the year ended 31st March, 2006;

(b) Prepare the cost sheet and ascertain the profit as per cost accounts for the year ended 31st March, 2006 assuming that the indirect expenses are absorbed on the basis of normal production capacity; and

(c) Prepare a statement reconciling profits shown by financial and cost books.

Computing Costing and Financial Profits – Two Products

Question 9 - Rtp

A Firm of Sports equipment commenced business on 1st April manufacturing two varieties of bat, 'Senior' and 'Sub-Junior. The following data has been extracted from the accounts records for the half-year period ended 30th September.

- Average Material Cost per unit – 'Senior' bat ₹80, 'Sub-Junior' bat ₹60.
- Average Cost of Labour per unit – 'Senior' bat ₹140, 'Sub-Junior' bat ₹110.
- Finished Goods sold – Senior: 300 bats, Sub-Junior: 700 bats.
- Sale Price per bat – Senior ₹500, Sub-Junior ₹390.
- Expenses incurred during the period – Works Expenses – ₹1,20,000, Office Expenses – ₹68,000.

You are required to prepare statements showing:

1. Profit per unit for each brand of bat, charge Labour and Material at actual average cost, Works Expenses at 100% on Labour Cost and Office Expenses at 25% of Works Costs.
2. Financial profit for the half-year ending 30th September.
3. Reconciliation between profit as shown by Cost Account and Financial Accounts.

Reconciliation – Reverse Working – Preparing Cost Sheet

Question 10 -

Ram Co. maintains its accounts on a non-integrated basis. Both Financial Accountant and Cost Accountant have completed their accounts for the year ended 30th June and a Memorandum Account reconciling the two profit figures has been prepared.

The Financial Accountant has prepared the detailed Profit & Loss Account for the year ended 30th June.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Raw Material consumed:		By Trading A/c Cost of Goods Manufactured c/d	4,74,772
Opening Stock 51,296			
Add: Purchases 1,99,334			
Less: Closing Stock (47,382)	2,03,248		
To Direct Wages	80,072		
To Production Overhead	1,90,680		
To Opening WIP 24,496			
Less: Closing WIP (23,724)	772		
Total	4,74,772		4,74,772
To Opening Stock of Finished Goods	63,890	By Sales	6,25,600
		By Closing Stock of Finished Goods	65,702
To Cost of Goods Manufactured b/fd	4,74,772		
To Gross Profit c/d	1,52,640		
Total	6,91,302	Total	6,91,302
To Debenture Interest	2,000	By Gross Profit b/d	1,52,640
To Discount Allowed	2,964	By Discount Received	1,790
To Distribution Expenses	16,926		
To Sales Expenses	30,562		
To Administrative Expenses	53,058		
To Net Profit c/d	48,920		
Total	1,54,430	Total	1,54,430

The Memorandum Account reconciling the profit shown in Financial and Cost Account for the year is as follows:

Particulars	Amount (₹)	Particulars	Amount (₹)
During as per Cost Accounts	1,00,300	Profit as per Financial Accounts	48,920
Difference in stock Valuation:		Difference in Stock Valuation:	
		Opening Stock of Work in	
Opening Stock of Raw Materials	320	Progress	350
		Opening Stock of Finished	
Closing Stock of Finished Goods	682	Goods	652
		Closing Stock of Raw	
Discount Received	1,790	Material	422
		Closing Stock of Work in	
		Progress	296
		Sales Expenses	30,562
		Distribution Expenses	16,926
		Debenture Interest	2,000
		Discount Allowed	2,964
Total	1,03,092	Total	1,03,092

During the year, Production Overhead has been absorbed in the Cost Accounts at 250% of the Direct Wages. It is observed that the Cost Account has lost his working papers and data is not available.
You are required to prepare a detailed statement showing how the profit as shown in the Cost Accounts was arrived was arrived at. Any difference not explainable through the memorandum account should be taken as difference in the "Administrative Expenses" charged in the two sets of accounts.

Performa Costing P/L A/c – WIP and Finished Goods Valuation

Question 11 - Pyq

The following is the Trading and profit & Loss Accounts of Omega Limited.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Materials Consumed	23,01,000	By Sales (30,000 units)	48,75,000
To Direct Wages	12,05,750	By Finished Goods Stock (1,000 units)	1,30,000
To Production Overheads	6,92,250	By Work-in-Progress:	
To Administration Overheads (production related)	3,10,375	Materials	55,250
To Selling and Distribution Overheads	3,68,875	Wages	26,000
		Overheads	16,250
To Preliminary Expenses written off	22,750		97,500
To Goodwill written off	45,500	By Dividends received	3,90,000
To Fines	3,250	By Interest on bank deposits	65,000
To Interest on mortgage	13,000		
To Loss on sale of machine	16,250		
To Taxation	1,95,000		
To Net Profit for the year	3,83,500		
	55,57,500		55,57,500

Omega Limited manufactures a standard unit.
The Cost Accounting records of Omega Ltd. show the following:

- Production Overheads have been charged to Work-in-Progress at 20% on Prime Cost.
- Administration Overheads (production related) have been recovered at ₹9.75 per Finished Unit.
- Selling & Distribution Overheads have been recovered at ₹13 per unit sold.
- The Under or Over-absorption of Overheads has not been transferred to Costing P & L A/c.

Required:
(i) Prepare a Performa Costing Profit & Loss Account, indicating Net Profit.
(ii) Prepare Control Accounts for Production Overheads, Administration Overheads and Selling & Distribution Overheads.
(iii) Prepare a statement reconciling the profit disclosed by cost records with that shown in Financial Accounts.

Question 12 - Pyq

Given below is the Trading and Profit and Loss Account of a Company for the year ended 31st March, 1993:

Particulars	Amount (₹)	Particulars	Amount (₹)
To Materials	27,40,000	By Sales (60,000 units)	60,00,000
To Wages	15,10,000	Stock (2,000 units)	1,60,000
To Factory expenses	8,30,000	Work-in-Progress:	
To Administration expenses (production related)	3,82,400	Materials	64,000
		Wages	36,000
To Selling expenses	4,50,000		
To Preliminary expenses written off	60,000	Factory Expenses	20,000
Net profit	3,25,600	By Dividend Received	18,000
	62,98,000		62,98,000

The Company manufactures standard units. In the Cost Accounts:
(i) Factory expenses have been allocated to production at 20% of Prime Cost:

(ii) Administrative expenses (production related) at ₹6 per unit produced: and
(iii) Selling expenses at ₹8 per unit sold.
Prepare the Costing Profit and Loss Account of the company and reconcile the same with the profit disclosed by the Financial Accounts.

Reconciliation A/c – Adjustment Given to find Profit as per Financial Records

Question 13 - Rtp

From the following data prepare a Reconciliation Statement: (In ₹)

Profit as per Cost Accounts	1,45,500	Overvaluation of Opening Stock in Cost Accounts	15,000
Works OH under-recovered	9,500	Overvaluation of Closing Stock in Cost Accounts	7,500
Administrative OH	22,750	Interest earned during the year	3,750
under-recovered	19,500	Rent received during the year	27,000
Selling OH over-recovered	9,000	Preliminary Expenses written off during the year	18,000
Bad Debts w/off during the year			

Reconciliation with Losses

Question 14 - Rtp

A manufacturing Company disclosed a Net Loss of ₹5,72,000 as per their Cost Accounts for the year ended 31st March. The Financial Accounts however disclosed a Net Loss of ₹8,84,000 for the same period. The following information was revealed as a result scrutiny of the figures both the sale of Books:

Income-Tax Provided	1,54,000	Administration OH under absorbed	24,000
Interest on Loan Funds in Financial	2,63,000	Depreciation as per Financial	2,20,000
Accounts	16,000	Account	2,45,000
Transfer Fees (Credit in Financial	8,000	Depreciation charged in Cost	
Books)	16,000	Account	64,000
Stores Adjustment (Credit in Financial		Interest on Investments not	
Books)		Included in Cost	
Factory OH over-absorbed		Accounts	

Prepare a Memorandum Reconciliation Account.

Question 15 - Pyq

A manufacturing Company has disclosed a Net Loss of ₹2,13,000 as per their Cost Accounting Records for the year ended 31st March. However, their Financial Accounting Records disclosed a Net Loss of ₹2,58,000 for the same period. A scrutiny of data of both the sets of books of accounts revealed the following information (In ₹)

Particulars	Amount (₹)
Factory Overheads under absorbed	5,000
Administration Overheads over absorbed	3,000
Depreciation charged in Financial Accounts	70,000
Depreciation Charged in Cost Accounts	80,000
Interest on Investment not included in Cost Accounts	20,000
Income Tax provided in Financial Accounts	65,000
Transfer Fees (Credit in Financial Accounts)	2,000
Preliminary Expenses written off	3,000
Over-valuation of Closing stock of Finished Goods in Cost Accounts	7,000

Required:
a) Explain this in Reconciliation Statement
b) Draw Memorandum Reconciliation Account

Question 16 - Pyq

From the following figures prepare a reconciliation statement:

Particulars	Amount (₹)
Net Loss as per costing records	1,72,400
Works overhead under recovered in costing	3,120
Administrative overhead recovered in excess	1,700

Depreciation charged in financial records	11,200
Depreciation recovered in costing	12,500
Interest received not included in costing	8,000
Obsolescence charged (loss) in financial records	5,700
Income-tax provided in financial books	40,300
Bank Interest credited in financial books	750
Stores adjustment (credit) in financial books	475
Value of opening stock in: Cost accounts	52,600
Financial accounts	54,000
Value of closing stock in: Cost accounts	52,000
Financial accounts	49,600
Interest charged in cost accounts but not in financial accounts	6,000
Preliminary expenses written off in financial accounts	800
Provision for doubtful debts in financial accounts	150

Memorandum Reconciliation Account

Question 17 - Mtp

A manufacturing company disclosed a net profit ₹10,20,000 as per their cost accounts for the year ended 31st March 2021. The financial accounts however disclosed a net profit of ₹6,94,000 for the same period. The following information was revealed as a result of scrutiny of the figures of both the sets of accounts.

	(₹)
(i) Factory Overheads under-absorbed	80,000
(ii) Administration Overheads over-absorbed	1,20,000
(iii) Depreciation charged in Financial Accounts	6,50,000
(iv) Depreciation charged in Cost Accounts	5,50,000
(v) Interest on investments not included in Cost Accounts	1,92,000
(vi) Income-tax provided	1,08,000
(vii) Interest on loan funds in Financial Accounts	4,90,000
(viii) Transfer fees (credit in financial books)	48,000
(ix) Stores adjustment (credit in financial books)	28,000
(x) Dividend received	64,000

PREPARE a Reconciliation statement.

Question 18 - Pyq

R Ltd. shows a Net profit of ₹3,60,740 as per their cost accounts for the year ended 31st March, 2021. The following information was revealed as a result of scrutiny of the figures from the both sets of accounts:

Sr. No.	Particulars	(₹)
i	Over recovery of selling overheads in cost accounts	10,250
ii	Over valuation of closing stock in cost accounts	7,300
iii	Rent received credited in financial accounts	5,450
iv	Bad debts provided in financial accounts	3,250
v	Income tax provided in financial accounts	15,900
vi	Loss on sale of capital asset debited in financial accounts	5,800
vii	Under the recovery of administration overheads in cost accounts	3,600

Required:

Prepare a reconciliation statement showing the profit as per the financial records.

Question 19 - Study Material

M/s. H.K. Piano Company showed a net loss of ₹4,16,000 as per their financial accounts for the year ended 31st March, 2004. The cost accounts, however, disclosed a net loss of ₹3,28,000 for the same period. The following information was revealed as a result of scrutiny of the figures of both the sets of books:

Particulars	Amount (₹)
Factory overheads under-recovered	6,000
Administration overheads over-recovered	4000
Depreciation charged in financial accounts	1,20,000
Depreciation recovered in costs	1,30,000
Interest on investment not included in costs	20,000
Income-tax provided	1,20,000
Transfer fees (credit in financial books)	2000
Stores adjustment (credit in financial books)	2000

Prepare a Memorandum reconciliation account.

Question 20 - Pyq

The following has been obtained from financial accounting and cost accounting records.

	Financial Accounting	Cost Accounting
Factory Overhead	94,750	90,000
Administrative overhead	60,000	57,000
Selling Overhead	55,000	61,500
Opening Stock	17,500	22,500
Closing Stock	12,500	15,000

Indicate under-recovery and over-recovery and their effects on cost accounting profit.
Note: You are not required to prepare reconciliation statement.

Question 21 - Pyq

Given below is the Trading and Profit and Loss Account of a Company for the year ended 31st March, 2016:

Particulars	Amount (₹)	Particulars	Amount (₹)
To Materials	26,80,000	By Sales (50,000 units)	62,00,000
To Wages	17,80,000	By Closing Stock (2,000 units)	1,50,000
To Factory expenses	9,50,000	By Dividend Received	20,000
To Administration expenses	4,80,200		
To Selling expenses	2,50,000		
To Preliminary expenses written off	50,000		
Net profit	1,79,800		
	63,70,000		63,70,000

In the Cost Accounts:
(i) Factory expenses have been allocated to production at 20% of Prime Cost.
(ii) Administrative expenses absorbed at 10% of factory cost.
(iii) Selling expenses charged at ₹10 per unit sold.
Prepare the Costing Profit and Loss Account of the company and reconcile the same with the profit disclosed by the Financial Accounts.

Question 22 - Pyq

GK Ltd. showed net loss of ₹2,43,300 as per their financial accounts for the year ended 31st March, 2018. However, cost accounts disclosed net loss of ₹2,48,300 for the same period. On scrutinizing both the set of books of accounts, the following information were revealed:

Works overheads over recovered	30,400
Selling overheads under recovered	20,300
Administrative overheads under recovered	27,700
Depreciation over charged in cost accounts	35,100
Bad debts written off in financial accounts	15,000

Preliminary exp w/off in financial accounts	5,000
Interest credited during the year in financial accounts	7,500

Prepare a reconciliation statement reconciling losses shown by financial and cost accounts by taking costing net loss as base.

Question 23 - Pyq

M/s Abid Private Limited disclosed a net profit of ₹48,408 as per cost book for the year ending 31st March, 2019. However, financial accounts disclosed net loss of ₹15,000 for the same period. On scrutinizing both the set of books of accounts, the following information was revealed:
Works overheads under recovered in cost books - 48,600
Office overheads over recovered in cost books - 11,500
Dividend received on shares - 17,475
Interest on fixed deposits - 21,650
Provision for doubtful debts - 17,800
Obsolescence loss not charged in cost accounts - 17,200
Stores adjustments (debited in financial accounts) - 35,433
Depreciation charged in Financial accounts - 30,000
Depreciation recovered in cost books - 35,000
Prepare a memorandum reconciliation account.

Question 24 - Pyq

X Ltd. follows Non-Integrated Accounting System. Financial Accounts of the company show a Net Profit of ₹5,50,000 for the year ended 31st March, 2022. The chief accountant of the company has provided following information from the Financial Accounts and Cost Accounts:

Sr. No	Particulars	(₹)
(i)	Legal Chargers Provided in Financial accounts	15,250
(ii)	Interim Dividend received credited in financial accounts	4,50,000
(iii)	Preliminary Expenses written off in financial accounts	25,750
(iv)	Over recovery of selling overheads in cost accounts	11,380
(v)	Profit on sale of capital asset credited in financial accounts	30,000
(vi)	Under valuation of closing stock in cost accounts	25,000
(vii)	Over recovery of production overheads in cost accounts	10,200
(viii)	Interest paid on Debentures shown in financial accounts	50,000

Required:
Find out the Profit (Loss) as per Cost Accounts by preparing a Reconciliation Statement.

Question 25 - Rtp

The following is the Trading and profit & Loss Accounts of XYZ Ltd. for the year ended 31st March, 2019.

Particulars	Amount (₹)	Particulars		Amount (₹)
Direct Materials	14,16,000	By Sales (30,000 units)		30,00,000
Direct Wages	7,42,000	By Finished Goods Stock (2,000 units)		1,67,500
Works Overheads	4,26,000	By Work-in-Progress:		
Administration Overheads	1,50,000	Materials	34,000	
Selling and Distribution Overheads	1,65,000	Wages	16,000	
		Works Overheads	4,000	54,000
To Net Profit for the year	3,22,500			
	32,21,500			32,21,500

The Cost Accounting records show the following in the course of manufacturing a standard unit:

- Works Overheads have been charged at 20% on Prime Cost.
- Administration Overheads (production related) have been recovered at ₹5 per Finished Unit.
- Selling & Distribution Overheads have been recovered at ₹6 per unit sold.

Required:
(i) Costing Profit & Loss Account, indicating Net Profit.
(ii) A statement reconciling the profit disclosed by cost records with that shown in Financial Accounts.

Question 26 - Pyq

The Profit and Loss account of ABC Ltd. for the year ended 31st March, 2021 is given below :
Profit and Loss Account (for the year ended 31st March,2021)

To Direct Material	6,50,000	By Sales	15,00,000
To Direct Wages	3,50,000	(15000 units)	
To Factory Overheads	2,60,000	By Dividend received	9,000
To Administrative Overheads	1,05,000		
To Selling overheads	85,000		
To Loss on Sale of Investments	2,000		
To Net Profit	57,000		
	15,09,000		15,09,000

- Factory Overheads are 50% fixed and 50% variable.
- Administrative Overheads are 100% fixed.
- Selling Overheads are completely variable
- Normal production Capacity of ABC Ltd. is 20,000 units.
- Indirect Expenses are absorbed in the cost accounts on the basis of normal production capacity.
- Notional rent of own premises charged in Cost Accounts is amounting to ₹12,000.

You are required to:
(i) Prepare Cost sheet and ascertain the Profit as per Cost Records for the year ended 31st March, 2021.
(ii) Reconcile the Profit as per Financial Records with Profit as per Cost Records.

Question 27 - Rtp

The financial books of a company reveal the following data for the financial year ending on 31st March, 2022:

	(₹)
Opening Stock: Finished goods 875 units	1,48,750
Work-in-process	64,000
01.04.2021 to 31.3.2022 Raw materials consumed	15,60,000
Direct Labour	9,00,000
Factory overheads	6,00,000
Goodwill written off	2,00,000
Administration overheads	5,90,000
Dividend paid	1,70,000
Bad Debts	24,000
Selling and Distribution Overheads	1,22,000
Interest received	90,000
Rent received	36,000
Sales 14,500 units	41,60,000
Closing Stock: Finished goods 375 units	82,500
Work-in-process	77,334

The cost records provide as under:

Factory overheads are absorbed at 60% of direct wages.
Administration overheads are recovered at 20% of factory cost.
Selling and distribution overheads are charged at ₹8 per unit sold.
Opening Stock of finished goods is valued at ₹208 per unit.
The company values work-in-process at factory cost for both Financial and Cost Profit Reporting.
Required:
1. PREPARE statements for the year ended 31st March, 2022 showing-
    a. The profit as per financial records
    b. The profit as per costing records.
2. PRESENT a statement reconciling the profit as per costing records with the profit as per Financial Records.

Question 28 - Rtp

The financial records of Riva Private Limited showed a net profit of ₹1,69,500 for the year ended 31st March, 2022. The cost accounts, however, disclosed a net loss of ₹88,500 for the same period. The following information were revealed as a result of scrutiny of the figures of cost accounts and financial accounts:

		(₹)
(i)	(Administrative overhead under recovered	63,750.0
(ii)	Factory overhead over recovered	3,37,500.0
(iii)	Depreciation under charged in Cost Accounts	65,000.0
(iv)	Dividend received	50,000.0
(v)	Loss due to obsolescence charged in Financial Accounts	42,000.0
(vi)	Income tax provided	1,09,000.0
(vii)	Bank interest credited in Financial Accounts	34,000.0
(viii)	Value of opening stock:	
	In Cost Accounts	4,12,500.0
	In Financial Accounts	3,62,500.0
(ix)	Value of closing stock:	
	In Cost Accounts	3,13,750.0
	In Financial Accounts	3,30,000.0
(x)	Goodwill written-off in Financial Accounts	62,500.0
(xi)	Notional rent of own premises charged in Cost Accounts	1,50,000.0
(xii)	Provision for doubtful debts in Financial Accounts	37,500.0

Prepare a reconciliation statement by taking costing net loss as base.

Unit Job & Batch Costing

Job Cost – Revision of Cost and Selling Price

Question 1 - Rtp

SM Motors Ltd. is a manufacturer of auto components.

Following are the details of expenses for the year 2019-20:

	(₹)
Opening Stock of Material	15,00,000
Closing Stock of Material	20,00,000
Purchase of Material	1,80,50,000
Direct Labour	90,50,000
Factory Overhead	30,80,000
Administrative Overhead	20,50,400

During the FY 2020-21, the company has received an order from a car manufacturer where it estimates that the cost of material and labour will be ₹ 80,00,000 and ₹ 40,50,000 respectively. The company charges factory overhead as a percentage of direct labour and administrative overheads as a percentage of factory cost based on previous year's cost.

Cost of delivery of the components at customer's premises is estimated at ₹ 4,50,000. You are required to:

(i) CALCULATE the overhead recovery rates based on actual costs for 2019-20.

(ii) PREPARE a Job cost sheet for the order received and the price to be quoted if the desired profit is 25% on sales.

Question 2 - Study Material

A shop floor supervisor of a small factory presented the following cost for job No.303, to determine the selling price.

	Per unit (₹)
Materials	70
Direct wage 18 hours @ ₹2.50 (Department X 8 hours; Department Y 6 hours; Department Z 4 hours)	45
Chargeable expenses	5
	120
Add: 33-1/3% for expenses cost	40
	160

Analysis of Profit and Loss Account (for the year 2005)

Particulars		Amount (₹)	Particulars	Amount (₹)
Materials used		150,000	Sales less returns	2,50,000
Direct wages:				
Dept. X	10,000			
Dept. Y	12,000			
Dept. Z	8,000	30,000		
Special stores items		4,000		
Overheads:				
Dept. X	5,000			
Dept. Y	9,000			
Dept. Z	2,000	16,000		
Works cost		200,000		
Gross profit c/d		50,000		
		2,50,000		2,50,000
Selling expenses		20,000	Gross profit b/d	50,000
Net profit		30,000		
		50,000		50,000

It is also noted that average hourly rates for the three departments X, Y and Z are similar.

You are required to:

Draw up a job cost sheet.

Calculate the entire revised cost using 2005 actual figures as basis.
Add 20% to total cost determine selling price.

Simultaneous Equation – Estimation of Overhead and Profit of each Job

Question 3 - Study Material

The following data relate to the manufacture of a standard product during the 4 week ended 28th February 20X9:

Raw Materials Consumed	₹ 4,00,000
Direct Wages	₹ 2,40,000
Machine Hours Worked	3,200 hours
Machine Hour Rate	₹ 40
Office Overheads	10% of works cost
Selling Overheads	₹ 20 per unit
Units produced and sold	10,000 at ₹ 120 each

You are required to FIND OUT the cost per unit and profit for the 4- week ended 28th February 20X9.

Question 4 - Study Material

Arnav Confectioners (AC) owns a bakery which is used to make bakery items like pastries, cakes and muffins. AC use to bake atleast 50 units of any item at a time. A customer has given an order for 600 muffins. To process a batch of 50 muffins, the following cost would be incurred:
Direct materials- ₹ 500
Direct wages - ₹ 50
Oven set- up cost ₹ 150
AC absorbs production overheads at a rate of 20% of direct wages cost. 10% is added to the total production cost of each batch to allow for selling, distribution and administration overheads.
AC requires a profit margin of 25% of sales value.
DETERMINE the selling price for 600 muffins.

Question 5 - Study Material, Pyq

In an engineering company, the factory overheads are recovered on a fixed percentage basis on direct wages and the administrative overheads are absorbed on a fixed percentage basis on factory cost.
The company has furnished the following data relating to two jobs undertaken by it in a period:

Particulars	Job 101 (₹)	Job 102 (₹)
Direct materials	54,000	37,500
Direct wages	42,000	30,000
Selling price	1,66,650	1,28,250
Profit percentage on Total Cost	10%	20%

Required:
(i) Computation of percentage recovery rates of factory overheads and administrative overheads.
(ii) Calculation of the amount of factory overheads, administrative overheads and profit for each of the two jobs.
(iii) Using the above recovery rates fix the selling price of job 103. The additional data being:
Direct materials ₹ 24,000
Direct wages ₹ 20,000
Profit percentage on selling price 12- ½ %

Selling Price of New Order

Question 6 - Pyq

In the current quarter a company has undertaken two jobs. The data relating to these jobs are as under:

Particulars	Job 1102	Job 1108
Selling price	₹ 1,07,325	₹ 1,57,920
Profits as percentage on cost	8%	12%
Direct Materials	₹ 37,500	₹ 54,000
Direct wages	₹ 30,000	₹ 42,000

It is the policy of company to charge Factory overheads as percentage on direct wages and selling and Administration overhead as percentage on Factory cost.

The company has received a new order for manufacturing of a similar job. The estimate of direct materials and direct wages relating to the new order are ₹ 64,000 and ₹ 50,000 respectively. A profit of 20% on sales is required.
You are required to compute:
(i) The rates of factory overheads and selling and administration overheads to be charged.
(ii) The selling price of the new order.

Preparation of Job Cost Sheet

Question 7 - Pyq

A Factory, which uses a Job Costing System, provides the following cost data for the year ended 31st March. Direct Material: ₹ 9,00,000, Direct Wages: ₹ 7,50,000, Profit: ₹ 6,09,000, SOH: ₹ 5,25,000, AOH: ₹ 4,20,000, POH: ₹ 4,50,000.
You are required to –
(a) Prepare a Cost Sheet indicating the various components of cost and profit.
(b) For the next year, the factory has received an order for a number of jobs. It is estimated that Direct Materials would be ₹ 12 Lakhs and Direct Labour would cost ₹ 7.5 Lakhs. What would be the price for these jobs if the Factory intends to earn the same rate of profit on sales, assuming that the S&D OH has gone up by 15%? (Note: Absorb Factory Overheads on Direct Wages and Administration Overheads and Selling & Distribution Overheads on Works Cost).

Preparation of Quotation – Department Wise Overhead Estimation

Question 8 - Rtp

A Furniture making business manufactures quality furniture to customers' order. It has three Production Departments (A, B and C) which have OH Absorption Rates (per Direct Labour Hour) of ₹ 12.86, ₹ 12.40 and ₹ 14.03 respectively.
Two pieces of furniture are to be manufactured for customers. Direct Costs are as follows –

Particulars		Job 1	Job 2
Direct Materials		₹ 154	₹ 108
Direct Labour: Department A	Labour Rate ₹ 7.60 per hour	20 hours	16 hours
Department B	Labour Rate ₹ 7.00 per hour	12 hours	10 hours
Department C	Labour Rate ₹ 6.80 per hour	10 hours	14 hours

The Firm quotes prices to customers that reflect a required profit of 25% on Selling Price. Calculate the Total Cost and Selling Price of each job.

Estimation of Job Cost

Question 9 - Rtp

From the records of a manufacturing Company, the following budgeted details are available.

Particulars				₹
Direct Materials				1,99,000
Direct Wages	Machine Shop	12,000 hou₹	63,000	
	Assembly Shop	10,000 hou₹	48,000	1,11,000
Works Overheads	Machine Shop	12,000 hou₹	88,200	
	Assembly Shop	10,000 hou₹	51,800	1,40,000
Administrative Overheads				90,000
Selling Overheads				81,000
Distribution Overheads				62,100

The Company follows Absorption Costing method. You are required to prepare –

- Schedule of OH Rates from the data available stating the basis of OH Recovery Rates used under the given circumstances.
- A cost estimate for the following job based on the overhead rates so computed.

(a) Direct Materials 25 kg at ₹ 16.80 per kg, and 15 kg at ₹ 20.00 per kg
(b) Direct Labour Machine Shop 30 hours, Assembly Shop 42 hours

Valuation of Closing WIP based on Absorption Rate

Question 10 -

A firm uses job costing and recovers overheads on direct labour. Three jobs were worked on during a period the details of which are as follows:

Particulars	Job 1 (₹)	Job 2 (₹)	Job 3 (₹)
Opening work-in-progress	8,500	0	46,000
Material in period	17,150	29,025	0
Labour for period	12,500	23,000	4,500

The overheads for the period were exactly as budgeted ₹ 1,40,000 Jobs 1 and 2 are the only incomplete jobs. You are required to compute the value of closing work-in-progress.

Batch Costing

Different Batch Size – Cost Per Unit

Question 11 -

A company manufactures widgets to order and has the following budgeted overheads for the year, based on normal activity levels.

Department	Budgeted overheads (₹)	Budgeted Activity (Total Labour Hours)
Welding	6,000	1,500 labour hours
Assembly	10,000	1,000 labour hours

Selling and administrative overheads are 20% of factory cost. An order for 250 widgets type X 128, made as Batch 5997, incurred the following costs.
Materials ₹ 12,000
Labour 100 hours
welding shop at ₹ 10 hour
200 hours assembly shop at ₹ 8 hour
₹ 500 was paid for the hire of special X-ray equipment for testing the welds.
Calculate the cost per unit for Batch 5997.

Economic Batch Quantity

Question 12 - Pyq

What is Economic Batch Quantity? How is it determined?

Solution 12:

Economic Batch Quantity: There is one particular batch size for which both set up and carrying Costs are minimum. This size is known as economic or optimum batch quantity.
The determination of economic batch quantity involve two types of costs viz.,
(i) Set up Cost (or preparation cost) and
(ii) Carrying cost.
With the increase in the batch size, there is an increase in the carrying cost but set up cost per unit of product is reduced; this situation is reversed when the batch size is reduced. Thus there is one particular batch size for which both set up and carrying costs are minimum. This size is known as economic or optimum batch quantity.
The mathematical formula usually used for its determination is as follows:
EBQ =
Where,
A = Annual demand for the product
S = Setting up cost per batch
C = Carrying cost per unit of production
Note: If the rate of interest (I) and unit cost of production (C) are given, the following formula should be used for determining EBQ
EBQ =

EBQ and Related Computation

Question 13 - Pyq

TSK Limited manufactures a variety of products. The annual demand for one of its products 'X' is estimated as 1,35,000 units. Product 'X' is to be manufactured done in batches. Set up cost of each batch is ₹3,375 and inventory holding cost is ₹5 per unit. It is expected that demand of product 'X' would be uniform throughout the year

Required:

a. Calculate the Economic Batch Quantity (EBQ) for Product 'X'.

b. Assuming that the company has a policy of manufacturing 7,500 units of Product 'X' per batch, calculate the additional cost incurred as compared to the cost incurred as per Economic Batch Quantity (EBQ) as computed in (i) above.

Question 14 - Mtp

Zee Ltd. Manufactures pistons used in car engines. As per the study conducted by the Auto Parts Manufacturers Association, there will be a demand of 80 million pistons in the coming year. A Ltd. Is expected to have a market share of ₹. 2.15% of the total market demand of the pistons in the coming year. It is estimated that it costs ₹. 2.50 as inventory holding cost per piston per month and that the set-up cost per run of piston manufacture is ₹. 4500.

(i) Compute the optimum run size for piston manufacturing?

(ii) Assuming that the company has a policy of manufacturing 20,000 pistons per run, calculate how much extra costs the company would be incurring as compared to the optimum run suggested in (i) above?

Question 15 - Pyq

AUX Ltd. has an annual demand from a single customer for 60,000 Covid-19 vaccines. The customer prefers to order in the lot of 15,000 vaccines per order. The production cost of vaccine is ₹ 5,000 per vaccine. The set-up cost per production run of Covid-19 vaccines is ₹ 4,800. The carrying cost is ₹ 12 per vaccine per month.

You are required to:

(i) Find the most Economical Production Run.

(ii) Calculate the extra cost that company incurs due to production of ₹ 15,000 vaccines in a batch.

Question 16 - Study Material

M/s. KBC Bearings Ltd. is committed to supply 48,000 bearings per annum to M/s. KMR Fans on a steady daily basis. It is estimated that it costs ₹ 1 as inventory holding cost per bearing per month and that the set up cost per run of bearing manufacture is ₹ 3,200

(i) DETERMINE the optimum run size of bearing manufacture?

(ii) STATE what would be the interval between two consecutive optimum runs?

(iii) FIND OUT the minimum inventory cost?

Question 17 - Study Material

A customer has been ordering 90,000 special design metal columns at the rate of 18,000 columns per order during the past years. The production cost comprises ₹2,120 for material, ₹60 for labour and ₹20 for fixed overheads. It costs ₹1,500 to set up for one run of 18,000 column and inventory carrying cost is 5%.

(i) FIND the most economic production run.

(ii) CALCULATE the extra cost that company incur due to processing of 18,000 columns in a batch.

Question 18 - Study Material

Update Ltd has to supply 2,40,000 units of a component "Tazzo" annually for its valued customer Prince. The Company has been producing 20,000 units per month by having 12 runs per annum. Its new Finance Manager Ram says that the production should be brought down to 5,000 units per batch and 48 batches should be run per annum. You are required to advise the Company on the following issues given that the Set up Cost per batch is ₹ 75 per batch and Carrying Cost per unit is ₹ 1 per annum.

1. What is the Economic Batch Size?
2. Should the Company continue producing 20,000 units per batch or should it adopt Ram's suggestion?
3. For least cost, how many batches should be run in a year?
4. What will be the total associated cost, i.e. Set-Up Costs and Carrying Costs per annum, if EBQ is adopted?

Batch Cost Sheet – Cost and Profit Per Batch

Question 19 - Pyq, Study Material

Aries Ltd. undertakes to supply 1,000 units of a component per month for the month of January, February and March. Every month a batch order is opened against which materials and labour cost are booked at actual. Overheads are levied on the basis of labour hours. The selling price is contracted at ₹ 15 per unit.
From the following data, present the cost and profit per unit of each batch order and the overall position of the order for 3,000 units. Ignore set-up costs.

Months	Batch Output	Material Cost (₹)	Labour Cost (₹)
January	1,250	6,250	5,000
February	1,500	9,000	6,000
March	1,000	5,000	4,000

Labour is paid at the rate of ₹ 4 per hour. The other details are:

Months	Overhead (₹)	Total Labour Hours
January	12,000	4,000
February	9,000	4,500
March	15,000	5,000

Question 20 - Study Material

Atharva Pharmacare Limited produced a uniform type of product and has a manufacturing capacity of 3,000 units per week of 48 hours. From the records of the company, the following data are available relating to output and cost of 3 consecutive weeks

Week number	Units manufactured	Direct material (₹)	Direct wages (₹)	Factory overheads (₹)
1	1,200	9,000	3,600	31,000
2	1,600	12,000	4,800	33,000
3	1,800	13,500	5,400	34,000

Assuming that the company charges a profit of 20% on selling price, FIND OUT the selling price per unit when the weekly output is 2,000 units

Different Batch Sizes – Cost Per unit Computation

Question 21 - Pyq

Component Z is made entirely in cost centre 100. Material Cost is 6 paise per component. The Component takes 10 minutes to produce. The Machine Operator is paid 72 paise per hour and the Machine Hour Rate is ₹ 1.50. The setting up of the machine to produce the Component P takes 2 hours 20 minutes.
On the basis of this information, prepare a Cost-Sheet showing the production and setting up both total and per component, assuming that a batch of: (a) 10 components, (b) 100 components, & (c) 1,000 components is produced.

Cost and Profit Per Piece of Batch order – Overall Positions

Question 22 - Study Material

Wonder Ltd. has a capacity of 120,000 Units per annum as its optimum capacity. The production costs are as under
Direct Material – ₹ 90 per unit
Direct Labour- ₹60 per unit
Overheads:
Fixed: ₹ 30,00,000 per annum
Variable : ₹100 per unit
Semi Variable: ₹ 20,00,000 per annum upto 50% capacity and an extra amount of ₹ 4,00,000 for every 25% increase in capacity or part thereof.
The production is made to order and not for stocks.
If the production programme of the factory is as indicated below and the management desires a profit of ₹20,00,000 for the year DETERMINE the average selling price at which each unit should be quoted. First 3 months: 50% capacity
Remaining 9 months: 80% capacity
Ignore Administration, Selling and Distribution overheads.

Job Costing and WIP

Question 23 - Study Material, Pyq

In a factory following the Job Costing Method, an abstract from WIP on 30th September was prepared as under

Job No.	Materials	Direct Labour Hours	Labour Cost	Factory Overheads applied
115	₹ 1,325	400 hours	₹ 800	₹ 640
118	₹ 810	250 hours	₹ 500	₹ 400
120	₹ 765	300 hours	₹ 475	₹ 380
Total	₹ 2,900		₹ 1,775	₹ 1,420

Materials used in October were as follows –

Materials Requisition No.	54	55	56	57	58	59
Job No.	118	118	118	120	121	124
Cost	₹ 300	₹ 425	₹ 515	₹ 665	₹ 910	₹ 720

A summary of labour hours deployed during October is as under –

Job No.	No. of hours Shop A	No. of hours Shop B
115	25	25
118	90	30
120	75	10
121	65	-
124	20	10
Total	275	75
Indirect Labour		
Waiting for Material	20	10
Machine Breakdown	10	5
Idle Time	5	6
Overtime Premium	6	5
Total	316	101

A Shop Credit Slip was issued in October, that material issued under Requisition No. 54 was returned back to stores as being not suitable. A Material Transfer Note issued in October indicated that material issued under Requisition No. 55 for Job 118 was directed to Job 124.

The hourly rate in Shop A per labour hour is ₹ 3 per hour and at Shop B ₹ 2 per hour. The Factory Overhead is applied at the same rate as in September. Jobs 115, 118 and 120 were completed in October.

Compute the Factory Cost of the completed jobs. It is the Company practice to put 10% on the Factory Cost to cover AOH and SOH and invoice the job to the customer on a total cost plus 20% basis. What would be the Invoice Price of these three jobs?

Solution 23:

1. Factory Cost Statement of completed Jobs

Month	Job No.	Materials	Labour	FOH (80% of Labour Cost)	Factory Cost
September	115	1,325	800(25 × 3) + (25 × 2)	640	2,765
October	115		= 125	100	225
Total		1,325	925	740	2,990
September	118	810	500(90 × 3) + (30 × 2)	400	1,710
October	118	515	= 330	264	1,109
Total		1,325	830	664	2,819
September	120	765	475(75 × 3) + (10 × 2)	380	1,620
October	120	665	= 245	196	1,106
Total		1,430	720	576	2,726

2. Invoice Price of Completed Jobs

Job No.	115	118	120
Factory Cost	2,990.00	2,819.00	2,726.00

Administration & Selling OH at 10% of Factory Cost	299.00	281.90	272.60
Total Cost	3,289.00	3,100.90	2,998.60
Add: Profit at 20% on Cost	657.80	620.18	599.72
Invoice Price	3,946.80	3,721.08	3,598.32

Department Wise Overhead Estimation – Total Cost Estimation

Question 24 - Rtp

XYZ Ltd manufactures mechanical fittings which pass through three departments – Foundry, Machine Shop and Assembling. The details of Wages and Production OH for the three Departments are as under –

Particulars	Foundry	Machine Shop	Assembling	Total
Direct Wages	₹ 10,000	₹ 50,000	₹ 10,000	₹ 70,000
Production Overhead	₹ 5,000	₹ 90,000	₹ 10,000	₹ 1,05,000

The Factory Cost for manufacturing "K" fitting was estimated as under –

Particulars	Per unit (₹)
Materials	16
Labour: Foundry ₹ 2, Machine Shop ₹ 4, Assembling ₹ 2	8
Works Overheads at 150% of Direct Wages (₹ 70,000 ÷ ₹ 1,05,000 = 150%)	12
Factory Cost	36

Identify and correct the conceptual error in the calculation of Factory Cost as shown above.

EBQ and Related Computation

Question 25 - Study Material

A Company has an annual demand from a single customer for 50,000 litres of a paint product. The total demand can be made up of a range of colour to be produced in a continuous production run after which a set-up of the machinery will be required to accommodate the colour change. The total output of each colour will be stored and then delivered to the customer as single load immediately before production of the next colour commences.

The Set up costs are ₹ 100 per set up. The Service is supplied by an outside company as required.

The Holding costs are incurred on rented storage space which costs ₹ 50 per sq. meter per annum. Each square meter can hold 250 Litres suitably stacked.

You are required to:

(i) CALCULATE the total cost per year where batches May range from 4,000 to 10,000 litres in multiples of 1,000 litres and hence choose the production batch size which will minimize the cost.

(ii) Use the economic batch size formula to CALCULATE the batch size which will minimise total cost.

Cost and Profit Per Piece of Batch order – Overall Positions

Question 26 - Rtp , Study Material

A jobbing factory has undertaken to supply 200 pieces of a component per month for the ensuing six months. Every month a batch order is opened against which materials and labour hours are booked at actuals. Overheads are levied at a rate per labour hour. The selling price contracted for is ₹ 8 per piece. From the following data present the cost and profit per piece of each batch order and overall position of the order for 1,200 pieces.

Month	Batch Output	Material cost (₹)	Direct wages (₹)	Direct labour hours
January	210	650	120	240
February	200	640	140	280
March	220	680	150	280
April	180	630	140	270
May	200	700	150	300
June	220	720	160	320

The other details are:

Month	Chargeable expenses (₹)	Direct labour hours

January	12,000	4,800
February	10,560	4,400
March	12,000	5,000
April	10,580	4,600
May	13,000	5,000
June	12,000	4,800

Question 27 - Rtp

A Ltd. manufactures mother boards used in smart phones. A smart phone requires one mother board. As per the study conducted by the Indian Cellular Association, there will be a demand of 180 million smart phones in the coming year. A Ltd. is expected to have a market share of 5.5% of the total market demand of the mother boards in the coming year. It is estimated that it costs ₹ 6.25 as inventory holding cost per board per month and that the set-up cost per run of board manufacture is ₹ 33,500.

(i) COMPUTE the optimum run size for board manufacturing?

(ii) Assuming that the company has a policy of manufacturing 80,000 boards per run, CALCULATE how much extra costs the company would be incurring as compared to the optimum run suggested in (i) above?

Question 28 - Rtp

AP Ltd. received a job order for supply and fitting of plumbing materials. Following are the details related with the job work:

Direct Materials

AP Ltd. uses a weighted average method for the pricing of materials issues. Opening stock of materials as on 12th August 2020:

- 15mm GI Pipe, 12 units of (15 feet size) @ ₹ 600 each
- 20mm GI Pipe, 10 units of (15 feet size) @ ₹ 660 each
- Other fitting materials, 60 units @ ₹ 26 each
- Stainless Steel Faucet, 6 units @ ₹ 204 each
- Valve, 8 units @ ₹ 404 each

Purchases:

On 16th August 2020:

- 20mm GI Pipe, 30 units of (15 feet size) @ ₹ 610 each
- 10 units of Valve @ ₹ 402 each

On 18th August 2020:

- Other fitting materials, 150 units @ ₹ 28 each
- Stainless Steel Faucet, 15 units @ ₹ 209 each

On 27th August 2020:

- 15mm GI Pipe, 35 units of (15 feet size) @ ₹ 628 each
- 20mm GI Pipe, 20 units of (15 feet size) @ ₹ 660 each
- Valve, 14 units @ ₹ 424 each

Issues for the hostel job:

On 12th August 2020:

- 20mm GI Pipe, 2 units of (15 feet size)
- Other fitting materials, 18 units

On 17th August 2020:

- 15mm GI Pipe, 8 units of (15 feet size)
- Other fitting materials, 30 units

On 28th August 2020:

- 20mm GI Pipe, 2 units of (15 feet size)
- 15mm GI Pipe, 10 units of (15 feet size)
- Other fitting materials, 34 units
- Valve, 6 units

On 30th August 2020:

- Other fitting materials, 60 units
- Stainless Steel Faucet, 15 units

Direct Labour:

Plumber: 180 hours @ ₹ 100 per hour (includes 12 hours overtime)

Helper: 192 hours @ ₹ 70 per hour (includes 24 hours overtime)

Overtimes are paid at 1.5 times of the normal wage rate.

Overheads:

Overheads are applied @ ₹ 26 per labour hour.

Pricing policy:

It is company's policy to price all orders based on achieving a profit margin of 25% on sales price.

You are required to

(a) CALCULATE the total cost of the job.

(b) CALCULATE the price to be charged from the customer.

Question 29 - Rtp

A factory uses job costing system. The following data are obtained from its books for the year ended 31st March, 2020:

	Amount (₹)
Direct materials	18,00,000
Direct wages	15,00,000
Selling and distribution overheads	10,50,000
Administration overheads	8,40,000
Factory overheads	9,00,000
Profit	12,18,000

(i) PREPARE a Job Cost sheet indicating the Prime cost, Cost of Production, Cost of sales and the Sales value.

(ii) In 2019-20, the factory received an order for a job. It is estimated that direct materials required will be ₹ 4,80,000 and direct labour will cost ₹ 3,00,000. DETERMINE what should be the price for the job if factory intends to earn the same rate of profit on sales assuming that the selling and distribution overheads have gone up by 15%. The factory overheads is recovered as percentage of wages paid, whereas, other overheads as a percentage of cost of production, based on cost rates prevailing in the previous year.

Question 30 - Pyq

GHI Ltd. manufactures 'Stent' that is used by hospitals in heart surgery. As per the estimates provided by Pharmaceutical Industry Bureau, there will be a demand of 40 Million 'Stents' in the coming year. GHI Ltd. is expected to have a market share of 2.5% of the total market demand of the Stents in the coming year. It is estimated that it costs ₹ 1.50 as inventory holding cost per stent per month and that the set-up cost per run of stent manufacture is ₹ 225.

Required:

(i) What would be the optimum run size for Stent manufacture?

(ii) What is the minimum inventory holding cost?

(iii) Assuming that the company has a policy of manufacturing 4,000 stents per run, how much extra costs the company would be incurring as compared to the optimum run suggested in (i) above?

Question 31 - Pyq

The following data is presented by the supervisor of a factory for a Job:

	₹ per unit
Direct Material Direct Wages @ ₹ 4 per hour	120
(Departments A-4 hrs, B-7 hrs, C-2 hrs & D-2 hrs)	60
Chargeable Expenses	20
Total	200

Analysis of the Profit and Loss Account for the year ended 31st March, 2019

Material		2,00,000	Sales	4,30,000
Direct Wages				
Dept. A	12,000			
Dept. B	8,000			

Dept. C	10,000			
Dept. D	20,000	50,000		
Special Store items		6,000		
Overheads				
Dept. A	12,000			
Dept. B	6,000			
Dept. C	9,000			
Dept. D	17,000	44,000		
Gross Profit c/d		1,30,000		
		4,30,000		4,30,000
Selling Expenses		90,000	Gross Profit b/d	1,30,000
Net Profit		40,000		
		1,30,000		1,30,000

It is also to be noted that average hourly rates for all the four departments are similar. Required:
(i) Prepare a Job Cost Sheet.
(ii) Calculate the entire revised cost using the above figures as the base.
(iii) Add 20% profit on selling price to determine the selling price.

Question 32 - Rtp

KJ Motors Ltd. is a manufacturer of auto components. Following are the details of expenses for the year 2020-21:

		(₹)
(i)	Opening Stock of Material	15,00,000
(ii)	Closing Stock of Material	20,00,000
(iii)	Purchase of Material	1,80,50,000
(iv)	Direct Labour	90,50,000
(v)	Factory Overhead	30,80,000
(vi)	Administrative Overhead	20,50,400

During the FY 2021-22, the company has received an order from a car manufacturer where it estimates that the cost of material and labour will be ₹ 80,00,000 and ₹ 40,50,000 respectively. The company charges factory overhead as a percentage of direct labour and administrative overheads as a percentage of factory cost based on previous year's cost.
Cost of delivery of the components at customer's premises is estimated at ₹ 9,50,000. You are required to:
(i) CALCULATE the overhead recovery rates based on actual costs for 2020-21.
(ii) PREPARE a Job cost sheet for the order received and the price to be quoted if the desired profit is 25% on sales.

Question 33 - Pyq

In a manufacturing company, the overhead is recovered as follows: Factory Overheads: a fixed percentage basis on direct wages and Administrative overheads: a fixed percentage basis on factory cost.
The company has furnished the following data relating to two jobs undertaken by it in a period.

	Job 1 (₹.)	**Job 2 (₹.)**
Direct materials	1,08,000	75,000
Direct wages	84,000	60,000
Selling price	3,33,312	2,52,000

Profit percentage on total cost	12%	20%

You are required to:
Compute the percentage recovery rates of factory overheads and administrative overheads.
Calculate the amount of factory overheads, administrative overheads and profit for each of the two jobs.
Using the above recovery rates, determine the selling price to be quoted for job 3. Additional data pertaining to Job 3 is as follows:

Direct materials	₹. 68,750
Direct wages	₹. 22,500
Profit percentage on selling price	15%

Question 34 - Pyq

A Ltd. is a pharmaceutical company which produces vaccines for diseases like Monkey Pox, Covid-19 and Chickenpox. A distributor had given an order for 1,600 Monkey Pox Vaccines. The company can produce 80 vaccines at a time. To process a batch of 80 Monkey Pox vaccines, the following costs would be incurred:

Direct Materials	4,250
Direct wages	500
Lab set-up cost	1,400

The Production Overheads are absorbed at a rate of 20% of direct wages and 20% of total production cost is charged in each batch for Selling, distribution and administration Overheads. The company is willing to earn profit of 25% on sales value.
You are required to determine:
I. Total Sales value for 1,600 Monkey Pox Vaccines
II. Selling price per unit of the Vaccine.

Process Costing & Operation Costing

Question 1 - Study Material

A product passes through process-I and process- II. Materials issued to process-I amounted to 40,000, wages 30,000 and manufacturing overheads were 27,000. Normal loss anticipated was 5% of input. 4,750 units of output were produced and transferred out from process-I. There were no opening stocks. Input raw material issued to process-I were 5,000 units. Scrap has no realisable value.
You are required to prepare process-I account, value of normal loss and units transferred to process-II.

Question 2 - Study Material

A product passes through process-I and process- II. Materials issued to process-I amounted to 40,000, wages 30,000 and manufacturing overheads were 27,000. Normal loss anticipated was 5% of input. 4,750 units of output were produced and transferred out from process-I. There were no opening stocks. Input raw material issued to process-I were 5,000 units. Scrap has realisable value of 2 per unit.
You are required to prepare process-I account, value of normal loss and units transferred to process-II.

Question 3 - Study Material

A product passes through process-I and process- II. Materials issued to process-I amounted to 40,000, wages 30,000 and manufacturing overheads were 27,000. Normal loss anticipated was 5% of input. 4,550 units of output were produced and transferred out from process-I. There were no opening stocks. Input raw material issued to process-I were 5,000 units. Scrap has realisable value of 2 per unit.
You are required to prepare process-I account, value of normal loss and units transferred to process-II.

Question 4 - Study Material

A product passes through process-I and process- II. Materials issued to process-I amounted to 40,000, wages 30,000 and manufacturing overheads were 27,000. Normal loss anticipated was 5% of input. 4,850 units of output were produced and transferred out from process-I. There were no opening stocks. Input raw material issued to process-I were 5,000 units. Scrap has realisable value of 2 per unit.
You are required to prepare process-I account, value of normal loss and units transferred to process-II.

Question 5 - Study Material

A product passes through three processes A, B and C. The normal loss of each process is as follows: Process A – 3%, Process B – 5% and Process C – 8%.
Loss of Process A was sold at 25 paise per unit, that of B at 50 paise per unit and that of C at Re. 1.00 per unit. 10,000 units were introduced to Process A at Re. 1.00 per unit. The other expenses were as follows:

	A (₹.)	B (₹.)	C (₹.)
Materials	1,000	1,500	500
Labour	5,000	8,000	6,500
Direct Expenses	1,050	1,188	2,009
Actual Output (in units)	9,500	9,100	8,100

Prepare the Process Accounts, assuming that there was no opening or closing stocks.

Question 6 - Pyq

A product passes from Process I & Process II. Materials issued to Process I amounted to 40,000, Labour 30,000 & Manufacturing Overheads were 27,000. Normal Loss was 3% of input as estimated. But 500 more units of output of Process I were lost due to carelessness of worke Only 4,350 units of output were transferred to Process II. There were no Opening Stocks. Input Raw Material issued to Process I were 5,000 units.
You are required to show Process I Account.

Process Account with Normal Loss A/c, Abnormal Loss A/c and Abnormal Gain A/c

Question 7 - Study Material, Pyq

RST Limited processes Product Z through two distinct processes I and II. On completion, it is transferred to Finished Stock. From the following information for the year, prepare Process I, Process II and Finished Stock A/c.

Particulars	Process I	Process II
Raw Materials used	7,500 units	-
Raw Materials Cost per unit	60	-

Transfer to next Process/Finished Stock	7,050 units	6,525 units
Normal Loss (on Inputs)	5%	10%
Direct Wages	1,35,750	1,29,250
Direct Expenses	60% of Direct Wages	65% of Direct Wages
Manufacturing Overheads	20% of Direct Wages	15% of Direct Wages
Realisable Value of Scrap per unit	12.50	37.50

6,000 units of Finished Goods were sold at a profit of 15% on Cost. Assume that there was no Opening or Closing Stock of WIP.

Question 8 - Pyq, Rtp (Similar)

JK Ltd produces a Product AZE, which passes through two processes, viz, Process I and Process II. The output of each process is treated as the Raw Material of the next process to which it is transferred and output of the Process II is transferred to finished stock. The following data related to December:

Particulars	Process I	Process II
25,000 units introduced at a cost of	2,00,000	-
Material Consumed	1,92,000	96,020
Direct Labour	2,24,000	1,28,000
Manufacturing Expenses	1,40,000	60,000
Normal Wastage of Input	10%	10%
Scrap Value of Normal Wastage (per unit)	9.90	8.60
Output in Units	22,000	20,000

Prepare – (a) Process I and Process II A/c, and (b) Abnormal Loss/Gain Account as the case May be, for each process.

Question 9 - Pyq

A Toothpowder Manufacturer produces bulk quantities of Toothpowder from two Raw Materials A and B. Material A is introduced into Process I from which the output goes to Process II where Material B is introduced. During March, the Company purchased 80,000 kg of Material A which was introduced into Process I. Production details of Process I & Costs are:

Material A purchased	80,000 kg at 6 per kg
Processing Cost (excluding Labour)	63 hours at 30 per hour
Labour Cost	80 per hour
Standard Yield	90 percent of Input
General Overhead recovered at	125 percentage of Labour Cost
Waste from this process sold at	1.50 per kg

Actual Output from this process was 70,000 kg, which was transferred to Process II.
The Company used in Process II, 70,000 kg of output of Process I together with 30,000 kg of Material B purchased. The production details of Process II and Costs are:

Material B purchased	30,000 kg at 2 per kg
Processing Cost (excluding Labour)	45 hours at 20 per hour
Labour Cost	40 per hour
Standard Yield	95 percent of Input
General Overhead recovered at	50 percentage of Labour Cost
Waste from this process sold at	1.00 per kg

Actual Output of Process II was 96,000 kg which was transferred to Finished Stock.
There was an inquiry for a quantity of 1,700 kg of specially prepared waste material from Process I. This material would have to be specially processed and packed incurring the following cost – Processing – 0.90 per kg, Packaging – 0.40 per kg.
This specially prepared waste incurs no process loss and could be entirely sold at 3.20 per kg.
You are required to:

1. Record the information in the Process Cost Accounts, before the inquiry was received and show the Overall Profit or Loss transferred to the Profit and Loss Account from the Abnormal Gains or Losses in processing.
2. Advise the Management on whether or not they should produce 1,700 kg of specially processed waste material from Process I, and the effect on the overall results of the Company.

Process Account and Journal Entries to show the Loss of Spoilt units

Question 10 -

Fifty units are introduced into a process at a cost of 50. The total additional expenditure incurred by the process is 32. Of the units introduced 10 per cent are normally spoiled in the course of manufacture; these possess a scrap value of Re. 0.20 each. Owing to an accident only 40 units are produced.
You are required to:
(i) Prepare a Process Account and
(ii) Give journal entries to show how the loss arising out of spoilt units should be treated.

More than One Process and Computation of Selling Price

Question 11 - Pyq

A product passes through two processes. The output of Process I becomes the input for Process II and the output of Process II is transferred to the Warehouse. The quantity of Raw Materials introduced into Process I is 20,000 kg at 10 per kg. The cost and output data for the month under review are as below:

Particulars	Process I	Process II
Direct Materials	60,000	40,000
Direct Labour	40,000	30,000
Production Overheads	39,000	40,250
Normal Loss	8%	5%
Output	18,000 kg	17,400 kg
Loss realisation per unit	2.00	3.00

The Company's policy is to fix the Selling Price of the end product in such a way as to yield a profit of 20% on Selling Price. You are required to –
1. Prepare the Process Accounts
2. Determine the Selling Price per unit of the end product.

Process A/c with Process Stock A/c
WAC Method of Stock Valuation

Question 12 - Rtp

The product manufacture by Alkali Ltd passes through three processes I, II and III. The following costs have been incurred for the month of April.

Details	Process I	Process II	Process III
Material Consumed	40,000	15,000	10,000
Direct Wages	45,000	20,000	20,000
Direct Expenses	41,000	4,500	5,010
Total	1,26,000	39,500	35,010
Output (units)	3,900	3,850	3,200
Finished Process Stock (units)			
(1) 1st April	600	550	800
(2) 30th April	500	800	Nil
Stock Valuation on 1st April (per unit)	49	62	74
Percentage of Wastage	2%	5%	10%
Net Realisable Value of wastage per unit	27	32.50	42.00

4,000 units of Raw Materials were introduced in Process I at a cost of 80,000. Stocks are valued and transferred to subsequent process at Weighted Average Cost. The percentage of wastage is computed on the number of units entering the process concerned. Prepare –
(i) Process Accounts and Process Stock Accounts
(ii) Normal Wastage Account

(iii) Abnormal Wastage/Effective Gain Account.

Question 13 - Pyq

PQR Ltd. processes a range of product including a toy 'Alpha', which passes through three processes before completion and transfer to the finished goods warehouse. The information relating to the month of October 2019 are as follows:

Particulars	Process-I	Process-II	Process-III	Total
Raw materials (2,000 units)	₹ 12,000	-	-	₹ 12,000
Direct raw material added in process	₹ 17,000	₹ 19,000	₹ 11,000	₹ 47,000
Direct wages	₹ 8,000	₹ 12,000	₹ 24,000	₹ 44,000
Direct expenses	₹ 2,400	₹ 1,860	₹ 2,680	₹ 6,940
Production overhead	-	-	-	₹ 33,000
Outputs (Units)	1,840	1,740	1,580	
Normal loss in process of input (%)	10	5	10	
Scrap value per unit	₹ 2	₹ 5	₹ 10	

The production overhead is absorbed as a percentage of direct wages. There was no opening and closing stock. Prepare the following accounts:
Process-I
Process-II
Process-III
Abnormal Loss
Abnormal Gain

Question 14 - Pyq

A manufacturing unit manufactures a product 'XYZ' which passes through three distinct Processes – X, Y and Z. The following data is given :

	Process - X	Process - Y	Process - Z
Material consumed (in ₹)	2,600	2,250	2,000
Direct Wages (in ₹)	4,000	3,500	3,000

- The total production overhead of ₹ 15,750 was recovered @ 150% of Direct Wages.
- 15,000 units at ₹ 2 each were introduced to Process 'X'.
- The output of each process passes to the next process and finally, 12,000 units were transferred to Finished Stock Account from Process 'Z'.
- No stock of materials or work in progress was left at the end.

The following additional information is given :

Process	% of wastage to normal input	Value of Scrap per unit (₹)
X	6%	1.10
Y	?	2.00
Z	5%	1.00

You are required to :
(i) Find out the percentage of wastage in Process 'Y' , given that the output of Process 'Y' is transferred to Process 'Y' is transferred to Process 'Z' at ₹ 4 per unit.
(ii) Prepare Process accounts for all the three processes X , Y ,and Z.

Question 15 - Pyq

N Ltd. produces a product which passes through two processes – Process – I and Process-II. The company has provided following information related to the Financial Year 2021-22:

	Process-I	Process -II
Raw Material @₹. 65 per unit	6,500 units	-
Direct Wages	₹. 1,40,000	₹. 1,30,000
Direct Expenses	30% of Direct Wages	35% of Direct Wages
Manufacturing Overheads	₹. 21,500	₹. 24,500
Realisable value of scrap per unit	₹. 4.00	₹. 16.00

Normal Loss	250 units	500 units
Units transferred to Process-II / finished stock	6,000 units	5,500 units
Sales	-	5,000 units

There was no opening or closing stock of work-in progress.
You are required to prepare:
1. Process-I Account
2. Process -II Account
3. Finished Stock Account

Inter Process Transfer and Profit
Mark up on Opening Stock- Stock Valuation at Prime Cost
Question 16 - Pyq

A Product passes through three Processes 'X', 'Y', 'Z'. The output of Process 'X' and 'Y' is transferred to next Process at Cost plus 20% each on Transfer Price and the output of Process Z is transferred to Finished Stock at a profit of 25% on Transfer Price.
The following information is available in respect of the year ending 31st March:

Particulars	Process X	Process Y	Process Z	Finished Stock
Opening Stock	15,000	27,000	40,000	45,000
Material Stock	80,000	65,000	50,000	-
Wages	1,25,000	1,08,000	92,000	-
Manufacturing Overheads	96,000	72,000	66,500	-
Closing Stock	20,000	32,000	39,000	50,000
Inter-Process Profit included in Opening Stock	Nil	4,000	10,000	20,000

Stock in Process is valued at Prime Cost. Finished Stock is valued at the price at which it is received from Process 'Z'. Sales of the Finished Stock during the period was 14,00,000.
Required:
(a) Prepare Process Accounts and Finished Stock Account showing profit element at each stage.
(b) Show the Profit and Loss Account.
(c) Show the relevant items in the Balance Sheet.

Inter Process Profits and Statement of Profit
Question 17 - Pyq

A product passes through three Process A, B and C. The details of expenses incurred on the three processes during the year were as under:

Process	A	B	C
Units issued/introduced @ 100 per unit	10,000		
Sundry Materials	10,000	15,000	5,000
Labour	30,000	80,000	65,000
Direct Expenses	6,000	18,150	27,200
Selling price per unit of output	120	165	250

Management expenses during the year were 80,000 and selling expenses were 50,000. These are not allocable to the processes. Actual output of the three processes was: A: 9,300 units; B: 5,400 units; C: 2,100 units.
Two-thirds of the output of Process A and one-half of the output Process B and was passed on the next process and the balance was sold. The entire output of Process C was sold.
The normal loss of the three processes, calculated on the input of every process, was:
Process A 5%, B 15% and C 20%. The loss of Process A was sold at 2 per unit that of B at 5 per unit and of Process C at 10 per unit.
Prepare the three Process Accounts and the Statement of Profit.

Inter Process Profits – Valuation at Prime Cost
Question 18 - Study Material, Pyq

Pharma Limited produces product 'Glucodin' which passes through two processes before it is completed and transferred to Finished Stock. The following data relates to March –

Particulars	Process – I	Process – II	Finished Stock
Opening Stock	1,50,000	1,80,000	4,50,000
Direct Materials	3,00,000	3,15,000	-
Direct Wages	2,24,000	2,25,000	-
Factory Overheads	2,10,000	90,000	-
Closing Stock	74,000	90,000	2,25,000
Inter Process Profit included in Opening Stock	Nil	30,000	1,65,000

Output of Process I is transferred to Process II at 25% Profit on the transferred price, whereas output of Process II is Finished Stock at 20% on Transfer Price. Stock-in-Process are valued at Prime Cost. Finished Stock is valued at the price at which it is received from Process II. Sales for the month is 28,00,000.
You are required to prepare Process-I Account, Process-II Account, and Finished Stock Account, showing the profit element at each stage.

Question 19 - Study Material

A Ltd. produces product 'AXE' which passes through two processes before it is completed and transferred to finished stock. The following data relate to October 2020:

	Process- I (₹)	Process- II (₹)	Finished Stock (₹)
Opening stock	7,500	9,000	22,500
Direct materials	15,000	15,750	--
Direct wages	11,200	11,250	--
Factory overheads	10,500	4,500	--
Closing stock	3,700	4,500	11,250
Inter-process profit included in opening stock	--	1,500	8,250

Output of Process- I is transferred to Process- II at 25% profit on the transfer price. Output of Process- II is transferred to finished stock at 20% profit on the transfer price. Stock in processes is valued at prime cost. Finished stock is valued at the price at which it is received from process II. Sales during the period are ₹ 1,40,000. PREPARE Process cost accounts and finished goods account showing the profit element at each stage.

Reverse Working on Input Quantity

Question 20 - Pyq

Product KLIM passes through 5 operations. The output of the 5th Operation becomes the Finished Product. The Input, Rejection, Output and Labour and Overheads of each Operation for a period are as under –

Operation	Input (Units)	Rejection (Units)	Output (Units)	Labour & OH (₹.)
1	21,600	5,400	16,200	1,94,400
2	20,250	1,350	18,900	1,41,750
3	18,900	1,350	17,550	2,45,700
4	23,400	1,800	21,600	1,40,400
5	17,280	2,880	14,400	86,400

You are required to:
1. Determine the Input required in each operation for one unit of Final Output.
2. Calculate the Labour and Overhead Cost at each operation for one unit of Final Output, and the Total Labour and Overhead Cost of all operations for one unit of Final Output.

Quantity Reconciliation

Question 21 - Study Material

In a manufacturing unit, raw materials passes through four Process I, II, III and IV and the output of each process is the input of the subsequent processes. The loss in the four processes I, II, III and IV are respectively 25%, 20%, 20% and 16 2/3% of the input. If the end product at the end of Process IV is 40,000 kg what is the quantity of raw material required to be fed at the beginning of Process I and the cost of same at 50 per kg. Also find out the effect of increase or decrease in the material cost of the end product for variation of every rupee in the cost of raw material.

Determination of Unit Costs and Inventory Valuation

Question 22 - Pyq

RST Ltd manufactures Plastic Moulded Chair. Three models of moulded chairs, all variation of the same design are Standard, Deluxe and Executive. The Company uses an Operation Costing system.
RST Ltd has Extrusion, Form, Trim and Finish Operations. Plastic Sheets are produced by the Extrusion Operation. During the Forming Operation, the Plastic Sheets are moulded into Chair Seats and the legs are added. The Standard Model is sold after this operation. During the Trim Operation, the arms are added to the Deluxe and Executive Models, and the chair edges are smoothed. Only the Executive Model enters the Finish Operation, in which padding is added. All of the units produced receive the same steps within each operation.
In April, units of production and Direct Material Cost incurred are as follows:

Model	Units Produced	Extrusion Materials	Form Materials	Trim Materials	Finish Materials
Standard Model	10,500	1,26,000	42,000	0	0
Deluxe Model	5,250	63,000	21,000	15,750	0
Executive Model	3,500	42,000	14,000	10,500	21,000
Total	19,250	2,31,000	77,000	26,250	21,000

The total conversion Costs for the month of April, are:

Operation	Total conversion Costs
Extrusion Operation	6,06,375
Form Operation	2,97,000
Trim Operation	1,55,250
Finish Operation	94,500

Required:
1. For each product produced by RST Ltd during April, determine the Unit Cost and the Total Cost.
2. Now consider the following information for May. All unit costs in May are identical to the April unit costs calculated as above in (1). At the end of May, 1,500 units of the Deluxe Model remain in Work–in–Progress. These units are 100% complete as to Materials and 65% complete in the Trim Operation. Determine the cost of the Deluxe Model Work–in–Progress inventory at the end of May.

Purifying Process A/c and Royalty Payable A/c

Question 23 - Pyq

The product manufacture by Alkali Ltd passes through three processes I, II and III. The following costs have been incurred for the month of April.

Details	Process I	Process II	Process III
Material Consumed	40,000	15,000	10,000
Direct Wages	45,000	20,000	20,000
Direct Expenses	41,000	4,500	5,010
Total	1,26,000	39,500	35,010
Output (units)	3,900	3,850	3,200
Finished Process Stock (units)			
(1) 1st April	600	550	800
(2) 30th April	500	800	Nil
Stock Valuation on 1st April (per unit)	49	62	74
Percentage of Wastage	2%	5%	10%
Net Realisable Value of wastage per unit	27	32.50	42.00

4,000 units of Raw Materials were introduced in Process I at a cost of 80,000. Stocks are valued and transferred to subsequent process at Weighted Average Cost. The percentage of wastage is computed on the number of units entering the process concerned.

Prepare:
(a) Process Accounts and Process Stock Accounts
(b) Normal Wastage Account
(c) Abnormal Wastage/Effective Gain Account.

Question 24 - Rtp

The following data have been collected for a Process:

- Opening Stock — Nil
- Input Units — 2,800 Units
- Cost of Input — 16,695
- Output to Finished Goods — 2,000 units
- Closing Stock (70% Complete) — 450 units
- Process Loss — 350 units

Normal Loss is 10%. Compute Equivalent Production and find the cost of output and Abnormal Loss. Prepare Process A/c.

Question 25 - Study Material

An English willow company who manufactures cricket bat buys wood as its direct material. The Forming department processes the cricket bats and the cricket bats are then transferred to the Finishing department where stickers are applied. The Forming department began manufacturing 10,000 initial bats during the month of December for the first time and their cost is as follows:

Direct material:	₹ 33,000
conversion costs:	₹ 17,000
Total	₹ 50,000

A total of 8,000 cricket bats were completed and transferred to the Finishing department, the rest 2,000 were still in the Forming process at the end of the month. All of the forming departments direct material were placed, but, on average, only 25% of the conversion costs was applied to the ending work in progress inventory.
CALCULATE:
(i) Equivalent units of production for each cost.
(ii) The conversion cost per Equivalent units.
(iii)Cost of closing work in process (WIP) and finished products.

FIFO – first Process

Question 26 - Rtp, Pyq

The following data are available in respect of a manufacturing concern for a Particulars period –

- Opening Stock of Work-in-Progress: 800 units at a Total Cost of 4,000.
  Degree of Completion:
- Materials 100%
- Labour 60%
- Overheads 60%
- Input of Materials at a Total Cost of 36,800 for 9,200 units.
- Direct Wages incurred 16,740.
- Production Overheads 8,370.
- Units scrapped 1,200 units.
  Degree of Completion:
  Materials 100%
  Labour 80%
  Overheads 80%
- Closing Work-in-Progress: 900 units.
  Degree of Completion:
  Materials 100%
  Labour 70%
  Overheads 70%
- 7,900 units were completed and transferred to the next process.
- Normal Loss is 8% of the Total Input (Opening Stock plus units put in)
- Scrap Value is 4 per unit.

You are required to:

1. Prepare a Statement of Equivalent Production showing the Cost per Equivalent Unit for each element.
2. Compute the cost of units transferred to the next process, Abnormal Loss and Closing Work in Progress using the FIFO method.
3. Prepare Process Account.

Question 27 - Study Material

Hill manufacturing Ltd uses process costing to manufacture Water density sensors for hydro sector. The following information pertains to operations for the month of May.

Particulars	Units
Beginning WIP, May 1	16,000
Started in production during May	1,00,000
Completed production during May	92,000
Ending work in progress, May 31	24,000

The beginning work in progress was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for material and 40% complete for conversion costs.
Costs pertaining to the month of May are as follows:
Beginning inventory costs are material ₹ 27,670, direct labour ₹ 30,120 and factory overhead ₹ 12,720
Cost incurred during May are material used, ₹ 4,79,000, direct labour ₹ 1,82,880, factory overheads ₹ 3,91,160.
CALCULATE:
(i) Using the FIFO method, the equivalent units of production for material.
(ii) Cost per equivalent unit for conversion cost.

Question 28 - Pyq

MNO Ltd has provided following details:

- Opening work in progress is 10,000 units at ₹ 50,000 (Material 100%, Labour and overheads 70% complete).
- Input of materials is 55,000 units at ₹ 2,20,000. Amount spent on Labour and Overheads is ₹ 26,500 and ₹ 61,500 respectively.
- 9,500 units were scrapped; degree of completion for material 100% and for labour & overheads 60%.
- Closing work in progress is 12,000 units; degree of completion for material 100% and for labour & overheads 90%.
- Finished units transferred to next process are 43,500 units.
- Normal loss is 5% of total input including opening work in progress. Scrapped units would fetch ₹ 8.50 per unit.

You are required to prepare using FIFO method:
(i) Statement of Equivalent production
(ii) Abnormal Loss Account

Question 29 - Pyq

Following information is available regarding Process A for the month of October.
Production Records:
(a) Opening Work-in-Progress (Materials 100% complete, and 25% complete for Labour and Overhead)
40,000 units
(b) Units introduced 1,80,000 units
(c) Units completed 1,50,000 units
(d) Units in Process on 31st October (Materials 100% complete, 50% complete for Labour and Overhead)
70,000 units

Cost Records:
Opening Work-in-Progress:
Materials 1,00,000
Labour 25,000
Overheads 45,000
Cost incurred during the month:
Materials 6,60,000

Labour 5,55,000

Overheads 9,25,000

Assume that FIFO Method is used for WIP Inventory Valuation. Required:
(i) Statement of Equivalent Production
(ii) Statement showing Cost for each element
(iii) Statement of Apportionment of Cost
(iv) Process 'A' Account.

Question 30 - Rtp, Pyq

The following data are available in respect of Process I for the month of October:

Opening Work-in-Progress	2,250 units at	11,250
Degree of Completion:		
Materials		100%
Labour		60%
Overheads		60%
Input of Materials	22,750 units at	88,500
Direct Wages		20,500
Production Overheads		41,000
Units Scrapped		3,000 Units
Degree of Completion:		
Materials		100%
Labour		70%
Overheads		70%
Closing Work-in-Progress		2,500 units
Degree of Completion:		
Materials		100%
Labour		80%
Overheads		80%
Units transferred to the next process:		19,500 units

Normal Process Loss is 10% of Total Input (Opening Stock plus units put in). Scrap Value is 3.00 per unit. The Company follows FIFO method of inventory valuation.

You are required to:
1. Prepare Statement of Equivalent Production,
2. Prepare Statement of Cost per Equivalent Unit for each element and Cost of Abnormal Loss, Closing Work in Progress and units transferred to next process, and
3. Prepare Process Accounts.

FIFO – Subsequent Process

Question 31 - Pyq

The following data relate to Process Q:

1. Opening Work-in-Progress		4,000 units.
Degree of completion:		
Materials	100%	24,000
Labour	60%	14,400
Overheads	60%	7,200
2. Received during April,1998 from Process P:		
40,000 units at a cost of		1,71,000
3. Expenses incurred in Process Q during the month:		
Materials		79,000
Labour		1,38,230
Overheads		69,120
4. Closing Work-in-Progress		3,000 units
Degree of completion:		
Materials		100%
Labour & Overheads		50%
5. Units scrapped		4,000 units

Degree of completion:

Materials	100%
Labour & Overheads	80%
6. Normal Loss	5% of current input.
7. Spoiled goods realized	1.50 each on sale.
8. Completed units are transferred to Warehouse	37,000 units.

Prepare:
(i) Equivalent Units Statement,
(ii) Statement of Cost per Equivalent Unit and Total Costs,
(iii) Process Q Account, and
(iv) Any other account necessary.

Question 32 - Pyq

XP Ltd furnishes you the following information relating to Process II.

- Opening Work-in-Progress – Nil
- Units introduced 42,000 units @ 12
- Expenses debited to the Process:

Particulars	Amount (₹.)
Direct Material	61,530
Labour	88,820
Overheads	1,76,400

- Normal Loss in the Process = 2% of input.
- Closing Work-in-Progress – 1,200 units

Degree of completion –

Materials	100%
Labour	50%
Overhead	40%

- Finished output – 39,500 units
- Degree of completion of Abnormal Loss:

Materials	100%
Labour	80%
Overhead	60%

- Units scrapped as Normal Loss were sold at 4.50 per unit.
- All the units of Abnormal Loss were sold at 9 per unit.

Prepare:
(i) Statement of Equivalent Production.
(ii) Statement showing the Cost of Finished Goods, Abnormal Loss & Closing Work-in-Progress.
(iii) Process II Account and Abnormal Loss Account.

Question 33 - Pyq

From the following information for the month ending October, prepare Process Cost Account for Process III. Use first-in-first-Out (FIFO) Method to value Equivalent Production.

Direct Materials added in Process III (Opening WIP)	2,000 units at 25,750 (Materials 80%, Labour and Overhead 60%)
Transfer from Process II	53,000 units at 4,11,500
Transfer to Process IV	48,000 units
Transfer Stock of Process III	5,000 units (Materials 70% Labour and Overhead 50%)
Units scrapped	2,000 units (Materials 100%, Labour and Overhead 70%)
Direct Materials added in Process III	1,97,600
Direct Wages	97,600
Production Overheads	48,800

Normal Loss in the process was 5% of production and scrap was sold at ₹ 3 per unit.

Question 34 - Pyq

From the following information for the month of October 2003, prepare Process III Cost Accounts.

Opening WIP in Process III	1,800 units at ₹ 27,000
Transfer from Process II	47,700 units at ₹ 5,36,625
Transferred to Warehouse	43,200 units
Closing WIP of Process III	4,500 units
Units scrapped	1,800 units
Direct Material added in Process III	₹ 1,77,840
Direct Wages	₹ 87,840
Production Overheads	₹ 43,920

Degree of completion

Particulars	Opening Stock	Closing Stock	Scrap
Material	80%	70%	100%
Labour	60%	50%	70%
Overheads	60%	50%	70%

The normal loss in the process was 5% of the production and scrap was sold at ₹ 6.75 per unit.

Question 35 - Pyq

STG Limited is a manufacturer of Chemical 'GK', which is required for industrial use. The complete production operation requires two processes. The raw material first passes through Process I, where Chemical 'G' is produced. Following data is furnished for the month April 2022:

Particulars	(in kgs.)
Opening work-in-progress quantity (Material 100% and conversion 50% complete)	9,500
Material input quantity	1,05,000
Work Completed quantity	83,000
Closing work-in-progress quantity (Material 100% and conversion 60% complete)	16,500

You are further provided that:

Particulars	(in ₹.)
Opening work-in-progress cost	
Material cost	29,500
Processing cost	14,750
Material input cost	3,34,500
Processing cost	2,53,100

Normal process loss May be estimated to be 10% of material input. It has no realizable value. Any loss over and above normal loss is considered to be 100% complete in material and processing.

The Company transfers 60,000 kgs. of output (Chemical G) from Process I to Process II for producing Chemical 'GK'. Further materials are added in Process II which yield 1.20 kg. of Chemical 'GK' for every kg. of Chemical 'G' introduced. The chemicals transferred to Process II for further processing are then sold as Chemical 'GK' for ₹. 10 per kg. Any quantity of output completed in Process I, are sold as Chemical 'G' @ ₹. 9 per kg.

The monthly costs incurred in Process II (other than the cost of Chemical 'G') are: Input 60,000 kg. of Chemical 'G'

Materials Cost ₹. 85,000
Processing Costs ₹. 50,000

You are required:

i. Prepare Statement of Equivalent production and determine the cost per kg. of Chemical 'G' in Process I using the weighted average cost method.

ii. Prepare a statement showing cost of Chemical 'G' transferred to Process II, cost of abnormal loss and cost of closing work-in progress.

iii. STG is considering the option to sell 60,000 kg. of Chemical 'G' of Process I without processing it further in Process-II. Will it be beneficial for the company over the current pattern of processing 60,000 kg in process-II? (Note: You are not required to prepare Process Accounts)

Weighted Average Cost Method (WAC)

WAC – first Process

Question 36 - Study Material(similar), Pyq

ABC Ltd. manufactures a Product 'ZX' by using the process namely RT. For the month of May, 2007, the following data is available:

Particulars	Process RT
Material introduced (units)	16,000
Transfer to next process (units)	14,400
Work in Process:	
At the beginning of the month (units) (4/5 completed)	4,000
At the end of the month (units) (2/3 completed)	3,000
Cost Records:	
Work-in-Process at the beginning of the month	
Materials	30,000
conversion Cost	29,200
Cost during the month: Materials	1,20,000
conversion Cost	1,60,800

Normal spoiled units are 10% of goods finished output transferred to next process. Defects in these units are identified in their finished state. Material for the product is put in the process at the beginning of the cycle of operation, whereas Labour & other Indirect Cost flow evenly over the year. It has no realizable value for spoiled units.

Required:

(a) Statement of Equivalent Production (Average Cost Method);
(b) Statement of Cost & Distribution of Cost;
(c) Process Accounts.

Question 37 - Study Material, Pyq

Following details are related to the work done in Process 'A' of XYZ Company during the month of March, 2007:

Opening Work-in-Progress (2,000 units)	
Materials	80,000
Labour	15,000
Overheads	45,000
Materials introduced in Process 'A' (38,000 units)	14,80,000
Direct Labour	3,59,000
Overheads	10,77,000
Units scrapped: 3,000 units	
Degree of completion:	
Materials	100%
Labour and Overheads	80%
Closing Work-in-Progress: 2,000 units	
Degree of completion:	
Materials	100%
Labour and Overheads	80%

Units finished and transferred to Process 'B': 35,000
Normal Loss: 5% of total input including Opening Work-in-Progress
Scrapped units fetch 20 per piece.
You are required to prepare:

(a) Statement of Equivalent Production ;
(b) Statement of Cost;

(c) Statement of Distribution of Cost; and
(d) Process 'A' Account, Normal and Abnormal Loss Accounts.

Question 38 - Study Material

Following information is available regarding Process-I for the month of February, 2020:

Production Record:

Units in process as on 1.2.2020	4,000
(All materials used, 25% complete for labour and overhead)	
New units introduced	16,000
Units completed	14,000
Units in process as on 28.2.2020	6,000
(All materials used, 33-1/3% complete for labour and overhead)	

Cost Records:

Work-in-process as on 1.2.2020	(₹)
Materials	6,000
Labour	1,000
Overhead	1,000
	8,000

Cost during the month:

Materials	25,600
Labour	15,000
Overhead	15,000
	55,600

Presuming that average method of inventory is used, PREPARE:
(i) Statement of equivalent production.
(ii) Statement showing cost for each element.
(iii) Statement of apportionment of cost.
(iv) Process cost account for Process-I.

Question 39 - Study Material

'Healthy Sweets' is engaged in the manufacturing of jaggery. Its process involve sugarcane crushing for juice extraction, then filtration and boiling of juice along with some chemicals and then letting it cool to cut solidified jaggery blocks.

The main process of juice extraction (Process – I) is done in conventional crusher, which is then filtered and boiled (Process – II) in iron pots. The solidified jaggery blocks are then cut, packed and dispatched. For manufacturing 10 kg of jaggery, 100 kg of sugarcane is required, which extracts only 45 litre of juice.

Following information regarding Process – I has been obtained from the manufacturing department of Healthy Sweets for the month of January, 2020:

	(₹)
Opening work-in process (4,500 litre)	
Sugarcane	50,000
Labour	15,000
Overheads	45,000
Sugarcane introduced for juice extraction (1,00,000 kg)	5,00,000
Direct Labour	2,00,000
Overheads	6,00,000
Abnormal Loss: 1,000 kg	
Degree of completion:	
Sugarcane	100%
Labour and overheads	80%
Closing work-in process: 9,000 litre	
Degree of completion:	
Sugarcane	100%
Labour and overheads	80%

Extracted juice transferred for filtering and boiling: 39,500 litre
(Consider mass of 1 litre of juice equivalent to 1 kg)
You are required to PREPARE using average method:
(i) Statement of equivalent production,

(ii) Statement of cost,
(iii) Statement of distribution cost, and
(iv) Process-I Account.

WAC – Subsequent Process

Question 40 - Rtp, Pyq

The following information is given in respect of Process No. 3 for the month of January, 2001

1. Opening Stock – 2,000 units made-up of:

Direct Materials – I	12,350
Direct Materials – II	13,200
Direct Labour	17,500
Overheads	11,000

2. Transferred from Process No. 2: 20,000 units at 6.00 per unit.
3. Transferred to Process No. 4: 17,000 units
4. Cost uncured in Process No. 3:

Direct Materials	30,000
Direct Labour	60,000
Overheads	60,000

5. Scrap: 1,000 units – Direct Materials 100%, Direct Labour 60%, Overheads 40%
6. Normal Loss 10% of production. Scrapped units realized 4 per unit.
7. Closing Stock: 4,000 units – Degree of completion: Direct Materials 80%, Direct Labour 60% and Overheads 40%.

Prepare Process No. 3 Account using Average Cost Method, along with necessary supporting statements.

Question 41 - Pyq

The following details are available of Process X for August 2011:

(1) Opening work-in-progress 8,000 units
Degree of completion and cost:
Material (100%) 63,900
Labour (60%) 10,800
Overheads (60%) 5,400
(2) Input 1,82,000 units at 7,56,900
(3) Labour paid 3,28,000
(4) Over heads incurred 1,64,000
(5) Units scrapped 14,000
Degree of completion:
Material 100%
Labour and overhead 80%
(6) Closing work-in-process 18000 units
Degree of completion:
Material 100%
Labour and overhead 70%
(7) 1,58,000 units were completed and transferred to next process.
(8) Normal loss is 8% of total input including opening work-in-process
(9) Scrap value is 8 per unit to be adjusted in direct material cost

You are required to compute, assuming that average method of inventory is used:
(i) Equivalent production, and
(ii) Cost per unit

Question 42 - Rtp

A company produces a component, which passes through two processes. During the month of November, 2020, materials for 40,000 components were put into Process- I of which 30,000 were completed and transferred to Process- II. Those not transferred to Process- II were 100% complete as to materials cost and 50% complete as to labour and overheads cost. The Process- I costs incurred were as follows:

Direct Materials	₹ 3,00,000
Direct Wages	₹ 3,50,000
Factory Overheads	₹ 2,45,000

Of those transferred to Process II, 28,000 units were completed and transferred to finished goods stores. There was a normal loss with no salvage value of 200 units in Process II. There were 1,800 units, remained unfinished in the process with 100% complete as to materials and 25% complete as regard to wages and overheads.
Costs incurred in Process-II are as follows:

Packing Materials	₹ 80,000
Direct Wages	₹ 71,125
Factory Overheads	₹ 85,350

Packing material cost is incurred at the end of the second process as protective packing to the completed units of production.
Required:
(i) PREPARE Statement of Equivalent Production, Cost per unit and Process I A/c.
(ii) PREPARE statement of Equivalent Production, Cost per unit and Process II A/c.

Miscellaneous Problems- Equivalent Production first and Subsequent Process – Determination of Sale Price

Question 43 - Pyq

A Company manufactures a product which involves two consecutive processes viz. Pressing & Polishing. For the month of October, the following information is available:

Particulars	Pressing	Polishing
Opening Stock	-	-
Input of units in process	1,200	1,000
Units completed	1,000	500
Units under process at the end of October	200	500
Materials Cost	96,000	8,000
conversion Cost	3,36,000	54,000

For incomplete units in process, charge Materials Cost at 100% and conversion Cost 60% in Pressing Process and 50% in Polishing Process. Prepare a statement and calculate the Selling Price per unit which will result in 25% Profit on Sales.

Equivalent Production – 2 Processes

Question 44 - Study Material, Pyq

A Company produces a component, which passes through two processes. During the month of April, materials for 40,000 components were put into Process I of which 30,000 were completed and transferred to Process II. Those not transferred to Process II were 100% complete as to Materials Cost and 50% complete as to Labour and Overheads Cost. The Process I Costs incurred were as follows:

Particulars	Amount (₹.)
Direct Materials	15,000
Direct Wages	18,000
Factory Overheads	12,000

Of those transferred to Process II, 28,000 units were completed and transferred to Finished Goods Stores. There was a normal loss with no salvage value of 200 units in Process II. There were 1,800 units, remained unfinished in the Process with 100% complete as to Materials and 25% complete as regard to Wages and Overheads.
No further process materials costs occur after introduction at the first process, until the end of the second process, when protective packing is applied to the completed components. The process and packing costs incurred at the end of the Process II were:

Particulars	Amount (₹.)
Packing Materials	4,000
Direct Wages	3,500
Factory Overheads	4,500

Required:
(i) Prepare Statement of Equivalent Production, Cost per Unit & Process I Account.
(ii) Prepare Statement of Equivalent Production, Cost per Unit & Process II Account.

Process Costing and further Processing Decision

Question 45 - Pyq

A Chemical Company carries on production operation in two processes. The material first passes through Process I, where Product A is produced. The following data are given for the month just ended:

Quantity Particulars	Cost Particulars
Material Input Quantity 2,00,000 kgs Opening WIP Quantity 40,000 kgs (Materials 100% and conversion 50% complete) Work Completed Quantity 1,60,000 kgs Closing WIP Quantity 30,000 kgs (Materials 100% and conversion 2/3rd complete)	Material Input Costs 75,000 Processing Costs 1,02,000 Opening WIP Costs: 32,000 (Materials 20,000 + Processing Costs 12,000)

Normal Process Loss in quantity May be assumed to be 20% of Material Input. It has no realizable value. Any quantity of Product A can be sold at 1.60 per kg. Alternatively, it can be transferred to Process II for further processing and then sold as "Product AX" for 2.00 per kg. Further materials are added in Process II, which yield two kgs of "Product AX" for every kg of Product A of Process I.

Of the 1,60,000 kgs per month of work completed in Process I, 40,000 kgs are sold as Product A and the balance 1,20,000 kgs are passed through Process II for sale as "Product AX". Process II has facilities to handle upto 1,60,000 kgs of Product A per month, if required. The monthly costs incurred in Process II (other than the cost of Product A) are –

Cost Element	For 1,20,000 kgs of Product A	For 1,60,00 kgs of Product A
Materials	1,32,000	1,76,000
Processing Costs	1,20,000	1,40,000

Required:

1. Determine using the Weighted Average Cost Method, the cost per kg of Product A in Process I and the value of both completed work and Closing WIP for the month just ended.
2. Is it worthwhile processing 1,20,000 kgs of Product A further?
3. Calculate the minimum acceptable Selling Price per kg if a potential buyer could be found for the additional output of "Product AX" that could be produced with the remaining Product A Quantity.

Profit Statement Under Absorption Costing – Equivalent Production

Question 46 -Rtp

A new Subsidiary of a Group of Companies was established for manufacture and sale of Product "Super". During the first year of operations, 90,000 units were sold at 20 per unit. At the end of the year, the Closing Stocks were 8,000 units in Finished Goods Store and 4,000 units in Work–in–Progress, which were complete as regards material content but only half complete as to Labour and Overheads. Assume no Opening Stocks.

The WIP Account had been debited during the year with the following costs:

- Direct Materials 7,14,000
- Variable Overheads 1,00,000
- Direct Labour 4,00,000
- Fixed Overheads 3,50,000

Selling and Administration Costs for the year were as under –

Particulars	Variable Cost per unit sold	Fixed Costs
Selling	1.50	2,00,000
Administration	0.10	50,000

The Accountants of the Subsidiary Company had prepared a Profit Statement on the absorption costing principle, which showed a profit of 11,000.

You are required to:

1. Prepare a Statement showing the equivalent units produced and the cost of production of one unit of product "Super" by element of cost and in total;
2. Prepare a Profit Statement on Absorption Costing Principles, which agrees with the Accountant's Statement.

Question 47 - Pyq

A Company manufacturing chemical solution that passes through a number of processes uses FIFO method to value Work-in-Process and Finished Goods. At the end of month of September, a fire occurred in the factory and some papers containing records of the process 'operations for the month were destroyed. The Company

desires to prepare process accounts for the month during which the fire occurred. Some information could be gathered as to operating activities as under:
• Opening Work-in-Process at the beginning of the month of 1,100 litres - 40% complete for labour and 60% complete for Overheads. Opening Work-in-Process was valued at 48,260.
• Closing Work-in-Process at the end of the month was 220 litres, 40% complete for Labour and 30% complete for Overheads.
• Normal loss is 10% of input and total losses during the month were 2,200 litres partly due to firm, damage. Assume degree of completion of abnormal losses is 100%.
• Output sent to Finished Goods Warehouse was 5,900 litres.
• Losses have a scrap value of 20 per litre.
• All Raw Materials are added at the commencement of the process.
• The Cost per equivalent Unit (litre) is 53 for the month consisting :

Particulars	
Raw material	35
Labour	8
Overheads	10
Total	53

You are required to :
(i) Calculate the quantity (in litres) of Raw Material input during the month.
(ii) Calculate the quantity (in litres) of Normal Loss and Abnormal loss/Gain experienced in the month.
(iii)Calculate the values of Raw Materials, Labour and Overheads added to the process during the month.
(iv) Prepare the Process Account for the month.

Question 48 - Pyq

Alpha Ltd. Is engaged in the production of a product A which passes through three different processes- Process P, Process Q and Process R. the following data relating to cost and output is obtained from the books of accounts for the month of April,2017:

Particulars	**Process P**	**Process Q**	**Process R**
Direct material	38,000	42,500	42,880
Direct labour	30,000	40,000	50,000

Production overheads of 90,000 were recovered as percentage of direct labour.
10,000 kg of raw material @ 5 per kg was issued to process P. There was no stock of materials or work in progress. The entire output of each process passes directly to the next process and finally to warehouse. There is normal wastage, in processing, of 10%. The scrap value of wastage is Re.1 per kg. The output of each process transferred to next process and finally to warehouse are as under:
Process P = 9,000 kg
Process Q= 8,200 kg
Process R= 7,300 kg
The company fixes selling price of the end product in such a way so as to yield a profit of 25% on selling price. Prepare Process P, Q, R accounts. Also, calculate selling price per unit of end product.

Question 49 - Study Material

A product passes through three processes. The output of each process is treated as raw material of the next process to which it is transferred and output of the third process is transferred to finished stock.

Particulars	**Process-I (₹.)**	**Process-II (₹.)**	**Process-III (₹.)**
Materials used	40,000	20,000	10,000
Labour	6,000	4,000	1,000
Manufacturing overhead	10,000	10,000	15,000

10,000 units have been issued to the process-I and after processing, the output of each process is as under:

Process	**Output**	**Normal loss**
Process-I	9,750 units	2%
Process-II	9,400 units	5%
Process-III	8,000 units	10%

No stock of raw materials or of work-in-progress was left at the end. Calculate the cost of finished goods.

Question 50 - Pyq

M J Pvt. Ltd. produces a product "SKY" which passes through two processes, viz. Process-A and Process-B. The details for the year ending 31st March, 2014 are as follows:

Particulars	Process A	Process B
40,000 units introduced at a cost of	3,60,000	-
Materials consumed	2,42,000	2,25,000
Direct wages	2,58,000	1,90,000
Manufacturing exp.	1,96,000	1,23,720
Output in units	37,000	27,000
Normal wastage of input	5%	10%
Scrap value (per unit)	15	20
Selling price (per unit)	37	61

Additional Information:

(a) 80% of the output of Process-A, was passed on to the next process and the balance was sold. The entire output of Process- B was sold.

(b) Indirect expenses for the year was 4,48,080.

(c) It is assumed that Process-A and Process-B are not responsibility centre.

Required:

(i) Prepare Process-A and Process-B Account.

(ii) Prepare Profit & Loss Account showing the net profit I net loss for the year.

Question 51 - Pyq

A product passes through two processes A and B. During the year 2011, the input to process A of basic raw material was 8,000 units @ ₹. 9 per unit. Other information for the year is as follows:

Particulars	Process A	Process B
Output units	7,500	4,800
Normal loss (% to input)	5%	10%
Scrap value per unit (₹.)	2	10
Direct wages (₹.)	12,000	24,000
Direct materials (₹.)	6,000	5,000
Selling price per unit (₹.)	15	25

Total overheads 17,400 were recovered as percentage of direct wages. Selling expenses were 5,000. There are not allocated to the processes. 2/3 of the output of Process A was passed on to the next process and the balance was sold. The entire output of Process B was sold. Prepare Process A and B Accounts.

Question 52 - Rtp

Star Ltd. manufactures chemical solutions for the food processing industry. The manufacturing takes place in a number of processes and the company uses FIFO method to value work-in-process and finished goods. At the end of the last month, a fire occurred in the factory and destroyed some of papers containing records of the process operations for the month.

Star Ltd. needs your help to prepare the process accounts for the month during which the fire occurred. You have been able to gather some information about the month's operating activities but some of the information could not be retrieved due to the damage. The following information was salvaged:

• Opening work-in-process at the beginning of the month was 1,600 litres, 70% complete for labour and 60% complete for overheads. Opening work-in-process was valued at ₹ 1,06,560.

• Closing work-in-process at the end of the month was 320 litres, 30% complete for labour and 20% complete for overheads.

• Normal loss is 10% of input and total losses during the month were 1,200 litres partly due to the fire damage.

• Output sent to finished goods warehouse was 8,400 litres.

• Losses have a scrap value of ₹ 15 per litre.

• All raw materials are added at the commencement of the process.

• The cost per equivalent unit (litre) is ₹ 78 for the month made up as follows:

	(₹)
Raw Material	46
Labour	14
Overheads	18

	78

(i) CALCULATE the quantity (in litres) of raw material inputs during the month.
(ii) CALCULATE the quantity (in litres) of normal loss expected from the process and the quantity (in litres) of abnormal loss / gain experienced in the month.
(iii) CALCULATE the values of raw material, labour and overheads added to the process during the month.
(iv) PREPARE the process account for the month.

Question 53 - Mtp

An article passes through three successive operations from raw materials stage to the finished product stage. The following data are available from the production records for the month of March, 2021:

Operation	No. of pieces (Input)	No. of pieces (Rejected)	No. of pieces (Output)
1	1,80,000	60,000	1,20,000
2	1,98,000	18,000	1,80,000
3	1,44,000	24,000	1,20,000

(i) DETERMINE the input required to be introduced in the first operation in no. of pieces in order to obtain finished output of 500 pieces after the last operation.
(ii) CALCULATE the cost of raw material required to produce one piece of finished product, if the weight of the finished piece is 0.5 kg. and the price of raw material is ₹ 80 per kg.

Question 54 - Mtp

Navyug Ltd. manufactures chemical solutions for the food processing industry. The manufacturing takes place in a number of processes and the company uses a FIFO process costing system to value work-in-process and finished goods. At the end of the last month, a fire occurred in the factory and destroyed some of the paper files containing records of the process operations for the month.
Navyug Ltd. needs your help to prepare the process accounts for the month during which the fire occurred. You have been able to gather some information about the month's operating activities but some of the information could not be retrieved due to the damage. The following information was salvaged:

- Opening work-in-process at the beginning of the month was 900 litres, 70% complete for labour and 60% complete for overheads. Opening work-in-process was valued at ₹ 29,970.
- Closing work-in-process at the end of the month was 160 litres, 30% complete for labour and 20% complete for overheads.
- Normal loss is 10% of input and total losses during the month were 1,800 litres partly due to the fire damage.
- Output sent to finished goods warehouse was 4,200 litres.
- Losses have a scrap value of ₹ 20 per litre.
- All raw materials are added at the commencement of the process.

· The cost per equivalent unit (litre) is ₹ 39 for the month made up as follows:

	(₹)
Raw material	23
Labour	7
Overheads	9
	39

REQUIRED:
(i) Calculate the quantity (in litres) of raw material inputs during the month.
(ii) Calculate the quantity (in litres) of normal loss expected from the process and the quantity (in litres) of abnormal loss / gain experienced in the month.
(iii) Calculate the values of raw material, labour and overheads added to the process during the month.
Prepare the process account for the month.

Question 55 - Mtp

XYZ Ltd. is manufacturer of medicines. It carries on production operation in two processes. The material first passes through Process I, where Medicine ' X' is produced. Following data are given for the month October, 2022:

Opening work-in-progress quantity (Material 100% and conversion 50% complete)	(in Litre)	12,000

Material input quantity	(in litre)	60,000
Work completed quantity	(in litre)	40,000
Closing work-in-progress quantity (Material 100% and conversion 80% complete)	(in litre)	15,000
Opening work-in-progress cost		
Material cost	(in ₹)	1,75,000
Processing cost	(in ₹)	1,40,000
Material input cost	(in ₹)	7,70,000
Processing cost	(in ₹)	8,35,000

Normal process loss is 15% of material input. It has no realizable value.
Any quantity of Medicine 'X' can be sold for ₹ 42.50 per litre. Alternatively, it can be transferred to Process II for further processing and then sold as Medicine ' XYZ' for ₹ 50 per litre. Further materials are added in Process II, which yield 1.25 litre of Medicine ' XYZ' for every litre of Medicine 'X' of Process I. Out of the 40,000 litre of work completed in Process I, 10,000 litre are sold as Medicine 'X' and 30,000 litre are passed through Process II for sale as Medicine 'XYZ'.
The monthly costs incurred in Process II (other than the cost of Medicine ' X') are:

Input	30,000 litre of Medicine 'X'
Materials Cost	₹ 2,75,000
Processing Costs	₹ 2,50,000

You are required to:
(i) PREPARE Statement of Equivalent production and determine the cost per litre of Medicine 'X' in Process I, using the weighted average cost method.
Company is mulling over the option to sell the 30,000 litre of Medicine ' X' at Process-I without processing it further in Process-II. WILL IT BE beneficial for the company over the current pattern of processing 30,000 litre in process-II?

Question 56 - Rtp

'Dairy Wala Private limited' is engaged in the production of flavoured milk. Its process involve filtration and boiling of milk after that some sugar, flavour, colour is added and then letting it cool to fill the product into clean and sterile bottles. For Producing 10 litre of flavour milk, 100 litre of Raw milk is required, which extracts only 45 litres of standardized milk.
Following information regarding Process – I has been obtained from the manufacturing department of Dairy Wala Private limited for the month of December 2022:

Items	**(₹.)**
Opening work-in process (13,500 litre)	
Milk	1,50,000
Labour	45,000
Overheads	1,35,000
Milk introduced for filtration and boiling (3,00,000 litre)	15,00,000
Direct Labour	6,00,000
Overheads	18,00,000
Abnormal Loss: 3,000 litres	
Degree of completion:	
Milk	100%
Labour and overheads	80%
Closing work-in process: 27,000 litres	
Degree of completion:	
Milk	100%
Labour and overheads	80%
Milk transferred for Packing: 1,18,500 litres	
You are required to PREPARE using average method:	

(i) Statement of equivalent production, (ii) Statement of cost, (iii) Statement of distribution cost, and (iv) Process-I Account.		

Joint Products & By Products

Methods of Joint Cost Apportionment

Question1 - Study Material

Naresh Manufacturing Company produces the following products using 5,000 tons of Coal at a cost of ₹ 15 per ton, into a common process: Coke – 3,500 Tons, Tar – 1,200 Tons, Sulphate of Ammonia – 52 Tons, Benzol – 48 Tons.

200 Tons of the material is lost in process as waste and air evaporation. Labour and Overheads for the process are ₹ 15,000 and ₹ 6,000 respectively. Apportion Joint Costs using physical units method among the products.

Question 2 - Pyq

Ganesh & Co. processes a Raw Material in its Department I to Produce three products, viz, A, B and X at the same split-off stage. During a period 1,80,000 kgs of raw materials were processed in Department I at a total cost of ₹ 12,88,000 and the resultant output of A, B and X were 18,000 kgs, 10,000 kgs and 54,000 kgs respectively. A and B were further processed in Department II at a cost of ₹ 1,80,000 and ₹ 150,000 respectively.

X was further processed in Department III at a cost of ₹ 1,08,000. There is no waste in further processing. The details of sales affected during the period were as under –

Particulars	Product A	Product B	Product X
Quantity Sold (Kgs)	17,000	5,000	44,000
Sales Value (₹)	12,24,000	2,50,000	7,92,000

There were no Opening Stocks. If these products were sold at split-off stage, the Selling Prices of A, B and X would have been ₹ 50, ₹ 40 and ₹ 10 per kg respectively. Required:

(i) Prepare a statement showing the apportionment of joint costs to A, B and X.

(ii) Prepare a statement showing the cost per kg of each product indicating joint cost, further processing cost and total cost separately.

(iii) Prepare a statement showing the product-wise and total profit for the period.

(iv) State with supporting calculations as to whether any or all the products should be further processed or not.

Question 3 -Pyq

ABC Ltd operates a simple chemical process to convert a single material into three separate items, referred to here as X, Y and Z. All three end products are separated simultaneously at a single split-off point.

Product X and Y are ready for sale immediately upon split-off without further processing or any other additional costs. Product Z, however, is processed further before being sold. There is no available market price for Z at the split-off point.

The Selling Prices quoted here are expected to remain the same in the coming year. During the year, the Selling Prices of the items and the total quantities sold were –

X – 186 tons sold at ₹ 1,500 per ton, Y – 527 tons sold for ₹ 1,125 per ton, Z – 736 tons sold for ₹ 750 per ton.

The Total Joint Manufacturing Costs for the year were ₹ 6,25,000. An additional ₹ 3,10,000 was spent to finish Product Z.

There were no opening inventories of X, Y and Z. At the end of the year, the following inventories of complete units were on hand – X – 180 tons, Y – 60 tons, Z – 25 tons. There was no opening or Closing Work-in-Progress.

1. Compute the cost of inventories of X, Y and Z for Balance Sheet purposes, and Cost of Goods Sold for Income Statement purposes, using –
    (a) Net Realizable Value (NRV) Method of Joint Cost Allocation.
    (b) Constant Gross Margin Percentage NRV Method of Joint Cost Allocation.
2. Compare the Gross Margin Percentages for X, Y and Z, using the two methods given above.

Question 4 - Pyq

Two Products P and Q are obtained in a crude form and require further processing at a cost of ₹ 5 for P and ₹ 4 for Q per unit before sale. Assuming a net margin of 25% on cost, their Sale Prices are fixed at ₹ 13.75 and ₹ 8.75 per unit respectively. During this period, the Joint Cost was ₹ 88,000 and the output were 8,000 units of P and 6,000 units of Q. You are required to ascertain the Joint Cost per unit.

Question 5 - Pyq

T Limited produces three joint products X, Y and Z. The products are processed further. Pre-separation costs are apportioned on the basis of weight of output of each joint product. The following data are provided for the month of April, 2022.

Cost incurred up to separation point: ₹. 10,000

	Product X	Product Y	Product Z
Output (in Litre)	100	70	80
	₹.	₹.	₹.
Cost incurred after separation point	2,000	1,200	800
Selling Price per Litre:			
After further processing	50	80	60
At pre-separation point (estimated)	25	70	45

You are required to:

i. Prepare a statement showing profit or loss made by each product after further processing using the presently adopted method of apportionment of pre-separation cost.

ii. Advise the management whether, on purely financial consideration, the three products are to be processed further or not.

Marginal Contribution Method

Question 6 - Study Material

Apportion the Joint Cost on suitable basis and obtain Profit/Loss for each of the Joint Products, from the following data –

Sales: Product A – 100 kg at ₹ 60 per kg, and Product B – 120 kg at ₹ 30 per kg.

Total Costs: Marginal Costs ₹ 4,400 and Fixed Cost ₹ 3,900.

Question 7 - Pyq

A Factory produces two products, 'A' and 'B' from a single process. The joint processing costs during a particular month are :

Direct Material	₹.30,000
Direct Labour	₹. 9,600
Variable Overheads	₹. 12,000
Fixed Overheads	₹. 32,000

Sales: A- 100 units@ ₹. 600 per unit; B – 120 units @ ₹. 200 per unit.

I. Apportion joints costs on the basis of:

(i) Physical Quantity of each product.

(ii) Contribution Margin method, and

II. Determine Profit or Loss under both the methods.

Physical Unit Method, Sales at Split off Point method, and Net Realisable Value Method

Question 8 - Rtp

A Pharmaceutical Company purchases a Raw Material, which is then processed to yield three chemicals: Anarol, Estyl and Betryl. In October the Company purchased 10,000 gallons of the Raw Material at a cost of ₹ 12,50,000 and incurred additional Joint conversion costs of ₹ 7,50,000. The sales and production information for the month are as follows –

Product	Gallons Produced	Price at split off (Per Gallon)	Further Processing Cost	Eventual Sales Price
Anarol	2,000	₹ 350	-	-
Estyl	3,000	₹ 240	-	-
Betryl	5,000	₹ 200	₹ 30	₹ 360

Anarol and Estyl are sold to other pharmaceutical companies at the split off point. Betryl can be sold at the split-off point or processed further and packaged for sale as an asthma medication.

Required:

1. Allocate the Joint Cost to the three Products using – (a) Physical Units Method, (b) Sales-Value at Split-Off Method, and (c) Net Realizable Value Method.

2. Suppose that half of October production of Estyl could be purified and mixed with all of the Anarol to produce a Veterinary Grade Anaesthetic. All further processing costs amount to ₹ 2,25,000. The Selling Price of the Veterinary Grade Anarol is ₹ 650 per gallon. Should the pharmaceutical Company further process the

Anarol into Anaesthetic? Assume that the resultant quantity of Veterinary Grade Anarol produced is 2,000 gallons only.

Question 9 - Pyq, Study Material

Inorganic Chemicals purchases salt and processes it into more refined products such as Caustic Soda, Chlorine and PVC (Polyvinyl Chloride). In the month of April, Inorganic Chemicals purchased Salt for ₹ 40,000. Conversion cost of ₹ 60,000 were incurred upto the split off point, at which time two saleable products were produced. Chlorine can be further processed into PVC. The April Production and Sales information is as follows:

Particulars	Production (Tonnes)	Sales Quantity (Tonnes)	Sales Price (Per Tonne)
Caustic Soda	1,200	1,200	₹ 50
Chlorine	800	-	-
PVC	500	500	₹ 200

All 800 tonnes of Chlorine were further processed, at an incremental cost of ₹ 20,000 to yield 500 tonnes of PVC. There were no beginning or ending inventories of Caustic Soda, Chlorine or PVC in April, 2000.
There is an active market for Chlorine. Inorganic Chemicals could have sold all its April production of Chlorine at ₹ 75 per tonne.
Required:
(i) To calculate how the Joint Cost of ₹ 1,00,000 would be apportioned between Caustic Soda and Chlorine under each of following methods:

(a) Sales value at split off,
(b) Physical measure (method), and
(c) Estimated Net Realizable Value.

(ii) Lifetime Swimming Pool Products offers to purchase 800 tonnes of Chlorine in May, 2000 at ₹ 75 per tonne. This sale of Chloride would mean that no PVC would be produced in May, 2000. How the acceptance of this offer for the month of May would affect Operating Income?

Question 10 - Study Material

'Buttery Butter' is engaged in the production of Buttermilk, Butter and Ghee. It purchases processed cream and let it through the process of churning until it separates into buttermilk and butter. For the month of January, 2020, 'Buttery Butter' purchased 50 Kilolitre processed cream @ ₹ 100 per 1000 ml. Conversion cost of ₹ 1,00,000 were incurred up-to the split off point, where two saleable products were produced i.e. buttermilk and butter. Butter can be further processed into Ghee.
The January, 2020 production and sales information is as follows:

Products	Production (in Kilolitre/tonne	Sales Quantity (in Kilolitre/tonne)	Selling price per Litre/Kg (₹)
Buttermilk	28	28	30
Butter	20	----	----
Ghee	16	16	480

All 20 tonne of butter were further processed at an incremental cost of ₹ 1,20,000 to yield 16 Kilolitre of Ghee. There was no opening or closing inventories of buttermilk, butter or ghee in January, 2020.
Required:
(i) SHOW how joint cost would be apportioned between Buttermilk and Butter under Estimated Net Realisable Value method.
(ii) 'Healthy Bones' offers to purchase 20 tonne of butter in February at ₹ 360 per kg. In case 'Buttery Butter' accepts this offer, no Ghee would be produced in February. SUGGEST whether 'Buttery Butter' shall accept the offer affecting its operating income or further process butter to make Ghee itself?

Question 11 - Pyq

Mayura Chemicals Ltd buys a particular raw material at ₹. 8 per litre. At the end of the processing in Department- I, this raw material splits-off into products X, Y and Z. Product X is sold at the split-off point, with no further processing. Products Y and Z require further processing before they can be sold. Product Y is processed in Department-2, and Product Z is processed in Department-3. Following is a summary of the costs and other related data for the year 2019-20:

Particulars	Department		
	1	2	3

Cost of Raw Material	₹. 4,80,000	-	-
Direct Labour	₹. 70,000	₹. 4,50,000	₹. 6,50,000
Manufacturing Overhead	₹. 48,000	₹. 2,10,000	₹. 4,50,000
	Products		
	X	Y	Z
Sales (litres)	10,000	15,000	22,500
Closing inventory (litres)	5,000	-	7,500
Sale price per litre (₹.)	30	64	50

There were no opening and closing inventories of basic raw materials at the beginning as well as at the end of the year. All finished goods inventory in litres was complete as to processing. The company uses the Net-realisable value method of allocating joint costs.
You are required to prepare:
(i) Schedule showing the allocation of joint costs.
(ii) Calculate the Cost of goods sold of each product and the cost of each item in Inventory.
(iii) A comparative statement of Gross profit.

By Products

Question 12 - Rtp

XY Ltd. manufactures Product A which yields two By-Products B and C. The actual joint expenses of manufacture for a period were ₹ 8,000.
It was estimated that the profit on each product as a percentage of sales would 30%, 25% and 15% respectively. Subsequent expenses were as follows:

Particulars	A (₹)	B (₹)	C (₹)
Materials	100	75	25
Direct Wages	200	125	50
Overheads	150	125	75
Total	450	325	150
Sales	6,000	4,000	2,500

Prepare a statement showing the apportionment of the joint expenses of manufacture over the different products. Also presume that selling expenses are apportioned over the products as a percentage to sales.

Question 13 - Study Material

NN Manufacturing company uses joint production process that produces three products at the split off point. Joint productions costs during September were ₹ 8,40,000. Product information for September was as follows:

Particulars	Product A	Product B	Product C
Units produced	1,500	3,000	4,500
Units sold	2,000	6,000	7,500
Sales prices:			
At the split-off	₹ 100		
After further processing	₹ 150	₹ 175	₹ 50
Costs to process after split-off	₹ 1,50,000	₹ 1,50,000	1,50,000

Assume that product C is treated as a by-product and the company accounts for the by-product at net realizable value as a reduction of joint cost. Assume also that Product B&C must be processed further before they can be sold. FIND OUT the total cost of Product A in September if joint cost allocation is based on net realizable values?

Question 14 -

In the course of manufacture of the main product 'P', by-products 'A' and 'B' also emerge. The joint expenses of manufacture amount to ₹ 1,19,550. All the three products are processed further after separation and sold as per details given:

Main Product By-Products

	P	A	B
Sales	₹ 90,000	₹ 60,000	₹ 40,000
Costs incurred after separation	₹ 6,000	₹ 5,000	₹ 4,000
Profit as percentage on Sales %	25	20	15

Total fixed selling expenses are 10% of total cost of sales which are apportioned to the three products in the ratio of 20 : 40 : 40.
(i) Prepare a statement showing the apportionment of joint costs to the main product and the two by-products.
(ii)If the by-product A is not subjected to further processing and is sold at the point of separation, for which there is a market, at ₹ 58,500 without incurring any selling expenses, would you advise its disposal at this stage? Show the workings.

Question 15 - Pyq

A company manufactures one main product (M_1) and two by-products B_1 and B_2 for the month of January 2013, following details are available.
There are no beginning or closing inventories. Prepare statement showing: 1. Allocation of joint cost; and 2.Product wise and overall profitability of the company for January 2013.

Total Cost upto Separation Point ₹ 2,12,400

	M_1	B_1	B_2
Cost after separation	-	35,000	24,000
No. of units produced	4,000	1,800	3,000
Selling price per units	100	40	30
Estimated net profit as parentage to sales value	-	20%	30%
Estimated selling expenses as percentage to sales value	20%	15%	15%

Question 16 - Study Material

Smile company produces two main products and a by-product out of a joint process. The ratio of output quantities to input quantities of direct material used in the joint process remains consistent on yearly basis. Company has employed the physical volume method to allocate joint production costs to the main products. The net realizable value of the by product is used to reduce the joint production costs before the joint costs are allocated to the main products. Details of company's operation are given in the table below. During the month, company incurred joint production costs of ₹ 10,00,000/- The main products are not marketable at the split off point and thus have to be processed further.

Particulars	Product - A	Product - B	By product
Monthly output in kg.	60,000	1,20,000	50,000
Selling price per kg.	₹ 50	₹ 30	₹ 5
Process costs	₹ 2,00,000	₹ 3,00,000	

FIND OUT the amount of joint product cost that Smile Company would allocate to the product-B by using the physical volume method to allocate joint production costs?

Question 17 - Pyq

A factory producing article A also produces a by-product B which is further processed into finished product. The joint cost of manufacture is given below:
Material - ₹ 5,000
Labour - ₹ 3,000
Overhead - ₹ 2,000
Total - ₹ 10,000
Subsequent cost in ₹ are given below:

	A	B
Material	3,000	1,500
Labour	1,400	1,000
Overheads	600	500
	5,000	3,000

Selling prices are A ₹ 16,000; B ₹ 8,000
Estimated profit on selling prices is 25% for A and 20% for B.
Assume that selling and distribution expenses are in proportion of sales prices. Show how you would apportion joint costs of manufacture and prepare a statement showing cost of production of A and B.

Question 18 - Pyq

A factory is engaged in the production of chemical Bomex and in the course of its manufacture, a by-product Cromex is produced which after further processing has a commercial value. For the month of April 2019, the following are the summarised cost data:

Particulars	Joint Expenses (₹)	Separate Expenses (₹)	
		Bomex	Cromex
Materials	1,00,000	6,000	4,000
Labour	50,000	20,000	18,000
Overheads	30,000	10,000	6,000
Selling price per unit		100	40
Estimated profit per unit of sale of Cromex			5
Number of units produced		2,000 units	2,000 units

The factory uses net realisable value method for apportionment of joint cost to by-products.
You are required to prepare statements showing :
(i) Joint cost allocable to Cromex.
(ii) Product wise and overall profitability of the factory for April 2019.

Question 19 - Pyq

In a chemical manufacturing company, three products A, B and C emerge at a single split off stage in Department P. Product A is further processed in Department Q, Product B in Department R and Product C in Department S. There is no loss in further Processing of any of the three products. The cost data for the month are as under:

Cost of Raw Materials introduced in Department P	₹ 12,68,800
Direct Wages Department	₹
P	3,84,000
Q	96,000
R	64,000
S	36,000

Factory Overheads of ₹ 4,64,000 are to be apportioned to the Departments on Direct Wages basis.
During the month under reference, the Company sold all three products after processing them further as under:

Products	Output Sold (Kg.)	Selling Price per Kg. (₹)
A	44,000	32
B	40,000	24
C	20,000	16

There are no Opening or Closing Stocks. If these products were sold at the split off stage, that is,, without further processing, the Selling Prices would have been ₹ 20, ₹ 22 and ₹ 10 each per kg. respectively for A, B and C.
Required:
(i) Prepare a statement showing the apportionment of Joint Costs to Joint Products.
(ii) Present a statement showing product-wise and total profit for the month under reference as per the Company's current processing policy.
(iii) What processing decision should have been taken to improve the profitability of the Company?
(iv) Calculate the product-wise and total profit arising from your recommendation in (iii) above.

Question 20 - Pyq

A Company produces two Joint Products P and Q in 70 : 30 ratio from basic Raw Materials in Department A. The input-output ratio of Department A is 100 : 85. Product P can be sold at the split-off stage or can be processed further at Department B and sold as Product AR. The input-output ratio of Department B is 100 : 90. Department B is created to process Product P only and to make it Product AR.

- Selling Prices per kg. are – Product P ₹ 85, Product Q ₹ 290 and Product AR ₹ 115.

- Production will be taken up in the next month.
- Raw Materials 8,00,000 kgs, Purchase Price ₹ 80 per kg.
- Monthly Expenses of the Department are given below –

Particulars	Department A (₹ In Lakhs)	Department B (₹ In Lakhs)
Direct Material	35	5
Direct Labour	30	9
Variable Overheads	45	18
Fixed Overheads	40	32
Total	150	64

- Selling Expenses for Product P ₹ 24.60 Lakhs, Product Q ₹ 21.60 Lakhs and Product AR ₹ 16.80 Lakhs.

Required:
1. Prepare a statement showing the apportionment of Joint Costs.
2. State whether it is advisable to produce Product AR or not.

Question 21 - Pyq

The Sunshine Oil Company purchases crude vegetable oil. It does refining of the same. The refining process results in four products produced at the split off point – M, N, O and P.
Product O is fully processed at the split off point. Products M, N and P can be individually further refined into 'Super M', 'Super N' and 'Super P'. In the most recent month (October, 1999), the output at the split off point was:

Product M	3,00,000 gallons
Product N	1,00,000 gallons
Product O	50,000 gallons
Product P	50,000 gallons

The Joint Cost of purchasing the crude vegetable oil and processing it were ₹ 40,00,000.
Sunshine had no beginning or ending inventories. Sales of Product O in October were ₹ 20,00,000. Total output of Products M, N and P was further refined and the sold. Data relating to October, 1999 are as follows:

Products	Further Processing Costs to make Super Products	Sales
'Super M'	₹ 80,00,000	₹ 1,20,00,000
'Super N'	₹ 32,00,000	₹ 40,00,000
'Super P'	₹ 36,00,000	₹ 48,00,000

Sunshine had the option of selling Products M, N and P at the split off point. This alternative would have yielded the following sales for the October, 1999 production:

Product M	₹ 20,00,000
Product N	₹ 12,00,000
Product P	₹ 28,00,000

You are required to answer:
1. How the Joint Cost of ₹ 40,00,000 would be allocated between each product under each of the following methods –
   (a) Sales value at split off;
   (b) Physical output (gallons) and
   (c) Estimated Net Realizable Value.
2. Could Sunshine have increased its October, 1999 operating profits by making different decisions about the further refining of Product M, N or P? Show the effect of the change you recommend on operating profits.

Question 22 - Pyq

A Company's Plant processes 1,50,000 kgs of Raw Material in a month to produce two Products, 'P' and 'Q'. The Cost of Raw Material is ₹ 12 per kg. The Process costs per month are –

Particulars	Amount (₹)
Direct Material	90,000
Direct Wages	1,20,000
Variable Overheads	1,00,000

Fixed Overheads	1,00,000

The Loss in Process is 5% of input and the output ratio of P and Q which emerge simultaneously is 1 : 2. The Selling Prices of the two Products at the point of split off are: P ₹ 12 per kg. and Q ₹ 20 per kg. A proposal is available to Process P further by mixing it with other purchased materials. The entire current output of the Plant can be so processed further to obtain a new Product 'S'. The price per kg. of S is ₹ 15 and each kg of output of S will require one kilogram of input P. The cost of Processing of P into S (including other materials) is ₹ 1,85,000 per month.
You are required to prepare a statement showing the monthly profitability based both on the existing manufacturing operations and on further processing. Will you recommend further processing?

Question 23 - Pyq

A Company produces two Joint Products X and Y, from the same basic material. The processing is completed in three Departments I, II and III.
Materials are mixed in Department I. At the end of this process, X and Y get separated. After separation, X is completed in the Department II and Y is finished is Department III. During a period, 2,00,000 kgs of Raw Material were processed in Department I, at a Total Cost of ₹ 8,75,000, and the resultant 60% becomes X and 30% becomes Y and 10% normally lost in processing.
In Department II $1/6^{th}$ of the quantity received from Department I is lost in processing. X is further processed in Department II at a cost of ₹ 1,80,000.
In Department III further new material added to the material received from Department I and weight mixture is doubled, there is no quantity loss in the Department and Further Processing Cost (with Material Cost) is ₹ 1,50,000.
The details of Sales during the year are:

Particulars	**Product X**	**Product Y**
Quantity sold (kgs)	90,000	1,15,000
Sales Price per kg (₹)	10	4

There were no Opening Stocks. If these products were sold at split-off-point, the Selling Price of X and Y would be ₹ 8 and ₹ 4 per kg respectively.
Required:
1. Prepare a Statement showing the apportionment of Joint Cost to X and Y in proportion of Sales Value at split off point.
2. Prepare a Statement showing the cost per kg of each product indicating Joint Cost, Further Processing Cost and Total Cost separately.
3. Prepare a Statement showing the product wise Profit for the year.
4. On the basis of Profits before and after further processing of Products X and Y, give your comment whether the products should be further processed or not.

Question 24 - Pyq

JKL Limited produces two products – J and K, together with a By-Product L, from a single main process called Process I. Product J is sold at the point of separation at ₹ 55 per kg, whereas Product K is sold for ₹ 77 per kg, after further processing into Product K2. By-Product L is sold without further processing for ₹ 19.25 per kg.
Process I is closely monitored by a team of chemists, who planned the output per 1,000 kg of input materials as follows –
Product J – 500 kg, Product K – 350 kg, Product L – 100 kg, Toxic Waste – 50 kg.
The toxic waste is disposed at a cost of ₹ 16.50 per kg and arises at the end of processing.
Process II which is used for further processing of Product K into K2 has the following cost structure –
Fixed Costs ₹ 2,64,000 per week,
Variable Costs ₹ 16.50 per kg. processed
The following actual data relate to the fi₹t week of the month –

Process I	
Opening Work-in-Progress	Nil
Material Input	40,000 kg costing ₹6,60,000
Direct Labour	₹ 4,40,000
Variable Overheads	₹ 1,76,000
Fixed Overheads	₹ 2,64,000

Outputs from Process I:	Product J	19,200 kg.
	Product K	14,400 kg.
	Product L	4,000 kg.
	Toxic Waste	2,400 kg.
	Closing Work-in-Progress	Nil

Opening Work-in-Progress	Nil
Input of Product K	14,400 kg.
Output of Product K2	13,200 kg.
Closing Work-in-Progress (50% converted and conversion costs were incurred in accordance with the planned cost structure	1,200 kg.

Required:
1. Prepare Process I Account for the first week of the month using the Final Sales Value Method. Attribute the pre-separation costs to Joint Products.
2. Prepare the Toxic Waste Account and Process II Account for the first week of the month.
3. Comment on the method used by JKL Ltd to attribute the pre-separation costs to Joint Products.
4. Advise the management of JKL Limited whether or not, on purely financial grounds, it should continue to Process Product K into K2 –
(a) If Product K could be sold at the point of separation for ₹ 47.30 per kg. and
(b) If the 60% of the weekly Fixed Costs of Process II were avoided by not processing product K further.

Question 25 - Pyq

A company operates a chemical process which produces four Products K, L, M & N from a basic Raw Material. The company's budget for a month is as under:

	₹
Raw Materials Consumption	17,520
Initial Processing Wages	16,240
Initial Processing Overheads	16,240

Product	Production	Sales	Additional Processing Costs after split-off
K	16,000	1,09,600	28,800
L	200	5,600	-
M	2,000	30,000	16,000
N	360	21,600	6,000

The company presently intends to sell Product L at the point of split off without further processing. The remaining products, K, M & N are to be further processed and sold. However, the management has been advised that it would be possible to sell all the four products at the split-off point without further processing and if this course was adopted, the selling prices would be as under:

Product	Selling Price per kg. (₹)
K	4
L	28
M	8
N	40

The Joint Costs are to be apportioned on the basis of the sales value realization at the point of split-off.
Required:
(i) Prepare the statement showing the apportionment of Joint Costs.
(ii) Prepare a statement showing the product wise and total budgeted profit or loss based on the proposal to sell product L at the split-off point and products K, M and N after further processing.
(iii) Prepare a statement to show the product wise and total profit or loss if the alternative strategy to sell all the products at split-off stage was adopted.
(iv) Recommend any other alternative which in your opinion can increase the total profit further. Calculate the total profit as also the product wise profit or loss, based on your recommendation.

Question 26 - Pyq

A Company processes a Raw Material into five products. In Process 1, products AXE and BXE are produced in the ratio of 1 : 1. Product AXE then passes on to Process 2 where it is processed into CXE and DXE. Product BXE is used in Process 3 to produce the product EXE.

Product AXE yields products CXE and DXE in the ratio of 7 : 3 CXE is processed further in Process 4 after which it is sold ₹ 18 per unit. DXE May be sold immediately at ₹ 14.40 per unit or it May be processed further in Process 5 after which it can be sold for ₹ 20.80 per unit.

EXE is processed in Process 6 where normal spoilage of 5% occurs. The spoiled units are disposed of at a price of ₹ 2 per unit. EXE sells at ₹ 15.20 per unit.

The costs incurred during a period are as under:

Process	Output (Units)	Costs (₹)
1	1,00,000	5,41,500
2	50,000	1,50,000
3	50,000	1,08,000
4	35,000	1,30,000
5	15,000	1,00,000
6	47,500	97,000

The output of Process 6 represents good units. The process costs are variable costs.

Required:

1. State with supporting calculations whether the Product DXE should be processed in Process 5 or not.
2. Prepare a statement showing Apportionment of Joint Costs to Products AXE and BXE & Products CXE and DXE.
3. Prepare a statement of Profit for the period based on your decision at (1) above.

Question 27 - Pyq

Pokemon Chocolates manufactures and distributes chocolate products. It purchases Cocoa beans and processes them into two intermediate products:

- Chocolate Powder Liquor Base
- Milk-Chocolate Liquor Base.

These two intermediate products become separately identifiable at a single split off point. Every 500 pounds of cocoa beans yields 20 gallons of Chocolate-Powder Liquor Base and 30 gallons of Milk-Chocolate Liquor Base.

The Chocolate Powder Liquor Base is further processed into Chocolate Powder. Every 20 gallons of Chocolate-Powder Liquor Base yields 200 pounds of Chocolate Powder. The Milk-Chocolate Liquor Base is further processed into Milk-Chocolate. Every 30 gallons of Milk Chocolate Liquor Base yields 340 pounds of Milk Chocolate.

Production and Sales data for October, 2004 are:

- Cocoa Beans Processed 7,500 pounds
- Cost of processing Cocoa Beans to the split off point (including purchase of beans) ₹ 7,12,500

Particulars	Production	Sales	Selling Price
Chocolate Powder	3,000 pounds	3,000 pounds	₹ 190 per pound
Milk Chocolate	5,100 pounds	5,100 pounds	₹ 237.50 per pound

The October, 2004 separable costs of processing Chocolate-Powder Liquor into Chocolate Powder are ₹ 3,02,812.50. The October, 2004 separable costs of processing Milk-Chocolate Liquid Base into Milk-Chocolate are ₹ 6,23,437.50.

Pokemon fully processes both of its intermediate products into Chocolate Powder or Milk-Chocolate. There is an active market for these intermediate products. In October, 2004, Pokemon could have sold the Chocolate Powder Liquor Base for ₹ 997.50 a gallon and the Milk-Chocolate Liquor Base for ₹ 1,235 a gallon.

Required:

(i) Calculate how the Joint Cost of ₹ 7,12,500 would be allocated between the Chocolate Powder and Milk-Chocolate Liquor Bases under the following methods:

(a) Sales value at split off point,

(b) Physical measure (gallons),

(c) Estimated Net Realizable Value (NRV),

(d) Constant Gross-Margin Percentage NRV.

(ii) What is the Gross-Margin percentage of the Chocolate Powder and Milk-Chocolate Liquor Bases under each of the methods in requirement (i)?
(iii) Could Pokemon have increased its operating income by a change in its decision to fully process both of its intermediate products? Show your computations.

Question 28 - Pyq
The yield of a certain Process is 80% towards Main-Product, 15% towards and 5% towards Normal Loss. The material put in process (5,000 units) cost ₹ 23.75 per unit and all other Overhead Charges are ₹ 14,250. Of the Overheads, Power Cost accounted for 33.33%. It is ascertained that power Cost is chargeable in the ratio 10:9 between Main and By- Product. Prepare a statement showing the cost of the By – Product.

Question 29 -
A Company has Joint cost of ₹1, 00,000 and it produces two main products A and B and one BY- Product C as 1000kg, 2000kg and 500kg respectively.

- The Sale prices are ₹ 200, ₹ 500 and ₹ 5/kg respectively.
- In addition to this product C also has packing cost of ₹ 1/kg.
- Use physical output method to distribute Joint cost.

Question 30 - Study Material
Sun-moon Ltd. produces and sells the following products:

Products	Units	Selling price at split off point (₹)	Selling price after further processing (₹)
A	2,00,000	17	25
B	30,000	13	17
C	25,000	8	12
D	20,000	10	-
E	75,000	14	20

Raw material costs ₹35,90,000 and other manufacturing expenses cost ₹ 5,47,000 in the manufacturing process which are absorbed on the products on the basis of their 'Net realisable value'. The further processing costs of A, B, C and E are ₹12,50,000; ₹1,50,000; ₹ 50,000 and ₹ 1,50,000 respectively. Fixed costs are ₹ 4,73,000.
You are required to PREPARE the following in respect of the coming year:
a) Statement showing income forecast of the company assuming that none of its products are to be further processed.
b) Statement showing income forecast of the company assuming that products A, B, C and E are to be processed further. Can you suggest any other production plan whereby the company can maximize its profits? If yes, then submit a statement showing income forecast arising out of adoption of that plan.

Mix Concept - Joint & By Product + Process Costing
Question 31 - Pyq
A Chemical Company carries on production operation in two processes. The material first pass through Process I, where Product 'A' is produced.
Following data are given for the month just ended:
Material input quantity - 2,00,000 kgs.
Opening work-in-progress quantity (Material 100% and conversion 50% complete) - 40,000 kgs.
Work completed quantity - 1,60,000 kgs.
Closing work-in-progress quantity (Material 100% and conversion two-third complete) - 30,000 kgs.
Material input cost - ₹ 75,000
Processing cost - ₹ 1,02,000
Opening work-in-progress cost
Material cost - ₹ 20,000
Processing cost - ₹ 12,000
Normal process loss in quantity May be assumed to be 20% of material input. It has no realisable value.
Any quantity of Product 'A' can be sold for ₹ 1.60 per kg.
Alternatively, it can be transferred to Process II for further processing and then sold as Product 'AX' for ₹ 2 per kg. Further materials are added in Process II, which yield two kgs. of product 'AX' for every kg. of Product 'A' of Process I.

Of the 1,60,000 kgs. per month of work completed in Process I, 40,000 kgs are sold as Product 'A' and 1,20,000 kgs. are passed through Process II for sale as Product 'AX'. Process II has facilities to handle upto 1,60,000 kgs. of Product 'A' per month, if required.
The monthly costs incurred in Process II (other than the cost of Product 'A') are:

	1,20,000 kgs. of Product 'A' input (₹)	**1,60,000 kgs. of Product 'A' input (₹)**
Materials cost	1,32,000	1,76,000
Processing costs	1,20,000	1,40,000

Required:
(i) Determine, using the weighted average cost method, the cost per kg. of Product 'A' in Process I and value of both work completed and closing work-in-progress for the month just ended.
(ii) Is it worthwhile processing 1,20,000 kgs. of Product 'A' further?
Calculate the minimum acceptable selling price per kg., if a potential buyer could be found for additional output of Product 'AX' that could be produced with the remaining Product 'A' quantity.

Question 32 - Rtp

A company produces two joint products A and B from the same basic materials. The processing is completed in three departments.
Materials are mixed in Department I. At the end of this process, A and B get separated. After separation, A is completed in the Department II and B in Department III. During a period, 4,00,000 kg of raw material was processed in Department I at a total cost of
₹ 17,50,000, and the resultant 50% becomes A and 40% becomes B and 10% normally lost in processing.
In Department II, 1/5th of the quantity received from Department I is lost in processing. A is further processed in Department II at a cost of ₹ 2,60,000.
In Department III, further new material is added to the material received from Department I and weight mixture is doubled, there is no quantity loss in the department III. Further processing cost (with material cost) in Department III is ₹ 3,00,000.
The details of sales during the said period are:

	Product A	**Product B**
Quantity sold (kg)	1,50,000	3,00,000
Sales price per kg (₹)	10	4

There were no opening stocks. If these products sold at split-off-point, the selling price of A and B would be ₹ 8 and ₹ 4 per kg respectively.
Required:
(i) PREPARE a statement showing the apportionment of joint cost to A and B in proportion of sales value at split off point.
(ii) PREPARE a statement showing the cost per kg of each product indicating joint cost, processing cost and total cost separately.
(iii) PREPARE a statement showing the product wise profit for the year.
(iv) On the basis of profits before and after further processing of product A and B, give your COMMENT that products should be further processed or not.

Question 33 - Pyq

ASR Ltd mainly produces Product 'L' and gets a by-Product 'M' out of a joint process. The net realizable value of the by-product is used to reduce the joint production costs before the joint costs are allocated to the main product. During the month of October 2022, company incurred joint production costs of ` 4,00,000. The main Product 'L' is not marketable at the split off point. Thus, it has to be processed further. Details of company's operation are as under:

Particulars	**Product L**	**By- Product M**
Production (units) Selling price per kg Further processing cost	10,000 ` 45 ` 1,01,000	200 ` 5 -

You are required to find out:
I. Profit earned from Product 'L'.

II. Selling price per kg of product 'L', if the company wishes to earn a profit of ` 1,00,000 from the above production.

Question 34 - Pyq

ABC Company produces a Product 'X' that passes through three processes: R, S and T. Three types of raw materials, viz., J, K, and L are used in the ratio of 40:40:20 in process R. The output of each process is transferred to next process. Process loss is 10% of total input in each process. At the stage of output in process T, a by-product 'Z' is emerging and the ratio of the main product 'X' to the by-product 'Z' is 80: 20. The selling price of product 'X' is ₹ 60 per kg. The company produced 14,580 kgs of product 'X'.
Material price: Material J @ ₹ 15 per kg; Material K @ ₹ 9 per kg; Material L @ ₹ 7 per kg. Process costs are as follows:

Process	Variable cost per kg (₹)	Fixed cost of Input (₹)
R	5.00	42,000
S	4.50	5,000
T	3.40	4,800

The by-product 'Z' cannot be processed further and can be sold at ₹ 30 per kg at the split-off stage. There is no realizable value of process losses at any stage.
Present a statement showing the apportionment of joint costs on the basis of the sales value of product 'X' and by-product 'Z' at the split-off point and the profitability of product 'X' and by-product 'Z'.

Question 35 - Rtp

JP Ltd. uses joint production process that produces three products at the split -off point. Joint production costs during the month of July, 2022 were ₹. 33,60,000.
Product information for the month of July is as follows:

Particulars	Product A	Product B	Product C
Units produced	3,000	6,000	9,000
Sales prices:			
At the split-off	₹. 200		
After further processing	₹. 300	₹. 350	₹. 100
Costs to process after split-off	₹. 6,00,000	₹. 6,00,000	₹. 6,00,000

Other information is as follows: Product C is a by-product and the company accounts for the by-product at net realizable value as a reduction of joint cost. Further, Product B & C must be processed further before they can be sold. FIND OUT the joint cost allocated to Product A in the month of July if joint cost allocation is based on Net Realizable Value.

Question 36 - Rtp

Key Pee Limited produces and sells the following products

Units	Selling price at split-off point (₹.)	Selling price after further processing (₹.)
500000	42.5	62.5
75000	32.5	42.5
62500	20	30
50000	25	-
187500	35	50

Cost of raw material ₹. 89,75,000 and other manufacturing expenses cost ₹.13,67,500 in the manufacturing process which are absorbed on the products on the basis of their 'Net realisable value'. The further processing costs of A, B, C and E are ₹.31,25,000;
₹. 3,75,000; ₹.1,25,000 and ₹.3,75,000 respectively. Fixed costs are ₹.11,82,500.
You are required to PREPARE the following in respect of the coming year:

1. Statement showing income forecast of the company assuming that none of its products are to be further processed.
2. Statement showing income forecast of the company assuming that products A, B, C and E are to be processed further.

Service Costing

Question 1 - Rtp

How are cost units determined in the rendering of service?

Answer 1:

For computing the operating cost, it is necessary to decide first, about the unit for which the cost is to be computed, this May often require the study of some technical and operating data, for finding out the factors which have a bearing on cost. The cost units actually used in the following service undertakings are as below:

Service industry	Unit of cost (examples)
Transport Services	Passenger- km., (In public transportation) Quintal- km., or Ton- km. (In goods carriage)
Electricity Supply service	Kilowatt- hour (kWh)
Supply service	Cubic metre, per kg., per litre.
Hospital	Patient per day, room per day or per bed, per operation etc.
Canteen	Per item, per meal etc.
Cinema	Per ticket.
Hotels	Guest Days or Room Days
Bank or Financial Institutions	Per transaction, per services (e.g. per letter of credit, per application, per project etc.)
Educational Institutes	Per course, per student, per batch, per lecture etc.
IT & ITES	Cost per project, per module etc.
Insurance	Per policy, Per claim, Per TPA etc.

Computation of Passenger – Km

Question 2 - Pyq

Calculate total Passenger Kilometres from the following information:

Number of buses 6, number of days operating in a month 25, trips made by each bus per day 8, distance covered 20 kilometres (one side), capacity of bus 40 passengers, normally 80% of capacity utilization.

Question 3 - Pyq, Study Material

A Lorry starts with a load of 20 tonnes of goods from Station A. It unloads 8 tonnes at Station B and rest of goods at station C. It reaches back directly to Station A after getting reloaded with 16 tonnes of goods at Station C. The distance between A to B, B to C and then from C to A are 80 kms, 120 kms and 160 kms respectively. Compute 'Absolute Tonne-Kms' and 'Commercial Tonne-Kms'.

Question 4 - Pyq

A Lorry starts with a load of 24 tonnes of goods from Station A. It unloads 10 tonnes at Station B and rest of goods at Station C. It reaches back directly to Station A after getting reloaded with 18 tonnes of goods at Station C. The distance between A to B, B to C and then from C to A are 270 kms, 150 kms and 325 kms respectively. Compute 'Absolute Tonne-Kms' and 'Commercial Tonne-Kms'.

Operating Cost Sheet

Question 5 - Study Material

AXA Passenger Transport Company is running 5 buses between two towns, which are 40 kms apart. Seating capacity of each bus is 40 passengers. Following details are available from their books, for the month of April 20X9:

	(₹)
Salary of Drivers, Cleaners and Conductors	24,000
Salary to Supervisor	10,000
Diesel and other Oil	40,000
repairs and Maintenance	8,000
Tax and Insurance	16,000
Depreciation	26,000
Interest	20,000

	1,44,000

Actual passengers carried were 75% of the seating capacity. All the four buses run on all days for the month. Each bus made one round trip per day. CALCULATE cost per passenger – Kilometre.

Question 6 - Pyq, Study Material

Global Transport Ltd charges ₹90 per ton for its 6 tons truck lorry load from City 'A' to City 'B'. The charges for the return journey are ₹84 per ton. No concession or reduction in these rates is made for any delivery of goods at intermediate station 'C'.

In January, the truck made 12 outward journeys for City 'B' with full load out of which 2 tons were unloaded twice in the way at City 'C'. The truck carried a load of 8 tons in its return journey for 5 times but once caught by police and ₹1,200 was paid as fine. For the remaining trips the truck carried full load out of which all the goods on load were unloaded once at City 'C'. The distance from City 'A' to City 'C' and City 'B' are 140 kms and 300 kms respectively.

Annual Fixed Costs and Maintenance Charges are ₹60,000 and ₹12,000 respectively. Running Charges spent during January are ₹2944. Find out the cost per Absolute Tonne-Km and the profit for January.

Question 7 - Study Material, Rtp

AD Higher Secondary School (AHSS) offers courses for 11th & 12th standard in three streams i.e. Arts, Commerce and Science. AHSS runs higher secondary classes along with primary and secondary classes, but for accounting purpose it treats higher secondary as a separate responsibility centre. The Managing committee of the school wants to revise its fee structure for higher secondary students. The accountant of the school has provided the following details for a year:

	Amount (₹)
teachers' salary (25 teachers × ₹ 35,000 × 12 months)	1,05,00,000
Principal's salary	14,40,000
Lab attendants' salary (2 attendants × ₹ 15,000 × 12 months)	3,60,000
Salary to library staff	1,44,000
Salary to peons (4 peons × ₹ 10,000 × 12 months)	4,80,000
Salary to other staffs	4,80,000
Examinations expenditure	10,80,000
Office & Administration cost	15,20,000
Annual day expenses	4,50,000
Sports expenses	1,20,000

Other information:

(i)

	Standard 11 & 12			**Primary & Secondary**
	Arts	**Commerce**	**Science**	
No. of students	120	360	180	840
Lab classes in a year	0	0	144	156
No. of examinations in a year	2	2	2	2
Time spent at library per student per year	180 Hours	120 Hours	240 Hours	60 Hours
Time spent by principal for administration	208 Hours	312 Hours	480 Hours	1,400 Hours
teachers for 11 & 12 standard	4	5	6	10

(ii) One teacher who teaches economics for Arts stream students also teaches commerce stream students. The teacher takes 1,040 classes in a year, it includes 208 classes for commerce students.

(iii) There is another teacher who teaches mathematics for Science stream students also teaches business mathematics to commerce stream students. She takes 1,100 classes a year, it includes 160 classes for commerce students.

(iv) One peon is fully dedicated for higher secondary section. Other peons dedicate their 15% time for higher secondary section.

(v) All school students irrespective of section and age participates in annual functions and sports activities.

Required:

(a) CALCULATE cost per student per annum for all three streams.

(b) If the management decides to take uniform fee of ₹ 1,000 per month from all higher secondary students, CALCULATE stream wise profitability.If management decides to take 10% profit on cost, COMPUTE fee to be charged from the students of all three streams respectively.

Question 8 - Study Material

From the following data pertaining to the year 1997-98 prepare a cost sheet showing the cost of electricity generated per k.w.h. by Chambal Thermal Power Station.

Total units generated	10,00,000 k.w.h
	₹
Operating labour	50,000
repairs & maintenance	50,000
Lubricants, spares and stores	40,000
Plant supervision	30,000
Administration overheads	20,000

Coal consumed per kwh for the year is 2.5 k.g. @ ₹0.02 per kg. Depreciation charges @ 5% on capital cost of ₹2,00,000.

Question 9 - Study Material

PREPARE the cost statement of Ignus Thermal Power Station showing the cost of electricity generated per kWh, from the data provided below pertaining to the year 2019-20.

Total units generated 20,00,000 kWh

	Amount (₹)
Operating labour	30,00,000
repairs & maintenance	10,00,000
Lubricants, spares and stores	8,00,000
Plant supervision	6,00,000
Administration overheads	40,00,000

5 kWh. of electricity generated per kg of coal consumed @ ₹ 4.25 per kg. Depreciation charges @ 5% on capital cost of ₹ 5,00,00,000.

Fare Computation for Passenger Transport Services

Question 10 - Pyq

A Transport Company has been given a 40 kilometer long route to run 5 buses. The cost of each bus is ₹6,50,000. The buses will make 3 round trips per day carrying on an average 80% passengers of their seating capacity. The seating capacity of each bus is 40 passengers. The buses will run on an average 25 days in a month. The other information for a year are given below:

Garage Rent	₹4,000 per month
Annual repairs and Maintenance	₹22,500 each bus
Salaries of 5 Drivers	₹3,000 each per month
Wages of 5 Conductors	₹1,200 per each month
Manager's Salary	₹7,500 per month
Road Tax, Permit Fee, etc.	₹5,000 for a quarter
Office Expenses	₹2,000 per month
Cost of Diesel per litre	₹33
Kilometres run per litre for each bus	6 kilometres
Annual Depreciation	15% of cost
Annual Insurance	3% of cost

Calculate the Bus Fare to be charged from each passenger per kilometer, if the Company wants to earn a profit of 33.33% on Takings (Total Receipts from passengers).

Question 11 - Pyq

Mr. X owns a bus which runs according to the following schedule –

Route	**Distance one-way**	**No. of days run each month**	**Seating Occupancy**
Delhi to Chandigarh and back, the same day	250 kms	8	90%

Delhi to Agra and back, the same day	210 kms	10	85%
Delhi to Jaipur and back, the same day	270 kms	6	100%

OTHER DETAILS

Cost of the Bus	₹12,00,000	Diesel Consumption – 4 kms. per litre at	₹56 per Litre.
Salary of the Driver	₹24,000 p.m.	Lubricant Oil (other than Diesel and Oil)	₹10 per 100 kms.
Salary of the Conductor	₹21,000 p.m.	Permit Fee	₹315 p.m.
Salary of the part-time Accountant	₹5,000 p.m.	repairs and Maintenance	₹1,000 p.m.
Insurance of the Bus	₹4,800 p.a.	Depreciation of the Bus	@ 20% p.a.
Road Tax	₹15,915 p.a.	Seating capacity of the Bus	50 persons

Passenger Tax is 20% of the Total Takings. Calculate the Bus Fare to be charged from each passenger to earn a profit of 30% on Total Takings. The fares are to be indicated per passenger for the journeys – (1) Delhi to Chandigarh, (2) Delhi to Agra, and (3) Delhi to Jaipur.

Question 12 - Study Material

ABC Transport Company has given a route 40 kilometers long to run bus.
a) The bus costs the company a sum of ₹20,00,000
b) It has been insured at 3% p.a. and
c) The annual tax will amount to ₹20,000
d) Garage rent is ₹20,000 per month.
e) Annual repairs will be ₹2,04,000
f) The bus is likely to last for 5 years
g) The driver's salary will be ₹30,000 per month and the conductor's salary will be ₹25,000 per month in addition to 10% of takings as commission [To be shared by the driver and conductor equally].
h) Cost of stationery will be ₹1,000 per month.
i) Manager-cum-accountant's salary is ₹17,000 per month.
j) Petrol and oil will be ₹500 per 100 kilometers.
k) The bus will make 3 up and down trips carrying on an average 40 passengers on each trip.
l) The bus will run on an average 25 days in a month.
Assuming 15% profit on takings, CALCULATE the bus fare to be charged from each passenger.

Question 13 - Pyq

Iron Ore is transported from two mines – 'A' and 'B' and unloaded at plots in a Railway Station. A is at a distance of 10 km and B is at a distance of 15 km from the railhead plots. A fleet of lorries of 5 tonnes carrying capacity is used for the transport of ore from the mines. Records reveal that the lorries average speed of 30 km. per hour when running and regularly take 10 minutes to unload at the rail head. At Mine 'A', loading time average is 30 minutes per load while at Mine 'B' loading time averages 20 minutes per load.
Driver's Wages, Depreciation, Insurance and Taxes are found to cost ₹9 per hour operated. Fuel, Oil, Tyres, repairs and Maintenance cost ₹1.20 per km.
Draw up a statement showing the cost per Tonne-Kilometer of carrying Iron Ore from each Mine.

Question 14 - Mtp

Harry Transport Service is a Delhi based national goods transport service provider, owning f five trucks for this purpose. The cost of running and maintaining these trucks are as follows:

Particulars	**Amount**
Diesel cost	₹ 15 per km.
Engine oil	₹ 4,200 for every 14,000 km.
Repair and maintenance	₹ 12,000 for every 10,000 km.
Driver's salary	₹ 20,000 per truck per month
Cleaner's salary	₹ 7,000 per truck per month
Supervision and other general expenses	₹ 15,000 per month
Cost of loading of goods	₹ 200 per Metric Ton (MT)

Each truck was purchased for ₹ 20 lakhs with an estimated life of 7,20,000 km. During the next month, it is expecting 6 bookings, the details of which are as follows :

Sl. No.	Journey	Distance (in km)	Weight - Up (in MT)	Weight - Down (in MT)
1.	Delhi to Kochi	2,700	15	7
2.	Delhi to Guwahati	1,890	13	0
3.	Delhi to Vijayawada	1,840	16	0
4.	Delhi to Varanasi	815	11	0
5.	Delhi to Asansol	1,280	13	5
6.	Delhi to Chennai	2,185	11	9
	Total	10,710	79	21

Required:
(i) CALCULATE the total absolute Ton-km for the next month.
(ii) CALCULATE the cost per ton-km

Fare per Passenger - Km

Question 15 - Rtp, Pyq

Rounders Co. has obtained a licence to ply a mini-bus between stations A and B covering a distance of 25 km. The mini-bus will make 8 round trips a day for 25 days in a month. It has a seating capacity of 30 passengers and on an average 60% occupancy is expected throughout. The purchase price of the bus is ₹6,00,000. It has a life of 10 years with a salvage value of ₹10,000 at the end of its useful life. The details of the operating expenses are as under:

Insurance	₹12,000 per annum	Driver's Salary	₹3,000 per month
Garage Rent	₹2,000 per quarter	Conductor's Salary	₹2,000 per month
Road Tax	₹3,000 per annum	Tyres and Tubes	₹3,000 per quarter
repairs	₹4,000 per quarter	Diesel	₹12 per litre
Administration	₹1,000 per month	Oil and Sundries	₹20 per 100 km run

The mini-bus consumes a litre of diesel for every 4 km of run. Passenger Tax is 20% on total takings. The Company requires a profit of 20% on total takings.
You are required to prepare an Annual Cost Sheet showing the Cost per passenger km and the one-way fare per passenger from Station A to B.

Decision Making on Mode of Transport

Question 16 - Study Material, Pyq

A Company is considering three alternative proposals for conveyance facilities for its sales personnel who have to do considerable travelling, approximately 20,000 kilometers every year. The proposals are as follows:
(i) Purchase and maintain its own fleet of carsThe average cost of a car is ₹6,00,000.
(ii) Allow the Executive use his own car and reimburse expenses at the rate of ₹10 per kilometer and also bear insurance costs.
(iii) Hire cars from an agency at ₹1,80,000 per year per car. The company will have to bear costs of petrol taxes and tyres.
The following further details are available:

Petrol	₹6 per km.
repairs and Maintenance	₹0.20 per km.
Tyre	Re. 0.12 per km.
Insurance	Re. 1,200 per car per annum
Taxes	₹800 per car per annum.
Life of the car	5 years with annual mileage of 20,000 km.
Resale value	₹80,000 at the end of the fifth year

Work out the relative costs of three proposals and rank them.

Service Costing and Decision Making - Airlines

Question 17 - Rtp

Always Best-Carriers (ABC) Airways owns a single jet aircraft and operates between Bangalore and New Delhi. Flights leave Bangalore on Mondays and Thursdays and depart from New Delhi on Wednesdays and Saturday. ABC cannot afford any more flights between Bangalore and New Delhi. An analyst has collection the following information:

Seating Capacity per Plane	360
Average passengers per flight	100
Flights per week	4
Flights per year	208
Average one-way fare	₹10,000
Variable Fuel Costs	₹1,40,000 per flight
Food Service to passengers (not charged to passengers)	₹400 per passenger
Commission paid by ABC to Travel Agents – All booking through agents only	8% of fare
Fixed Expenses to each flight –	
Annual Lease Costs	₹5,30,000 per flight
Ground Services, i.e. Maintenance, Check-in, Baggage Handling, etc.	₹70,000 per flight
Salaries of Flight Crew	₹40,000 per flight

For the sake of simplicity, assume that fuel costs are unaffected by the actual number of passengers on a flight.

Required:

1. What is the Operating Income that ABC makes on each one-way flight between Bangalore and New Delhi?
2. ABC's Market Research Department indicates that lowering the average one-way fare to ₹9,600 will increase the average number of passengers per flight to 106. Should ABC lower its fare?
3. Travel India, a Tour Operator, approaches ABC to charter its jet aircraft twice each month, first to take Travel India International tourists from Bangalore to New Delhi and then bring them back from New Delhi to Bangalore. If ABC accepts the offer, it can only 184 (208 minus 24) of its own flights each year. The terms of the charter are –

(a) For each one-way flight Travel India will Pay ABC ₹7,50,000 to charter the plane and to use its flight crew and ground service staff.
(b) Travel India will pay for fuel costs.
(c) Travel India will pay all food costs.

On purely financial considerations, should ABC accept the offer from Travel India?

Hospital Costing – Revenue Statement, BEP

Question 18 - Pyq

Divine Public Health Hospital runs only an Intensive Care Unit (ICU). For this purpose, it has hired a building at a rent of ₹10,000 per month. The ICU has undertaken to bear the cost of repairs and Maintenance Charges. The ICU consisted of 50 beds and 5 more beds can be safely accommodated, when the situation demands, at a charge of ₹5 per bed per day.

During a financial year, it was ascertained that only for 120 days in the year, the ICU had full capacity of 50 patients per day and for another 80 days, it had on an average 40 beds only occupied per day. The total hire charges for the extra beds incurred for the whole year amount to ₹4000. Expert Doctors from various places and outstations were engaged and the fees were paid on the basis of the number of patients attended and the time spent by them and on an average, it worked out to ₹20,000 per month during that financial year. The other expenses for the year were as under:

Particulars	**₹**
4 Supervisors, each at a Salary of	₹500 per month
8 Nurses, each at a Salary of	₹300 per month
4 Ward Boys each at a Salary of	₹150 per month
repairs & Maintenance	₹7200
Cost of Food supplied to patients	₹88,000
Laundry Charges	₹56,000
Medicines Supplied	₹70,000
Cost of Oxygen, X-Ray, etc. other than directly borne for treatment of Patients	₹1,08,000
Janitor & Other Services from them	₹25,000

Administration Charges allocated to the ICU	₹99,100

The ICU has recovered an overall amount of ₹100 per day on an average from each patient. The cost of Janitor and Other services is variable as it is related to number of patient-days.
Prepare Revenue statement for the above financial year and indicate the profit per patient day made by the ICU. Also work out the number of patient days required by the unit to break-even.

Question 19 - Pyq

ABC Health care runs an Intensive Medical Care Unit. For this purpose, it has hired a building at a rent of ₹ 50,000 per month with the agreement to bear the repairs and maintenance charges also.
The unit consists of 100 beds and 5 more beds can comfortably be accommodated when the situation demands. Though the unit is open for patients all the 365 days in a year, scrutiny of accounts for the year 2020 reveals that only for 120 days in the year, the unit had the full capacity of 100 patients per day and for another 80 days, it had, on an average only 40 beds occupied per day. But, there were occasions when the beds were full, extra beds were hired at a charge of ₹ 50 per bed per day. This did not come to more than 5 beds above the normal capacity on any one day. The total hire charges for the extra beds incurred for the whole year amounted to ₹ 20,000.
The unit engaged expert doctors from outside to attend on the patients and the fees were paid on the basis of the number of patients attended and time spent by them which on an average worked out to ₹ 30,000 per month in the year 2020.
The permanent staff expenses and other expenses of the unit were as follows:

	₹
2 Supervisors each at a per month salary of	5,000
4 Nurses each at a per month salary of	3,000
2 Ward boys each at a per month salary of	1,500
Other Expenses for the year were as under:	
repairs and Maintenance	28,000
Food supplied to patients	4,40,000
Caretaker and Other services for patients	1,25,000
Laundry charges for bed linen	1,40,000
Medicines supplied	2,80,000
Cost of Oxygen etc. other than directly borne for treatment of patients	75,000
General Administration Charges allocated to the unit	71,000

Required:
(i) What is the profit per patient day made by the unit in the year 2020, if the unit recovered an overall amount of ₹ 200 per day on an average from each patient.
(ii) The unit wants to work on a budget for the year 2021, but the number of patients requiring medical care is a very uncertain factor. Assuming that same revenue and expenses prevail in the year 2021 in the first instance, work out the number of patient days required by the unit to break even.

Question 20 - Pyq

MRSL Healthcare Ltd. has incurred the following expenditure during the last year for its newly launched 'COVID – 19' Insurance Policy :

	₹
Office Administration Cost	48,00,000
Claim management Cost	3,80,000
Employees Cost	16,20,000
Postage and logistics	32,40,000
Policy issuance cost	29,50,000
Facilities cost	46,75,000
Cost of marketing of the policy	1,38,90,000
Policy development cost	35,00,000
Policy servicing cost	96,45,000
Sales support expenses	32,00,000
I.T. Cost	?

Number of policy sold : 2,800
Total insured Value of policies – ₹ 3,500 crores
Cost per rupee of insured value – ₹ 0.002
You are required to : (i) Calculate Total Cost for "Covid – 19" Insurance policy segregating the cost into four main activities namely (a) Marketing and Sales support (b) Operations (c) I.T. Cost and (d) Support functions. (ii) Calculate Cost Per Policy.

Question 21 - Study Material

ABC Hospital runs a Critical Care Unit (CCU) in a hired building. CCU consists of 35 beds and 5 more beds can be added, if required.
Rent per month - ₹75,000
Supervisors – 2 persons – ₹25,000 Per month – each
Nurses – 4 persons – ₹20,000 per month – each
Ward Boys – 4 persons – ₹5,000 per month – each
Doctors paid ₹2,50,000 per month – paid on the basis of number of patients attended and the time spent by them. Other expenses for the year are as follows:
Repairs (Fixed) – ₹81,000
Food to Patients (Variable) – ₹8,80,000
Other services to patients (Variable) – ₹3,00,000
Laundry charges (Variable) – ₹6,00,000
Medicines (Variable) – ₹7,50,000
Other fixed expenses – ₹10,80,000
Administration expenses allocated – ₹10,00,000
It was estimated that for 150 days in a year 35 beds are occupied and for 80 days only 25 beds are occupied. The hospital hired 750 beds at a charge of ₹100 per bed per day, to accommodate the flow of patients. However, this does not exceed more than 5 extra beds over and above the normal capacity of 35 beds on any day. You are required to –
a) CALCULATE profit per Patient day, if the hospital recovers on an average ₹2,000 per day from each patient
b) FIND OUT Breakeven point for the hospital.

Library Services – Cost and Revenue Analysis

Question 22 - Pyq

A Club runs a library for its members. As part of club policy, an annual subsidy of upto ₹5 per member including cost of books May be given from the general funds of the club. The management of the club has provided the following figures for its library department.

Number of Old Books	50,000
Number of Library members	1,000
Library fee per member per month	₹100
Fine for late return of books day	Re. 1 per book
Average No. of books returned late per month	500
Average No. of days each book is returned late	5 days
Cost of new books	₹ 300 per book
Number of books purchased per year	1200 books
Cost of maintenance per old book per year	₹10

Staff details	No.	Per Employee Salary per month (₹)
Librarian	1	10,000
Assistant Librarian	3	7,000
Clerk	1	4,000

You are required to calculate:
(i) The cost of maintaining the library per year excluding the cost of new books;
(ii) The cost incurred per member per month on the library excluding cost of new books; and
(iii) The net income from the library per year.
(iv) If the club follows a policy that all new books must be purchased out of library revenue (a) What is the maximum number of books that can be purchased per year and (b) How many excess books are being purchased by the library per year?

Also, comment on the subsidy policy of the club.

Hotel Service – Various Types of Rooms – Rent to be collected

Question 23 - Study Material

A lodging home is being run in a small hill station with 100 single rooms. The home offers concessional rates during six off- season months in a year. During this period, half of the full room rent is charged. The management's profit margin is targeted at 20% of the room rent. The following are the cost estimates and other details for the year ending on 31st March 20X7. [Assume a month to be of 30 days].

(i) Occupancy during the season is 80% while in the off- season it is 40% only.

(ii) Total investment in the home is ₹200 lakhs of which 80% relate to buildings and balance for furniture and equipment.

(iii) Expenses:

- Staff salary [Excluding room attendants] : ₹5,50,000
- repairs to building : ₹2,61,000
- Laundry charges : ₹80, 000
- Interior : ₹1,75,000
- Miscellaneous expenses : ₹1,90,800

(iv) Annual depreciation is to be provided for buildings @ 5% and on furniture and equipment @ 15% on straight-line basis.

(v) Room attendants are paid ₹10 per room day on the basis of occupancy of the rooms in a month.

(vi) Monthly lighting charges are ₹120 per room, except in four months in winter when it is ₹30 per room.

You are required to WORK OUT the room rent chargeable per day both during the season and the off-season months on the basis of the foregoing information.

Question 24 - Pyq

Following are the information given by owner of M/s Moonlight Co. running a hotel at Manali. You are requested to advise him regarding the rent to be charged from his customer per day so that he is able to earn 20% profit on cost other than interest.

(i) Staff salaries - ₹4,00,000

(ii) The room attendant's salary is ₹10 per day. The salary is paid on daily basis and the services of room attendant are needed only when the room is occupied. There is one room attendant for one room.

(iii) Lighting, heating and power:

a) The normal lighting expenses for a room if it is occupied for the whole month is ₹250.

b) Power is used only in winter and normal charge per month if occupied for a room is ₹100.

(iv) repairs to building ₹50,000 per annum.

(v) Linen etc. ₹24,000 per annum.

(vi) Sundries ₹70,770 per annum.

(vii) Interior decoration and furnishing ₹50,000 per annum.

(viii)Cost of building ₹20,00,000, rate of depreciation 5%.

(ix) Other equipments ₹5,00,000, rate of depreciation 10%.

(x) Interest @ 5% May be charged on its investment of ₹25,00,000 in the building and equipment

(xi) There are 200 rooms in the hotel and 90% of the rooms are normally occupied in summer and 40% of the rooms are occupied in winter. You May assume that period of summer and winter is six months each. Normal days in a month May be assumed to be 30.

Question 25 - Study Material

Following are the data pertaining to Infotech Pvt. Ltd, for the year 20X8-X9

Particulars	Amount (₹)
Salary to Software Engineers (5 persons)	15,00,000
Salary to Project Leaders (2 persons)	9,00,000
Salary to Project Manager	6,00,000
repairs & maintenance	3,00,000
Administration overheads	12,00,000

The company executes a Project XYZ, the details of the same as are as follows:

Project duration – 6 months

One Project Leader and three Software Engineers were involved for the entire duration of the project, whereas Project Manager spends 2 months' efforts, during the execution of the project.

Travel expenses incurred for the project – ₹1,87,500
Two Laptops were purchased at a cost of ₹50,000 each, for use in the project and the life of the same is estimated to be 2 years.
PREPARE Project cost sheet.

Question 26 - Study Material

BHG Toll Plaza Ltd built a 60 km. long highway and now operates a toll plaza to collect tolls from passing vehicles using the same. The company has invested ₹600 crore to build the road and has estimated that a total of 60 crore vehicles will be using the highway during the 10 years toll collection tenure. Toll Operating and Maintenance cost for the month of April 20X9 are as follows:
(i) Salary to –

- Collection Personnel (3 Shifts and 4 persons per shift) - ₹150 per day per person
- Supervisor (2 Shifts and 1 person per shift) - ₹250 per day per person
- Security Personnel (3 Shifts and 2 persons per shift) - ₹150 per day per person
- Toll Booth Manager (2 Shifts and 1 person per shift) - ₹400 per day per person

(ii) Electricity – ₹80,000
(iii) Telephone – ₹40,000
(iv) Maintenance cost – ₹30 Lacs
(v) The company needs 25% profit over total cost to cover interest and other costs.
Required:
(i) CALCULATE cost per kilometer.
(ii)CALCULATE the toll rate per vehicle (assume there is only type of vehicle).

Question 27 - Study Material

SLS Infrastructure built and operates 110 k.m. highway on the basis of Built-Operate-Transfer (BOT) for a period of 25 years. A traffic assessment carried out to estimate the traffic flow per day shows the following figures:

S.No.	Type of vehicle	Daily Traffic volume
1.	Two wheelers	44,500
2.	Car and SUVs	3,450
3.	Bus and LCV	1,800
4.	Heavy commercial vehicles	816

The following is the estimated cost of the project:

S.No.	Activities	Amount (₹ in Lakh)
1.	Site clearance	170.70
2.	Land development and filling work	9,080.35
3.	Sub base and base courses	10,260.70
4.	Bituminous work	35,070.80
5.	Bridge, flyovers, underpass, Pedestrian subway,	29,055.60
6.	footbridge, etc.	9,040.50
7.	Drainage and protection work	8,405.00
8.	Traffic sign, marking and road appurtenance	12,429.60
9.	Maintenance, repairing and rehabilitation	982.00
	Environmental management	1,14,495.25
	Total Project Cost	

An average cost of ₹ 1,120 lakh has to be incurred on administration and toll plaza operation.
On the basis of the vehicle specifications (i.e. weight, size, time saving etc.), the following weights has been assigned to the passing vehicles:

S.No.	Type of vehicle	
1.	Two wheelers	5%
2.	Car and SUVs	20%
3.	Bus and LCV	30%
4.	Heavy commercial vehicles	45%

Required:
(i) CACULATE the total project cost per day of concession period.
(ii) COMPUTE toll fee to be charged for per vehicle of each type, if the company wants to earn a profit of 15% on total cost.

[Note: Concession period is a period for which an infrastructure is allowed to operate and recovers its investment]

Question 28 - Study Material

The loan department of a bank performs several functions in addition to home loan application processing task. It is estimated that 25% of the overhead costs of loan department are applicable to the processing of home-loan application. The following information is given concerning the processing of a loan application:
Direct professional labor:

Particulars	**(₹)**
Loan processor monthly salary:	2,40,000
(4 employees @ ₹60,000 each)	
Loan department overhead costs (monthly)	
Chief loan officer's salary	75,000
Telephone expenses	7,500
Depreciation Building	28,000
Legal advice	24,000
Advertising	40,000
Miscellaneous	6,500
Total overhead costs	1,81,000

You are required to COMPUTE the cost of processing home loan application on the assumption that five hundred home loan applications are processed each month.

Question 29 - Study Material

From the following data pertaining to the year 20X8-X9 PREPARE a cost statement showing the cost of electricity generated per kWh by Chambal Thermal Power Station. Total units generated 10,00,000 kWh

Particulars	**(₹)**
Operating labour	15,00,000
repairs & maintenance	5,00,000
Lubricants, spares and stores	4,00,000
Plant supervision	3,00,000
Administrative overheads	20,00,000

5 kWh. of electricity generated per kg of coal consumed @ ₹4.25 per kg. Depreciation charges @ 5% on capital cost of ₹2,00,00,000.

Question 30 - Pyq

A company wants to outsource the operations of its canteen to a contractor. The company will provide space for cooking, free electricity and furniture in the canteen. The contractor will have to provide lunch to 300 workers of which 180 are vegetarian (Veg) and the rest are non-vegetarian (Non-Veg). In the case of non-veg meals, there will be a non-veg item in addition to the veg items. A contractor who is interested in the contract has analysed the cost likely to be incurred. His analysis is given below:

- Cereals - ₹8 per plate
- Veg items - ₹5 per plate
- Non-veg items - ₹15 per plate
- Spices - ₹1 per plate
- Cooking oil - ₹4 per plate
- One cook - Salary ₹13,000 per month
- Three helpe₹ - Salary ₹7,000 per month per head
- Fuel - Two commercial cylinders per month, price ₹1,000 each.

On an average, the canteen will remain open for 25 days in a month. The contractor wants to charge the non-veg meals at 1.50 times of the veg meals.
You are required to calculate:
(i) The price per meal (veg and non-veg separately) that contractor should quote if he wants a profit of 20% on his takings.
(ii) The price per meal (separately for veg and non-veg) that a worker will be required to pay if the company provides 60% subsidy for meals out of welfare fund.

Question 31 - Pyq

A group of 'Health Care Services' has decided to establish a Critical Care Unit in a metro city with an investment of ₹ 85 lakhs in hospital equipments. The unit's capacity shall be of 50 beds and 10 more beds, if required, can be added. Other information for a year are as under:

	(₹)
Building Rent	2,25,000 per month
Manager Salary (Number of Manager-03)	50,000 per month to each one
Nurses Salary (Number of Nurses-24)	18,000 per month to each Nurse
Ward boy's Salary (Number of ward boys' -24)	9,000 per month per person
Doctor's payment (Paid on the basis of number of patients attended and time spent by them)	5,50,000 per month
Food and laundry services (variable)	39,53,000
Medicines to patients (variable)	22,75,000 per year
Administrative Overheads	28,00,000 per year
Depreciation on equipments	15% per annum on original cost

It was reported that for 200 days in a year 50 beds were occupied, for 105 days 30 beds were occupied and for 60 days 20 beds were occupied. The hospital hired 250 beds at a charge of ₹ 950 per bed to accommodate the flow of patients. However, this never exceeded the normal capacity of 50 beds on any day. Find out:
(i) Profit per patient day, if hospital charges on an average ₹ 2,500 per day from each patient.
(ii)Break even point per patient day (Make calculation on annual basis)

Question 32 - Pyq

(a) X Ltd. distributes' its goods to a regional dealer using single lorry. The dealer premises are 40 kms away by road. The capacity of the lorry is 10 tonnes. The lorry makes the journey twice a day fully loaded on the outward journey and empty on return journey. The following information is available:

Diesel Consumption	8 km per litre
Diesel Cost	₹ 60 per litre
Engine Oil	₹ 200 per week
Driver's Wages (fixed)	₹ 2,500 per week
repairs	₹ 600 per week
Garage Rent	₹ 800 per week
Cost of Lorry (excluding cost of tyres)	₹ 9,50,000
Life of Lorry	1,60,000 kms
Insurance	₹ 18,200 per annum
Cost of Tyres	₹ 52,500
Life of Tyres	25,000 kms

Estimated sale value of the lorry at end of its life is ₹ 1,50,000

Vehicle License Cost	₹ 7,800 per annum
Other Overhead Cost	₹ 41,600 per annum

The lorry operates on a 5 day week.
Required:
(i) A statement to show the total cost of operating the vehicle for the four week period analysed into Running cost and Fixed cost
(ii) Calculate the vehicle operating cost per km and per tonne km. (Assume 52 weeks in a year).

Commercial Tonne Km and Freightage

Question 33 -

A Transport Undertaking maintains a fleet of Lorries for carrying goods from Kolkata to Haldia, 100 kms off. Each Lorry which operates for 25 days on an average in a month, starts every day from Kolkata with a load of 4 tonnes and returns with a load of 2 tonnes.
1. Calculate the Commercial Tonne-Kms, and the Cost per Commercial Tonne-Km, when the total monthly charges for a Lorry are ₹90,000.
2. What Rate per Tonne should the undertaking charge if it plans to earn a Gross Profit of 20% on the Freightage?

Question 34 - Pyq

A Transport Company has 20 vehicles, which capacities are as follows –

No. of Vehicles	5	6	7	2
Capacity per Vehicle	9 Tonne	12 Tonne	15 Tonne	20 Tonne

The Company provides goods transport service between Station 'A' to Station 'B'. Distance between these Stations is 200 kilometers. Each Vehicle makes one trip per day an average. Vehicles are loaded with an average of 90% of capacity at the time of departure from Station 'A' to Station 'B' and at the time of return back loaded with 70% of capacity. 10% of vehicles are laid up for repairs every day.
The following information relate to October –

Salary of Transport Manager	₹30,000	Cost of Diesel per litre	₹35
Salary of 30 Drivers	₹4,000 each Driver	Kilometres run per litre each vehicle	5 km
Wages of 25 Helpers	₹2,000 each Helper	Lubricant, Oil, etc.	₹23,500
Wages of 20 Labourers	₹1,500 each Labourer	Cost of replacement of Tyres, Tubes, etc.	₹1,25,000
Consumable Stores	₹45,000	Garage Rent (Annual)	₹90,000
Insurance (Annual)	₹24,000	Transport Technical Service Charges	₹10,000
Road Licence (Annual)	₹60,000	Electricity and Gas Charges	₹5,000
		Depreciation of Vehicles	₹2,00,000

There is a Workshop attached to the Transport Department which repairs these vehicles and other vehicles also. 40% of Transport Manager's Salary is debited to the Workshop. The Transport Department is charged ₹28,000 for the service rendered by the Workshop during October. During October, operation was 25 days.
Required:

- Calculate per Ton-Km Operating Cost.
- Find out the freight to be charged per ton-km, if the Company earned a profit of 25% on Freight.

Cost Recovery from Students – Differential collection of Tickets Fares

Question 35 - Pyq

EPS is a Public School having 25 buses each plying in different directions for the transport of its school students. In view of large number of students availing of the bus service, the buses work two shifts daily both in the morning and in the afternoon. The buses are garaged in the school. The workload of the students has been so arranged that in the morning, the first trip picks up senior students and the second trip plying an hour later picks up junior students. Similarly, in the afternoon, the first trip takes the junior students and an hour later the second trip takes the senior students home.
The distance travelled by each bus, one way is 16 km. The school works 24 days in a month and remains closed for vacation in May and June. The bus fee, however, is payable by the students for all the 12 months in a year.
The details of expenses for the year are as under –

Driver's Salary payable for all the 12 months	₹5,000 per month per Driver
Cleaner's Salary payable for all the 12 months (One Cleaner employed for every 5 buses)	₹3,000 per month per Cleaner
Licence Fees, Taxes, etc.	₹2,300 per bus per annum
Insurance Premium	₹15,600 per bus per annum
repairs and Maintenance	₹16,400 per bus per annum
Purchase Price of the Bus	₹16,50,000 each
Life of the Bus	16 years
Scrap Value	₹1,50,000
Diesel Cost	₹18.50 per litre

Each bus gives an average of 10 km per litre of diesel. The seating capacity of each bus is 60 students. The seating capacity is fully occupied during the whole year.
The school follows differential bus fees based on distance travelled as under –

Students picked up and dropped within the range of Distance from the School	Bus Fee	Percentage of Students availing this facility
4 Km	25% of full	15%
8 Km	50% of full	30%

16 Km	Full	55%

Ignore interest. Since the bus fees has to be based on Average Cost, you are required to –

1. Prepare a statement showing the expenses of operating a single bus and the fleet of 25 buses for a year.
2. Work out Average Cost per student per month in respect of –
   (a) Students coming from a distance of upto 4 km from the school;
   (b) Students coming from a distance of upto 8 km from the school; and
   (c) Students coming from a distance of upto 16 km from the school.

Question 36 - Rtp

VPS is a public school having 25 buses each plying in different directions for the transport of its school students. In view of large number of students availing of the bus service, the buses work two shifts daily both in the morning and in the afternoon. The buses are garaged in the school. The workload of the students has been so arranged that in the morning, the first trip picks up senior students and the second trip plying an hour later picks up junior students. Similarly, in the afternoon, the first trip takes the junior students and an hour later the second trip takes the senior students home.

The distance travelled by each bus, one way is 8 km. The school works 22 days in a month and remains closed for vacation in May and June. The bus fee, however, is payable by the students for all the 12 months in a year.

The details of expenses for a year are as under:

Driver's salary – payable for all the 12 in months	₹ 12,000 per month per driver
Cleaner's salary payable for all the 12 months	₹ 8,000 per month per cleaner
License fees, taxes etc.	₹ 8,400 per bus per annum
Insurance Premium	₹ 15,600 per bus per annum
repairs and Maintenance	₹ 20,500 per bus per annum
Purchase price of the bus	₹ 20,00,000 each
Life of the bus	16 years
Scrap value	₹ 1,60,000
Diesel Cost	₹ 78.50 per litre

Each bus gives an average of 5 km. per litre of diesel. The seating capacity of each bus is 40 students.

The school follows differential transportation fees based on distance travelled as under:

Students picked up and dropped within the range of distance from the school	Transportation fee	Percentage of students availing this facility
2 km.	25% of Full	15%
4 km.	50% of Full	30%
8 km.	Full	55%

Due to a pandemic, lockdown imposed on schools and the school remained closed from April 2020 to December 2020. Drivers and Cleaners were paid 75% of their salary during the lockdown period. Repairing cost reduced to 75% for the year 2020. Ignore the interest cost. Required:

(i) PREPARE a statement showing the expenses of operating a single bus and the fleet of 25 buses for a year.

(ii) FIND OUT transportation fee per student per month in respect of:
   (a) Students coming from a distance of upto 2 km. from the school.
   (b) Students coming from a distance of upto 4 km. from the school; and
   (c) Students coming from a distance of upto 8 km. from the school.

(iii)CALCULATE the minimum bus fare that has to be recovered from the students for the year 2020.

Computation of Freight Rates

Question 37 - Rtp

A transport company has a fleet of four trucks of 10 tonne capacity each plying in different directions for transport of customer's goods. The trucks run loaded with goods and return empty. The distance travelled, number of trips made and the load carried per day by each truck are as under:

Truck No.	One way Distance Km	No. of trips per day	Load carried per trip / day tonnes
1	48	4	6
2	120	1	9
3	90	2	8
4	60	4	8

The analysis of maintenance cost and the total distance travelled during the last two years is as under.

Year	Total distance travelled	Maintenance Cost ₹
1	1,60,200	1,38,150
2	1,56,700	1,35,525

The following are the details of expenses for the year under review:

Diesel	₹ 60 per litre. Each litre gives 4 km per litre of diesel on an average
Driver's salary	₹22,000 per truck per month
Licence and taxes	₹ 15,000 per annum per truck
Insurance	₹ 80,000 per annum for all the four trucks
Purchase Price per truck	₹ 30,00,000, Life 10 years. Scrap value at the end of life is ₹ 1,00,000.
Oil and sundries	₹ 525 per 100 km run.
General Overhead	₹1,10,840 per annum

The trucks operate 24 days per month on an average.
Required:
(i) Prepare an Annual Cost Statement covering the fleet of four trucks.
(ii) Calculate the cost per km. run.
(iii) Determine the freight rate per tonne km. to yield a profit of 30% on freight.

Fare Computation for Passenger Transport Services

Question 38 - Pyq

Shankar has been promised a contract to run a car on a 20 km long route for the Chief Executive of a Firm. He buys a luxury car costing ₹15 Lakhs. The annual cost of insurance and taxes are ₹45,000 and ₹9,000 respectively. He has to pay ₹5,000 per month for a garage where he keeps the car when it is not in use. The annual repair costs are estimated to be ₹40,000.
The Car is estimated to have a life of 10 years at the end of which the scrap value is likely to be ₹5 Lakhs. He hires a driver who will be paid ₹3,000 p.m. plus 10% of the takings as commission. Other incidental expenses are estimated at ₹2,000 p.m.
Petrol, Oil and Consumables will cost ₹1,000 per 100 km. The car will make 4 round trips each day. Assuming that a profit of 15% on takings is desired and that the car will be on the road for 25 days on an average per month, what should be the charge per round trip?

Question 39 - Pyq

The following information relates to a bus operator:

Cost of the bus	₹	18,00,000
Insurance charges		3%
Manager-cum accountant's salary	₹	8,000 p.m.
Annual tax	₹	50,000
Garage rent	₹	2,500 p.m.
Annual repair & maintenance	₹	1,50,000
Expected life of the bus		15 years
Scrap value at the end of 15 years	₹	1,20,000
Driver's salary	₹	15,000 p.m.
Conductor's salary	₹	12,000 p.m.
Stationery	₹	500 p.m.
Engine oil, lubricants (for 1,200 kms.)	₹	2,500
Diesel & oil (for 10 kms.)	₹	52
Commission to driver and conductor (shared equally)		10% of collections
Route distance		20 km long

The bus will make 3 round trips for carrying on the average 40 passengers in each trip. Assume 15% profit on collections. The bus will work on the average 25 days in a month. Calculate fare for passenger – km.

Fare to be Charged – Cost per Tonne – km

Question 40 - Rtp

The Union Transport Company supplies the following details in respect of a 5-Tonne truck:

Cost of Truck (depreciated on SLM)	₹6,75,000
Estimated Life	10 years

Scrap Value after ten years	₹36,000
Diesel, Oil, Grease etc.	₹112.50 per trip each way
repairs and Maintenance	₹3,750 per month
Driver's Wages	₹3,750 per month
Cleaner's Wages	₹1,875 per month
Annual Insurance Premium	₹23,100
Road Tax and other charges	₹12,000 per year
General Supervision Charges	₹36,000 per year

The truck makes one trip daily and carries goods to and from the city covering a distance of 25 kms each way. On the outward trip, freight is available to the extent of full capacity and on return 20% of capacity.
Assume that the Truck runs on an average 25 days a month, work out the –
1. Operating Cost per truck per month and per Tonne-Km.
2. Rate per tonne per trip that the Company should charge if a profit of 50% on Freightage is to be earned.

Decision Making on Mode of Transport

Question 41 - Rtp

Which One Co. presently brings coal to its factory from a nearby yard and the rate paid for transportation of coal from the yard located 6 km away to factory is ₹50 per tonne.
The total Coal to be handled in a month is 24,000 Tonnes. The company is considering proposal to buy its own truck and has the option of buying either a 10 Tonne capacity or a 8 Tonne capacity truck. The following information is available:

Particulars	10 tonne capacity Truck	8 Tonne capacity Truck
Purchase Price	₹10,00,000	₹8,50,000
Life (years)	5	5
Scrap Value at the end of 5 year	Nil	Nil
Km. per litre of Diesel & Oil	3	4
repairs & Maintenance p.a. per truck	₹60,000	₹48,000
Other Fixed Expenses p.a.	₹60,000	₹36,000

- Each truck will daily make 5 trips (to and fro) on an average for 24 days in a month.
- Cost of Diesel & Oils is ₹45 per litre.
- Salary of Drivers will be ₹6,000 per month – Two Drivers will be required for a Truck.
- Other Staff Expenses ₹1,08,000 p.a.

Prepare a comparative Cost Sheet on the basis of above data showing transport cost per tonne of operating 10 tonne and 8 tonne Truck at full capacity utilization. Also give your conclusions.

Cost Per Ton – Mile

Question 42 - Pyq

A chemical factory runs its boiler on furnace oil obtained from Indian Oil and Bharat Petroleum, whose depots are situated at a distance of 12 and 8 miles from the factor site. Transportation of furnace oil is made by the Company's own tanker lorries of 5 Tons capacity each Onward trips are made only on full load and the lorries return empty. The filling-in-time takes an average 40 minutes for Indian Oil and 30 minutes for Bharat Petroleum. But the emptying time in the factory is only 40 minutes for all. From the records available, it is seen that the average speed of the company's lorries works out to 24 miles per hour. The varying operating charges average 60 paise per mile covered and fixed charges given an incidence of ₹7.50 per hour of operation. Calculate the cost per ton-mile for each source.

Service Costing and Decision Making - Airlines

Question 43 - Pyq

In order to develop tourism, ABCL Airlines has been given permit to operate three flights in a week between X and Y cities (both sides). The airline operates a single aircraft of 160 seats capacity. The normal occupancy is estimated at 60% throughout the year of 52 weeks. The one-way fare is ₹7,200. The costs of operation of the flights are –

Fuel Cost (Variable)	₹96,000 per flight
Food served on board on non-chargeable basis	₹125 per passenger
Commission	5% of fare applicable for all booking
Fixed Costs: Aircraft Lease	₹3,50,000 per flight
Landing Charges	₹72,000 per flight

1. Calculate the Net Operating Income per Flight.
2. The Airline expects that that is occupancy will Increase to 108 passengers per flight if the fare is reduced is reduced to ₹6,720. Advise whether this proposal should be implemented or not.

Nursing Home – Room Rent to be Charged

Question 44 - Rtp

Curers & Healers Inc. hire a building to run a Nursing Home. The building has 4,000 square feet of area consisting of 20 rooms of 120 square feet each. The rest is General Area. The monthly rent has been agreed at ₹10 per square foot. Lighting and Heating expenses are ₹40,000 per month. The Staff would consist of – (a) Two Doctors at ₹30,000 per month each, (b) Six Nurses at ₹9,000 per month each, and (c) Four General Helpers at ₹6,000 per month each.

It is expected that 80% of the rooms will always remain occupied. If a Margin of 1/3rd on Takings is desired to cover other expenses, ascertain the Rent to be charged assuming a month of 30 days.

Hotel Service – Various Types of Rooms – Rent to be collected

Question 45 - Pyq, Study Material

A Company runs a Holiday Home. For this purpose, it has hired a building at a rent of ₹10,000 per month along with 5% of total taking. It has three types of suites for its customers, viz., Single Room, Double Rooms and Triple Rooms. Following information is given:

Type of Suite	Number	Occupancy Percentage
Single Room	100	100%
Double Rooms	50	80%
Triple Rooms	30	60%

The rent of Double Rooms Suite is to be fixed at 2.5 times of the Single Room Suite and that of Triple Rooms Suite as twice of the Double Rooms Suite. The other expenses for the year are as follows:

Staff Salaries	₹14,25,000	repairs and	₹1,23,500
Room Attendants' Wages	₹4,50,000	Renovation	₹80,500
Lighting, Heating and Power	₹2,15,000	Laundry Charges	₹74,000
		Interior Decoration	₹1,53,000
		Sundries	

Provide Profit at 20% on total taking and assume 360 days in a year. Find room rent for each type of room.

Ascertainment of Cost Per Student – Service Costing

Question 46 - Rtp

A Professional Institute has organized a correspondence course for the benefit of its students who have to undergo two levels of education – Inter and Final, the latter being open only to those who pass the former. The number of students involved per annum is 12,500 and 5,000 for Inter and Final Levels respectively. The Fixed Expenses for two courses taken together are:

Salaries		Rent, Lighting etc.	₹2,45,000
– Academic	₹13,44,000	Postage, Telephone, etc.	₹1,75,000
– General	₹3,15,000	Stationery	₹1,96,000

The following further details are available:

Particulars	Inter	Final
Number of Study papers	100	125
Number of pages per Study Paper	50	60
Cost per Page (paise)	8	10
Packing and Forwarding per set	₹125	₹200
Number of annual papers to be submitted	8	10
Cost of correcting and forwarding one answer paper	₹50	₹50

Ascertain the cost of imparting tuition per student for the two courses. [Note: Apportion all Fixed Costs on the basis of number of students.]

Miscellaneous

Question 47 - Study Material

Sanziet Lifecare Ltd. operates in life insurance business. Last year it launched a new term insurance policy for practicing professionals 'Professionals Protection Plus'. The company has incurred the following expenditures during the last year for the policy:

	₹
Policy development cost	11,25,000
Cost of marketing of the policy	45,20,000
Sales support expenses	11,45,000
Policy issuance cost	10,05,900
Policy servicing cost	35,20,700
Claims management cost	1,25,600
IT cost	74,32,000
Postage and logistics	10,25,000
Facilities cost	15,24,000
Employees cost	5,60,000
Office administration cost	16,20,000

Number of policy sold- 528
Total insured value of policies- ₹ 1,320 crore
Required:
(i) CALCULATE total cost for Professionals Protection Plus' policy segregating the costs into four main activities namely (a) Marketing and Sales support, (b) Operations, (c) IT and (d) Support functions.
(ii) CALCULATE cost per policy.
(iii) CALCULATE cost per rupee of insured value.

Question 48 - Mtp

GMCS Ltd. collects raw milk from the farmers of Ramgarh, Pratapgarh and Devgarh panchayats and processes this milk to make various dairy products. GMCS Ltd. has its own vehicles (tankers) to collect and bring the milk to the processing plant. Vehicles are parked in the GMCS Ltd.'s garage situated within the plant compound. Following are the information related with the vehicles:

	Ramgarh	Pratapgarh	Devgarh
No. of vehicles assigned	4	3	5
No. of trips a day	3	2	4
One way distance from the processing plant	24 k.m.	34 k.m.	16 k.m.
Fess & taxes per month (₹)	5,600	6,400	---

All the 5 vehicles assigned to Devgarh panchayat, were purchased five years back at a cost of ₹ 9,25,000 each. The 4 vehicles assigned to Ramgarh panchayat, were purchased two years back at a cost of ₹ 11,02,000 each and the remaining vehicles assigned to Pratapgarh were purchased last year at a cost of ₹ 13,12,000 each. With the purchase of each vehicle a two years free servicing warranty is provided. A vehicle gives 10 kmpl mileage in the first two year of purchase, 8 kmpl in next two years and 6 kmpl afterwards. The vehicles are subject to depreciation of 10% p.a. on straight line basis irrespective of usage. A vehicle has the capacity to carry 10,000 litres of milk but on an average only 70% of the total capacity is utilized.
The following expenditures are related with the vehicles:

Salary of Driver (a driver for each vehicle)	₹ 24,000 p.m.
Salary to Cleaner (a cleaner for each vehicle)	₹ 12,000 p.m.
Allocated garage parking fee	₹ 4,200 per vehicle per month
Servicing cost	₹ 15,000 for every complete 5,000 k.m. run.
Price of diesel per litre	₹ 78.00

From the above information you are required to CALCULATE
(i) Total operating cost per month for each vehicle. (Take 30 days for the month)
(ii) Vehicle operating cost per litre of milk.

Question 49 - Pyq

M/s. GPS Pvt. Ltd. is engaged in producing milk powder. The management of the company is considering for transportation of 29,952 Kiloliters (KL) of milk per month to its storage tanks that are situated 30 Km away from its collection centers. Two type of milk tankers are available in the market, namely 8-KL and 6-KL of capacity.

The details of operating cost for the milk tankers are as follows :

Particulars	8-KL Tanker	6-KL Tanker
Purchase price per tanker	Rs 18,04,000	Rs 12,00,000
Estimated life	6 years	6 years
Residual value per tanker	Rs 4,00,000	Rs 3,00,000
Other fixed cost per month , per tanker	Rs 55,980	Rs 46,540
Km. per liter of diesel	4 km	5 km

Additional information:

(i) Cost of diesel per liter is Rs 80

(ii) Each vehicle can run 6 trips (up & down) each day and can run on an average of 26 days each month.

(iii) Drivers will have to be recruited according to the number of milk tankers to be used. In addition , one extra driver for every eight milk tanker will be required for the entire fleet. Each driver will cost Rs 15,000 per month.

(iv) Yet another possibility is to hire enough milk tankers (8 KL capacity only) from a transport company at the rate of Rs 63,000 per month per milk tanker. The transport company will bear other fixed costs. However, GPS Pvt. Ltd has to bear the cost of driver and other operational costs.

You are required to prepare :

(a) Statement of operating cost for each alternative for a month

(b) Compute the cost per Kiloliters of milk transported.

(c) Advise the company on an appropriate choice among the above three alternatives.

(Note : Ignore Finance Cost)

Question 50 - Rtp

Navya LMV Pvt. Ltd, operates cab/ car rental service in Delhi/NCR. It provides its service to the offices of Noida, Gurugram and Faridabad. At present it operates CNG fuelled cars but it is also considering to upgrade these into Electric vehicle (EV). The details related with the owning of CNG & EV propelled cars are as tabulated below:

Particulars	CNG Car	EV Car
Car purchase price (₹)	9,20,000	15,20,000
Govt. subsidy on purchase of car (₹)	--	1,50,000
Life of the car	15 years	10 years
Residual value (₹)	95,000	1,70,000
Mileage	20 km/kg	240 km per charge
Electricity consumption per full charge	--	30 Kwh
CNG cost per Kg (₹)	60	--
Power cost per Kwh (₹)	--	7.60
Annual Maintenance cost (₹)	8,000	5,200
Annual insurance cost (₹)	7,600	14,600
Tyre replacement cost in every 5 -year (₹)	16,000	16,000
Battery replacement cost in every 8- year (₹)	12,000	5,40,000

Apart from the above, the following are the additional information:

Particulars	
Average distance covered by a car in a month	1,500 km
Driver's salary (₹)	20,000 p.m
Garage rent per car (₹)	4,500 p.m
Share of Office & Administration cost per car (₹)	1,500 p.m

Required:

CALCULATE the operating cost of vehicle per month per car for both CNG & EV options.

Question 51 - Pyq

Coal is transported from two mines X & Y and unloaded at plots in a railway station. X is at distance of 15 kms and Y is at a distance of 20 kms from the rail head plots. A fleet of lorries having carrying capacity of 4 tonnes

is used to transport coal from the mines. Records reveal that average speed of the lorries is 40 kms per hour when running and regularly take 15 minutes to unload at the rail head.
At Mine X average loading time is 30 minutes per load, while at mine Y average loading time is 25 minutes per load.
Additional Information:
Drivers wages, depreciation, insurance and taxes, etc. ₹12 per hour
Operated Fuel, oil tyres, repairs and maintenance, etc. ₹1.60 per km
You are required to prepare a statement showing the cost per tonne kilometre of carrying coal from each mine 'X' and 'Y'.

Question 52 - Pyq
ABC Bank is having a branch which is engaged in processing of 'Vehicle Loan' and 'Education Loan' applications in addition to other services to customers. 30% of the overhead costs for the branch are estimated to be applicable to the processing of 'Vehicle Loan' applications and 'Education Loan' applications each.
Branch is having four employees at a monthly salary of ₹50,000 each, exclusively for processing of Vehicle Loan applications and two employees at a monthly salary of ₹70,000 each, exclusively for processing of Education Loan applications.

In addition to above, following expense are incurred by the Branch:

- Branch Manager who supervises all the activities of branch, is paid at ₹90,000 per month.
- Legal charges, Printing & stationery and Advertising Expenses are incurred at
- ₹30,000, ₹12,000 and ₹18,000 respectively for a month.
- Other expenses are ₹10,000 per month. You are required to:

(i) Compute the cost of processing a Vehicle Loan application on the assumption that 496 Vehicle Loan applications are processed each month.
(ii) Find out the number of Education Loan Applications processed, if the total processing cost per Education Loan Application is same as in the Vehicle Loan Application as computed in (i) above.

Question 53 - Pyq
T Toll Plaza Limited built a 80 kilometer long highway between two cities and operates a toll plaza to collect tolls from passing vehicles using the highway. The company has estimated that 50,000 light weight, 12,000 medium weight and 10,000 heavy weight vehicles will be using the highway in one month in outward journey and the same number for return journey.
As per government notification, vehicles used for medical emergencies, members of parliament, and essential services are exempt from toll charges. It is estimated that 10% of light weight vehicles will pass the highway for such use.
It is the policy of the company that if vehicles return within 24 Hours of their outward journey. The toll fare will be reduced by 25 percent automatically. It is estimated 30% of chargeable light weight vehicles return within the specified time frame.
The toll charges for medium weight vehicles is to be fixed as 2.5 times of the light weight vehicles and that of heavy weight vehicles as 2 times of the medium weight vehicles.
The toll operating and maintenance cost for a month is ₹59,09,090. The company requires a profit of 10% over the total cost to cover interest and other costs.
Required:
a) Calculate the toll rate for each type of vehicles if concession facilities are not available on the return journey.
b) Calculate the toll rate that will be charged from light weight vehicles if a return journey concession facility is available, assuming that the revenue earned from light weight vehicles calculate in option (a) remains the same.

Standard Costing

COST VARIANCES

I. Direct Material Variances

Question 1 - Rtp, Study Material

A manufacturing concern which has adopted Standard Costing furnishes the following information:

Standard Quantity of Materials for 70 kg of Finished Products	100 kg.
Standard Price of Materials	₹1 per kg.
Actual Output	2,10,000 kg.
Materials used	2,80,000 kg.
Actual Cost of Materials	₹2,52,000

Calculate – (a) Materials Usage Variance, (b) Material Price Variance and (c) Material Cost Variance.

Question 2 - Pyq

UV Ltd. presents the following information for November, 2008:

Budgeted Production of Product P	= 200 units.
Standard Consumption of Raw Materials	= 2 kg. per unit of P.
Standard Price of Material A	= ₹6 per kg.

Actually, 250 units of P were produced and Material A was purchased at ₹8 per kg and consumed at 1.8 Kg per unit of P. Calculate the Material Cost Variances.

Question 3 - Pyq

Following are the details of the product Phomex for the month of April 2013:

Standard quantity of material required per unit	5kg
Actual output	1,000 units
Actual cost of materials used	₹7,14,000
Material price variance	₹51,000 (Fav)

Actual price per kg of material is found to be less than standard price per kg of material by ₹10. You are required to calculate:

(i) Actual quantity and Actual price of materials used.
(ii) Material Usage Variance
(iii) Material Cost Variance

Question 4 - Study Material

J.K. Ltd. manufactures NXE by mixing three raw materials. For every batch of 100 kgs. of NXE, 125 kgs. of raw materials are used. In April, 2008, 60 batches were prepared to produce an output of 5,600 kgs. of NXE. The standard and actual Particulars for April, 2008 are as follows:

Raw Materials	Standard		Actual		Quantity of Raw Materials Purchased
	Mix	Price per kg.	Mix	Price per kg.	
	%	₹	%	₹	Kg.
A	50	20	60	21	5,000
B	30	10	20	8	2,000
C	20	5	20	6	1,200

Calculate all variances.

Question 5 - Study Material, Pyq

Gemini Chemical Industries provide the following information from their records:

For making 10 kgs. of GEMCO, the standard material requirements is:

Material	Quantity (Kgs.)	Rate per kg. (₹)
A	8	6.00
B	4	4.00

During April 1988, 1,000 kg of GEMCO were produced. The actual consumption of materials is as under:

Material	Quantity	Rate per kg. (₹)
A	750	7.00

B	500	5.00

Calculate:
(a) Material Cost Variance
(b) Material Price Variance
(c) Material Usage Variance
(d) Material Mix Variance
(e) Material Yield Variance.

Cost of Actual Quantity – Stock Valuation

Question 6 - Pyq

Eskay Ltd. produces an article by blending two basic raw materials. The following standards have been set up for raw materials:

Material	Standard Mix	Standard Price per kg.
A	40%	₹4.00
B	60%	₹3.00

The standard loss in processing is 15%. During September, 1990, the company produced 1,700 kg. of finished output.
The position of stock and purchases for the month of September, 1990 is as under:

Material	Stock on 1.9.90	Stock on 30.9.90	Purchased during September, 90	
	Kg.	Kg.	Kg.	Cost (₹)
A	35	5	800	3,400
B	40	50	1,200	3,000

Calculate the following variances:
(a) Material price variance
(b) Material usage variance
(c) Material yield variance
(d) Material mix variance
(e) Total material cost variance.
Assume first in first out method for the issue of material. The opening stock is to be valued at standard price.

Computation of Missing Data – Reverse Working

Question 7 - Pyq

Compute the missing data indicated by the Question Marks from the following:

Particulars	A	B
Standard Price/Unit	₹12	₹15
Actual Price/Unit	₹15	₹20
Standard Input (kgs.)	50	?
Actual Input (Kgs.)	?	70
Material Price Variance	?	?
Material Usage Variance	?	₹300 (Adverse)
Material Cost Variance	?	?

Material mix variance for both products together was ₹45 Adverse.

Question 8 - Study Material

Following data is extracted from the books of XYZ Ltd. for the month of January, 2020:
(i) Estimation-

Particulars	Quantity (kg.)	Price (₹)	Amount (₹)
Material- A	800	?	--
Material-B	600	30.00	18,000
			--

Normal loss was expected to be 10% of total input materials.
(ii) Actuals-
1480 kg of output produced.

Particulars	Quantity (kg.)	Price (₹)	Amount (₹)
Material- A	900	?	--

Material-B	?	32.50	--
			59,825

(iii) Other Information-
Material Cost Variance = ₹3,625 (F)
Material Price Variance = ₹175 (F)
You are required to CALCULATE:
(i) Standard Price of Material-A;
(ii) Actual Quantity of Material-B;
(iii) Actual Price of Material-A;
(iv) Revised standard quantity of Material-A and Material-B; and
(v) Material Mix Variance.

Question 9 - Pyq
Following details relating to product X during the month of April, 2009 are available:
Standard cost per unit of X:
Materials: 50 kg @ ₹40/kg
Actual production: 100 units
Actual material cost: ₹42/kg
Material price variance: ₹9,800 (Adverse)
Material usage variance: ₹4,000 (Favourable)
Calculate the actual quantity of material used during the month April, 2009.

Question 10 -
One Kilogram of Product 'K' requires two chemicals A and B. The following were the details of Product 'K' for the month of June 2007:
(a) Standard Mix Chemical 'A' 50% and chemical 'B' 50%.
(b) Standard Price per kilogram of Chemical 'A' ₹12 and Chemical 'B' ₹15.
(c) Actual Quantity of Chemical 'B' 70 kilograms.
(d) Actual Price per kilogram of Chemical 'A' ₹15.
(e) Standard Normal Loss 10% of Total Input.
(f) Materials Cost Variance total ₹650 Adverse.
(g) Materials Yield Variance total ₹135 Adverse.
(h) Actual Output is 90 kg.

You are required to calculate:
(1) Material Mix Variance
(2) Material Usage Variance
(3) Material Price Variance
(4) Actual Loss of Actual Input
(5) Actual Input of Chemical 'A'
(6) Actual Price per kilogram of Chemical 'B'.

Question 11 - Study Material
GAP Limited operates a system of standard costing in respect of one of its products which is manufactured within a single cost centre. Following are the details.
Budgeted data:

Material	Qty	Price (₹)	Amount (₹)
A	60	20	1,200
B	40	30	1,200
Inputs	100		2,400
Normal Loss	20	.	
Output	**80**		**2,400**

Actual data:
Actual output 80 units.

Material	Qty	Price (₹)	Amount (₹)
A	70	?	?
B	?	30	?

Material Price Variance (A) ₹105A
Material cost variance ₹275A
You are required to CALCULATE:
(i) Actual Price of material A
(ii) Actual Quantity of material B
(iii) Material Price Variance
(iv) Material Usage Variance
(v) Material Mix Variance
(vi) Material Sub Usage Variance

II. Direct Labour Variances

Labour Cost Variances – Various Groups and Idle Time

Question 12 - Study Material (Adapted), Pyq

100 skilled workmen, 40 semi-skilled workmen and 60 unskilled workmen were to work for 30 weeks to get a contract job completed. The standard weekly wages were ₹60, ₹36 and ₹24 respectively. The job was actually completed in 32 weeks by 80 skilled, 50 semi-skilled and 70 unskilled workmen who were paid ₹65, ₹40 and ₹20 respectively as weekly wages. Find out the labour cost variance, labour rate variance, labour mix variance and labour efficiency variance.

Question 13.

A gang of workers usually consists of 10 men, 5 women and 5 boys in a factory. They are paid at standard hourly rates of ₹1.25, Re. 0.80 and Re. 0.70 respectively. In a normal working week of 40 hours the gang is expected to produce 1,000 units of output.
In a certain week, the gang consisted of 13 men, 4 women and 3 boys. Actual wages were paid at the rates of ₹1.20, Re. 0.85 and Re. 0.65 respectively. Two hours were lost due to abnormal idle time and 960 units of output were produced. Calculate various Labour Variances.

Question 14 - Pyq

The standard labour employment and the actual labour engaged in a 40 hours week for a job are as under:

	Standard		Actual	
Category of workers	No. of workers	Wage Rate Per Hour₹	No. of workers	Wage Rate Per Hour ₹
Skilled	65	45	50	50
Semi-skilled	20	30	30	35
Unskilled	15	15	20	10

Standard output : 2000 units; Actual output : 1800 units; Abnormal Idle time 2 hours in the week. Calculate:
(i) Labour Cost Variance
(ii) Labour Efficiency Variance
(iii) Labour Idle Time Variance.

Question 15 - Pyq

The standard output of Product 'EXE' is 25 units per hour in manufacturing department of a company employing 100 workers The standard wage rate per labour hour is ₹6.
In a 42 hour week, the department produced 1,040 units of 'EXE' despite 5% of the time paid was lost due to an abnormal reason. The hourly wage rate actually paid were ₹6.20, ₹6 and ₹5.70 respectively to 10, 30 and 60 of the workers Compute labour cost, rate, efficiency & idle time variances.

Question 16 - Study Material

NPX Ltd. uses standard costing system for manufacturing of its product X. Following is the budget data given in relation to labour hours for manufacture of 1 unit of Product X :

Labour	**hours**	**Rate (₹)**
Skilled	2	6
Semi-Skilled	3	4
Un-Skilled	5	3

Total	10	

In the month of January, 2020, total 10,000 units were produced following are the details:

Labour	hours	Rate (₹)	Amount (₹)
Skilled	18,000	7	1,26,000
Semi-Skilled	33,000	3.5	1,15,500
Un-Skilled	58,000	4	2,32,000
Total	1,09,000		4,73,500

Actual Idle hours (abnormal) during the month:
Skilled: 500
Semi- Skilled: 700
Unskilled: 800
Total 2,000
CALCULATE:
(a) Labour Variances.
(b) Also show the effect on Labour Rate Variance if 5,000 hours of Skilled Labour are paid @ ₹5.5 per hour and balance were paid @ ₹7 per hour.

Question 17 - Pyq

Following information relates to labour of KAY PEE Ltd.:

Particulars	Skilled	Semi-skilled	Unskilled	Total
Number of workers in standard gang	12	8	5	25
Standard rate per hour(₹)	75	50	40	-
Number of workers in actual gang				25
Actual rate per hour (₹)	80	48	42	

The standard output of gang was 12 units per hour of the product M. The gang was engaged for 200 hours during the month of March 2019 out of which 20 hours were lost due to machine breakdown and 2,295 units of product M were produced. The actual number of skilled workers was 2 times the semi-skilled workers Total labour mix variance was ₹10,800 (A).
You are required to calculate the following:
(i) Actual number of workers in each category.
(ii) Labour rate variance.
(iii) Labour yield variance.
(iv) Labour efficiency variance

Question 18 - Pyq

A manufacturing department of a company has employed 120 workers The standard output of product "NPX" is 20 units per hour and the standard wage rate is ₹25 per labour hour.
In a 48 hours week, the department produced 1,000 units of 'NPX' despite 5% of the time paid being lost due to an abnormal reason. The hourly wages actually paid were ₹25.70 per hour.
Calculate:

i. Labour Cost Variance
ii. Labour Rate Variance
iii. Labour Efficiency Variance
iv. Labour Idle time Variance

III. Variable Overhead Variances

Question 19 - Pyq

The following data is given:

	Budget	Actual
Production (in units)	400	360
Man hours to produce above	8,000	7,000
Variable overheads (in ₹)	10,000	9,150

The standard time to produce one unit of the product is 20 hours
Calculate variable overhead variances.

Question 20 - Study Material

From the following information of G Ltd., CALCULATE (i) Variable Overhead Cost Variance; (ii) Variable Overhead Expenditure Variance and (iii) Variable Overhead Efficiency Variance:
Budgeted production 6,000 units
Budgeted variable overhead ₹1,20,000
Standard time for one unit of output 2 hours
Actual production 5,900 units
Actual overhead incurred ₹1,22,000
Actual hours worked 11,600 hours

Question 21 - Study Material

Paras Synthetics uses Standard costing system in manufacturing of its product 'Star 95 Mask'. The details are as follows;

- Direct Material 0.50 Meter @ ₹60 per meter ₹30
- Direct Labour 1 hour @ ₹20 per hour ₹20
- Variable overhead 1 hour @ ₹10 per hour ₹10
  Total ₹60

During the month of August, 2020 10,000 units of 'Star 95 Mask' were manufactured.
Details are as follows:

- Direct material consumed 5700 mete₹@ ₹58 per meter
- Direct labour hours ? @ ? ₹2,24,400
- Variable overhead incurred ₹1,12,200

Variable overhead efficiency variance is ₹2,000 A. Variable overheads are based on Direct Labour hours
You are required to calculate the missing data and all the relevant Variances.

IV. Fixed Overhead Variances

Question 22 - Pyq, Study Material

A company has a normal capacity of 120 machines, working 8 hours per day of 25 days in a month. The fixed overheads are budgeted at ₹1,44,000 per month. The standard time required to manufacture one unit of product is 4 hours
In April, 1998, the company worked 24 days of 840 machine hours per day and produced 5,305 units of output. The actual fixed overheads were ₹1,42,000.
Compute:
(i) Cost Variance
(ii) Efficiency Variance
(iii) Capacity Variance
(iv) Calendar Variance
(v) Expense Variance
(vi) Volume Variance
(vii) Total fixed overheads Variance.

Question 23 - Pyq, Study Material

S. LTD. has furnished you the following data:

Particulars	Budget	Actual
Number of working days	25	27
Production in units	20,000	22,000
Fixed overheads	₹30,000	₹31,000

Budgeted fixed overhead rate is ₹1 per hour. During the year, the actual hours worked were 31,500. Calculate the following variances:
1. Fixed Overhead Cost Variance
2. Fixed Overhead Expenditure Variance
3. Fixed Overhead Volume Variance
4. Fixed Overhead Efficiency Variance
5. Fixed Overhead Capacity Variance
6. Fixed Overhead Calendar Variance
7. Fixed Overhead Revised Capacity Variance.

Question 24 - Study Material

The cost detail of J&G Ltd. for the month of September, 2020 is as follows:

	Budgeted	Actual
Fixed overhead	₹15,00,000	₹15,60,000
Units of Production	7,500	7,800
Standard time for one unit	2 hours	-
Actual hours worked	-	16,000 hours

Required:

CALCULATE (i) Fixed Overhead Cost Variance (ii) Fixed Overhead Expenditure Variance (iii) Fixed Overhead Volume Variance (iv) Fixed Overhead Efficiency Variance and (v) Fixed Overhead Capacity Variance.

Question 25 - Pyq

XYZ Co. Ltd. provides the following information:

Particulars	Standard	Actual
Production	4,000 units	3,800 units
Working Days	20	21
Fixed Overhead	₹40,000	₹39,000
Variable Overhead	₹12,000	₹12,000

You are required to calculate the following overhead variances:

a) Variable Overhead Variance

b) Fixed Overhead Variance

- (i) Expenditure variance
- (ii) Volume variance

Question 26 - Study Material

The overhead expense budget for a factory producing to a capacity of 200 units per month is as follows:

Description of overhead	Fixed cost per unit in ₹	Variable cost per unit in ₹	Total cost per unit in ₹
Power and fuel	1,000	500	1,500
Repair and maintenance	500	250	750
Printing and stationery	500	250	750
Other overheads	1,000	500	1,500
	3,000	1,500	4,500

The factory has actually produced only 100 units in a particular month. Details of overheads actually incurred have been provided by the accounts department and are as follows:

Description of overhead	Actual cost (₹)
Power and fuel	4,00,000
Repair and maintenance	2,00,000
Printing and stationery	1,75,000
Other overheads	3,75,000

You are required to CALCULATE the Overhead volume variance and the overhead expense variances.

Question 27 - Study Material

The following information was obtained from the records of a manufacturing unit using standard costing system:

Particulars	Standard	Actual
Production	4,000 units	3,800 units
Working Days	20	21
Machine hours	8,000 hours	7,800 hours
Fixed Overhead	₹4,00,000	₹3,90,000
Variable Overhead	₹1,20,000	₹1,20,000

You are required to CALCULATE the following overhead variance:

(a) Variable overhead variances

(b) Fixed overhead variances

Question 28 - Pyq

Premier Industries has a small factory where 52 workers are employed on an average for 25 days a month and they work 8 hours per day. The normal down time is 15%. The firm has introduced standard costing for cost control. Its monthly budget for November, 2020 shows that the budgeted variable and fixed overhead are ₹1,06,080 and ₹2,21,000 respectively.

The firm reports the following details of actual performance for November, 2020, after the end of the month:

Actual hours worked	8,100 hrs
Actual production expressed in standard hours	8,800 hrs
Actual Variable Overheads	₹1,02,000
Actual Fixed Overheads	₹2,00,000

You are required to calculate:

(i) Variable Overhead Variances:

(a) Variable overhead expenditure variance.

(b) Variable overhead efficiency variance.

(ii) Fixed Overhead Variances:

(a) Fixed overhead budget variance.

(b) Fixed overhead capacity variance.

(c) Fixed overhead efficiency variance.

(iii) Control Ratios:

(a) Capacity ratio.

(b) Efficiency ratio.

(c) Activity ratio.

Question 29 - Pyq

In a manufacturing company the standard units of production for the year were fixed at 1,20,000 units and overhead expenditures were estimated to be as follows:

Particulars	**Amount (₹)**
Fixed	12,00,000
Semi-variable (60% expenses are of fixed nature and 40% are of variable nature)	1,80,000
Variable	6,00,000

Actual production during the month of April, 2021 was 8,000 units. Each month has 20 working days. During the month there was one public holiday. The actual overheads were as follows:

Particulars	**Amount (₹)**
Fixed	1,10,000
Semi-variable (60% expenses are of fixed nature and 40% are of variable nature)	19,200
Variable	48,000

You are required to calculate the following variances for the month of April 2021:

(i) Overhead Cost Variance

(ii) Fixed Overhead Cost Variance

(iii) Variable overhead Cost Variance

(iv) Fixed Overhead Volume Variance

(v) Fixed Overhead Expenditure Variance

(vi) Calendar Variance

Variable and Fixed Overhead Variances

Question 30 - Pyq

In a Factory, the standard units of production for the year was fixed at 1,20,000 units. Actual Production during April was 8,000 units. Each month has 20 working days. During the month of April, there was one statutory holiday. The estimated and actual Overheads were as follows:

Overheads	**Estimated**	**Actual**
Fixed	12,000	1,190

Variable	6,000	480
Semi Variable	1,800	192

Semi-Variable Charges include 60% expenses of fixed nature and 40% of variable nature.
Calculate the Expenditure, Volume and Calendar variances.

Question 31 - Pyq

SJ Ltd. has furnished the following information:
Standard overhead absorption rate per unit 20
Standard rate per hour 4
Budgeted production 15,000 units
Actual production 15,560 units
Actual overheads were 2,95,000 out of which 62,500 fixed.
Actual hours 74,000
Overheads are based on the following flexible budget

Production (units)	8,000	10,000	14,000
Total Overheads ( )	1,80,000	2,10,000	2,70,000

You are required to calculate the following overhead variances (on hour's basis) with appropriate workings:
(i) Variable overhead efficiency and expenditure variance
(ii) Fixed overhead efficiency and capacity variance.

Question 32 - Study Material

The following data has been collected from the cost records of a unit for computing the various fixed overhead variances for a period:
Number of budgeted working days = 25
Budgeted man-hours per day = 6,000
Output (budgeted) per man-hour (in units) = 1
Fixed overhead cost as budgeted = ₹1,50,000
Actual number of working days = 27
Actual man-hours per day = 6,300
Actual output per man-hour (in-units) = 0.9
Actual fixed overhead incurred = ₹1,56,000
CALCULATE fixed overhead variances:
(a) Expenditure Variance
(b) Volume Variance,
(c) Fixed Cost Variance.

All Variances

Question 33 -

Sun Ltd turns out only one article, the prime cost standards for which have been established as follows:

Particulars	Per Completed Piece
Material 5 lbs. @ ₹4.20	₹21
Labour 3 Hour @ ₹3.00	₹9

The Production schedule for the month of July 1998 required completion of 5,000 pieces. However 5,120 pieces were actually completed.
Purchases for the month of July 1998 amount to 30,000 lbs. of material at the total invoice price of ₹1,35,000.
Production records for the month of July, 1998 showed the following actual results:

Material requisitioned and used	25,700 lbs
Direct labour 3 hours 15,150 hours	₹48,480

Calculate appropriate Material and Labour Variances.

Question 34 - Study Material, Pyq

The following standards have been set to manufacture a product:

Particulars	Amount (₹)
Direct Materials:	
2 units of A @ ₹4 per unit	8.00

3 units of B @ ₹3 per unit	9.00
15 units of C @ ₹1 per unit	15.00
	32.00
Direct Labour: 3 hours @ ₹8 per hour	24.00
Total standard Prime Cost	56.00

The Company manufactured and sold 6,000 units of the product during the year. Direct Material Costs were as follows:
12,500 units of A at ₹4.40 per unit
18,000 units of B at ₹2.80 per unit
88,500 units of C at ₹1.20 per unit
The Company worked 17,500 Direct Labour hours during the year. For 2,500 of these hours, the Company paid at ₹12 per hour while for the remaining, the wages were paid at the standard rate. Calculate Materials Cost, Price and Usage Variances and Labour Cost, Rate and Efficiency Variances.

Question 35 - Study Material, Pyq

The following information is available from the cost records of Vatika & Co. For the month of August, 2009:

Material Purchased	24,000 kg	₹1,05,600
Material Consumed	22,800 kg	
Actual Wages paid for	5,940 hours	₹29,700
Unit Produced	2160 units.	

Standard Rates and Prices are:
Direct Material Rate is ₹4.00 per unit.
Direct Labour Rate is ₹4.00 per hour
Standard Input is 10 kg. for one unit
Standard requirement is 2.5 hours per unit.
Calculate all Material and Labour Variances for the month of August, 2009.

Question 36 - Pyq

From the Particulars given below, compute: Material Price Variance, Material Usage Variance, Labour Rate Variance, Idle Time Variance and Labour Efficiency Variance with full working details:
1 tonne of Material Input yields a standard output of 1,00,000 units. The standard price of Material is ₹20 per kg. Number of employees engaged is 200. The Standard wage rate per employee per day is ₹6. The standard daily output per employee is 100 units. The actual quantity of material used is 10 tonnes and the actual price paid is ₹21 per kg. Actual Output obtained is 9,00,000 units. Actual number of days worked is 50 and actual rate of wages paid is ₹6.50 per day. Idle time paid for and included in above time is ½ day.

Question 37 - Rtp

LM Limited produces a product 'SX4' which is sold in a 10 Kg. packet. The standard cost card per packet of 'SX4' is as follows:

	₹
Direct materials 10 kg @ ₹90 per kg	900
Direct labour 8 hours @ ₹80 per hour	640
Variable Overhead 8 hours @ ₹20 per hour	160
Fixed Overhead	250
	1,950

Budgeted output for a quarter of a year was 10,000 Kg. Actual output is 9,000 Kg. Actual costs for this quarter are as follows:

	₹
Direct Materials 8,900 Kg @ ₹92 per Kg.	8,18,800
Direct Labour 7,000 hours @ ₹84 per hour	5,88,000
Variable Overhead incurred	1,40,000
Fixed Overhead incurred	2,60,000

You are required to CALCULATE:
(i) Material Usage Variance

(ii) Material Price Variance
(iii) Material Cost Variance
(iv) Labour Efficiency Variance
(v) Labour Rate Variance
(vi) Labour Cost Variance
(vii) Variable Overhead Cost Variance
(viii)Fixed Overhead Cost Variance

Question 38 - Rtp

ABC Ltd. had prepared the following estimation for the month of January:

	Quantity	Rate (₹)	Amount (₹)
Material-A	800 kg.	90.00	72,000
Material-B	600 kg.	60.00	36,000
Skilled labour	1,000 hours	75.00	75,000
Unskilled labour	800 hours	44.00	35,200

Normal loss was expected to be 10% of total input materials and an idle labour time of 5% of expected labour hours was also estimated.
At the end of the month the following information has been collected from the cost accounting department:
The company has produced 1,480 kg. finished product by using the followings:

	Quantity	Rate (₹)	Amount (₹)
Material-A	900 kg.	86.00	77,400
Material-B	650 kg.	65.00	42,250
Skilled labour	1,200 hours	71.00	85,200
Unskilled labour	860 hours	46.00	39,560

You are required to CALCULATE:
(a) Material Cost Variance;
(b) Material Price Variance;
(c) Material Mix Variance;
(d) Material Yield Variance;
(e) Labour Cost Variance;
(f) Labour Efficiency Variance and
(g) Labour Yield Variance.

Question 39 - Pyq

KPR Limited operates a system of standard costing in respect of one of its products which is manufactured within a single cost centre. The Standard Cost Card of a product is as under:

Standard		Unit Cost (₹)
Direct Material (5 kgs. @ ₹4.20)		21.00
Direct Labour	(3 hours @ ₹3.00)	9.00
Factory Overhead	(₹1.20 per labour hour)	3.60
Total Manufacturing Cost		33.60

The production schedule for the month of June, 2007 required completion of 40,000 units. However 40,960 units were completed during the month without opening and closing work-in-progress inventories.
Purchases during the month of June, 2007, 2,25,000 kgs. of material at the rate of ₹4.50 per kg. Production and Sales records for the month showed the following actual results:

Material used	2,05,600 kgs.
Direct labour 1,21,200 hours; Cost incurred	₹3,87,840
Total Factory Overhead Cost incurred	₹1,00,000
Sales	40,000 units

Selling price to be so fixed as to allow a mark-up of 20 percent on selling price.
Required:
(i) Calculate material variances based on consumption of material.
(ii) Calculate labour variances and the total variance for factory overhead.

(iii) Prepare Income Statement for June, 2007 showing actual gross margin.
(iv) An incentive scheme is in operation in the company whereby employees are paid a bonus of 50% of direct labour hour saved at standard direct labour hour rate. Calculate the Bonus amount.

Question 40 - Pyq

The following information is available from the cost records of a Company for February, 1993:

Materials purchased: 20,000 pieces	₹88,000
Materials consumed: 19,000 pieces	
Actual wages paid for 4,950 hours	₹24,750
Factory Overheads Incurred	₹44,000
Factory Overheads Budgeted	₹40,000
Units produced	1,800
Standard Rates and prices are:	
Direct Material Rates	₹4 per piece.
Standard Input	10 pieces per unit.
Direct Labour Rate	₹4 per hour.
Standard requirement	2.5 hours per unit.
Overhead	₹8 per labour hour.

Required:
(a) Show the Standard Cost Card.
(b) Compute all material, labour and overhead variances for February, 1993.

Question 41 - Pyq

The budgeted production of a company is 20,000 units per month. The Standard cost Sheet is as under:

Direct Materials	1.5 kg @ ₹6 per kg
Direct Labour	6 hours @ ₹5 per hour
Variable Overheads	6 hours @ ₹4 per hour
Fixed Overheads	₹3 per unit
Selling Price	₹72 per unit

The following are the actual details for the month:

- Actual Production and Sales 18,750 units.
- Direct Materials consumed 29,860 kg at ₹5.25 kg.
- Direct Labour hours worked 1,18,125 hours at ₹6 per hour.
- Actual Overheads were ₹5,65,000 out of which a sum of ₹40,000 was fixed.
- There is no change in the selling price.

Calculate:
(i) Direct Materials Usage and Price Variances
(ii) Direct Labour Efficiency and Rate Variances
(iii) Variable Overheads Efficiency and Expense Variances
(iv) Fixed Overheads Volume and Expense Variances
(v) Sales Volume Variance in Sales Value and Gross Margin.

Question 42 - Pyq

SP Limited produces a product 'Tempex' which is sold in a 10kg packet. The standard cost card per packet of 'Tempex' are as follows:

	₹
Direct material 10kg @ ₹45 per kg	450
Direct labour 8 hours @ ₹50 per hour	400
Variable overhead 8 hours @ ₹10 per hour	80
Fixed overhead	200
	1,130

Budgeted production for the third quarter of the year was 10,000 kg. Actual output is 9,000 kg.
Actual costs for this quarter are as follows:

	₹
Direct material 8,900 kg @ ₹46 per kg	4,09,400
Direct labour 7,000 hours @ ₹52 per hour	3,64,000
Variable overhead incurred	72,500

Fixed overhead incurred	1,92,000

You are required to calculate:
(i) Material usage variance
(ii) Material price variance
(iii) Material cost variance
(iv) Labour efficiency variance
(v) Labour rate variance
(vi) Labour cost variance
(vii)Variable overhead cost variance
(viii) Fixed overhead cost variance

Cost Variances And WIP Valuation – WAC Method

Question 43 - Rtp, Pyq

A company manufacturing two products uses standard costing system. The following data relating to October, 1996 have been furnished to you.

Particulars	Product A (₹)	Product B (₹)
Standard Cost Per Unit:		
Direct Materials	2	4
Direct Wages	8	6
Fixed Overheads	16	12
	26	22
Units processed/in process:		
Beginning of the month: All materials applied and 50% complete in respect of Labour and Overheads	4000	12,000
End of the month: All materials applied and 80% complete in respect of Labour Overheads	8,000	12,000
Units competed and transferred to warehouse during the month	16,000	20,000

The following were the actual costs recorded during the month:
Direct materials purchased at standard price amount to ₹2,00,000 and the actual cost of which is ₹2,20,000, Direct materials used for consumption at standard price amount to ₹1,75,000. Direct wages for actual hours worked at standard wage rates were ₹4 20,000 and at actual wage rates were ₹4,12,000. Fixed overheads budgeted were ₹8,25,000 and the actual fixed aver heads incurred were ₹8,50,000.
Required to:
Calculate the following for the month of October, 1996:
(i) Direct materials price variance at the point of consumption and at the point of purchase.
(ii) Direct materials usage variance.
(iii) Direct wages rate and efficiency variances
(iv) Fixed overheads volume and expenditure variances.
(v) Standard cost to work-in-process at the end of the month.

Budget v/s Actual – All Variances

Question 44 - Pyq

TQM Ltd. has furnished the following information for the month ending 30th June, 2007:

Particulars	Master Budget	Actual	Variance
Units Produced and sold	80,000	72,000	
Sales (₹)	3,20,000	2,80,000	40,000 (A)
Direct Material (₹)	80,000	73,600	6,400 (F)
Direct Wages (₹)	1,20,000	1,04,800	15,200 (F)
Variable Overheads (₹)	40,000	37,600	2,400 (F)
Fixed Overhead (₹)	40,000	39,200	800 (F)
Total Cost	2,80,000	2,55,200	

The Standard costs of the products are as follows:

Particulars	Per unit (In ₹)
Direct Materials (1 kg. at the rate of Re. 1 per kg.)	1.00

Direct Wages (1 hour at the rate of ₹1.50)	1.50
Variable Overheads (1 hour at the rate of Re. 0.50)	0.50

Actual results for the month showed that 78,400 kg. of material were used and 70,400 labour hours were recorded.
Required:
(i) Prepare Flexible Budget for the month and compare with actual results.
(ii) Calculate Material, Labour, Sales Price, Variable Overhead and Fixed Overhead Expenditure Variances and Sales Volume (Profit) Variance.

Question 45 - Pyq

JS Ltd uses a full standard cost system with Raw Materials Inventory carried at standard. The following data was taken from the Company's records for the year ended 31st December – (in ₹000s)

Opening Raw Materials Inventory	300	Actual Overhead Cost incurred	875
Opening Raw Materials Inventory	250	Overheads Cost Variance	45 F
Net Purchases	410	Opening Work-in Progress Inventory	120
Material Price Variance	10A	Closing Work-in-Progress Inventory	140
Material Usage Variance	20 A	Opening Finished Goods Inventory	360
Direct Labour Cost (Actual)	900	Cost of Goods Sold reported	2240
		'F' denotes Favourable 'A' denotes	
Direct Labour Cost at Standard	840	Adverse.	

Compute the following –
1. Raw Materials Purchases at Standard
2. Raw Materials Consumed at Standard
3. Raw Materials Consumed at Actual
4. Labour Cost Variance
5. Standard Overhead Costs
6. Total Manufacturing Cost at Standard
7. Cost of Goods Manufactured
8. Cost of Products Sold to Customers
9. Closing Finished Goods Inventory

Question 46 - Pyq

A.S. Ltd. operates a system of standard costing in respect of one of its products which is manufactured within a single cost centre, the following information is available:
For one unit of product the standard material input is 20 litres at a standard price of ₹2 per litre. The standard wage rate is ₹6 per hour and 5 hours are allowed to produce one unit. Fixed production overhead is absorbed at the rate of 100% of direct wages cost.
During the month just ended the following occurred:

Actual price paid for material purchased	₹1.95 per litre
Total direct wages cost was	₹1,56,000
Fixed production overhead incurred was	₹1,58,000

Variances	Favourable (₹)	Adverse (₹)
Direct Material Price	8,000	-
Direct Material Usage	-	5,000
Direct Labour Usage	-	5,760
Direct Labour Efficiency	2,760	-
Fixed Production Overhead Expenditure	-	8,000

Calculate the following for the month:
(i) Budgeted output in units.
(ii) Number of litres purchased.
(iii) Number of litres used above standard allowed.
(iv) Actual units produced.
(v) Actual hours worked.
(vi) Actual wage rate per hour.

Question 47 - Pyq

ABC Ltd. has furnished the following information regarding the overheads for the month of June 2020 :

(i)	Fixed Overhead Cost Variance	₹2,800 (Adverse)
(ii)	Fixed Overhead Volume Variance	₹2,000 (Adverse)
(iii)	Budgeted hours for June, 2020	2,400 hours
(iv)	Budgeted Overheads for June,2020	₹12,000
(v)	Actual rate of recovery of overheads	₹8 Per Hour

From the above given information

Calculate:

(1) Fixed Overhead Expenditure Variance
(2) Actual Overheads Incurred
(3) Actual hours for Actual Production
(4) Fixed Overhead Capacity Variance
(5) Standard hours for Actual Production
(6) Fixed Overhead Efficiency Variance

Question 48 - Pyq

A manufacturing firm produces a specific product and adopts standard costing system.
The product is produced within a single cost centre.
Following information related to the product are available from the standard cost sheet of the product:

	Unit Cost (₹)
Direct material 5 kg @ ₹15 per kg	75.00
Direct wages 4 hours @ ₹20 per hour	80.00

During the month of October 2019, the firm purchased 3,50,000 kg of material at the rate of ₹14 per kg.
Production records for the month exhibits the following actual results:

Material used	3,20,000 kg
Direct wages - 2,20,000 hours	₹46,20,000

The production schedule requires completion of 60,000 units in a month. However, the firm produced 62,000 units in the month of October, 2019. There are no opening and closing work-in-progress.
You are required to:
(i) Calculate material cost, price and usage variance.
(ii) Calculate labour cost, Rate and efficiency variance and
(iii) Calculate the amount of bonus, as an incentive scheme is in operation in the company whereby employees are paid a bonus of 50% of direct labour hour saved at standard direct labour hour rate.

Question 49 - Pyq

In a manufacturing unit , a gang of employees usually consist of 20 skilled employees and 15 unskilled employees , paid at a standard hourly rates of Rs 65 and Rs 55 , respectively. In a normal working week of 50 hours, the gang is expected to produce 5000 units of output.
In a certain week, the gang consisted of 25 skilled employees and 20 unskilled employees . actual hourly rates paid were Rs 70 and Rs 50, respectively. Five hours were lost due to abnormal idle time and 5500 units were produced.
You are required to calculate the following variance showing Adverse (A) or Favourable (F) :
(a) Labour cost variance
(b) Labour rate variance
(c) Labour efficiency variance
(d) Labour idle time variance

Question 50 - Mtp

Following information has been provided by a company:

Number of units produced and sold	9,000
Standard labour rate per hour	₹12
Standard hours required for 9,000 units	-
Actual hours required	25,641 hours
Labour efficiency	105.3%
Labour rate variance	₹1,53,846 (A)

You are required to Calculate:
(i) Actual labour rate per hour
(ii) Standard hours required for 9,000 units
(iii) Labour Efficiency variance
(iv) Standard labour cost per unit
(v) Actual labour cost per unit.

Question 51 - Pyq

Y Lid manufactures "Product M" which requires three types of raw materials - "A", "B" & "C". Following information related to 1st quarter of the F.Y. 2022-23 has been collected from its books of accounts. The standard material input required for 1,000 kg of finished product 'M' are as under:

Material	Quantity (Kg.)	Std. Rate per Kg. (₹)
A	500	25
B	350	45
C	250	55
	1100	
Standard Loss	100	
Standard Output	1000	

During the period, the company produced 20,000 kg of product "M" for which the actual quantity of materials consumed and purchase prices are as under:

Material	Quantity (Kg.)	Purchase price per Kg. (₹)
A	11,000	23
B	7,500	48
C	4,500	60

You are required to calculate:
1. Material Cost Variance
2. Material Price Variance for each raw material and Product 'M'
3. Material Usage Variance for each raw material and Product 'M'
4. Material Yield Variance
Note: Indicate the nature of variance i.e. Favourable or Adverse.

Question 52 - Pyq

NC Limited uses a standard costing system for the manufacturing of its product ‘X’. The following information is available for the last week of the month:
25,000 kg of raw material were actually purchased for ₹3,12,500. The expected output is 8 units of product ‘X’ from each one kg of raw material. There is no opening and closing inventories. The material price variance and material cost variance, as per cost records, are ₹12,500 (F) and ₹1800 (A), respectively.
The standard time to produce a batch of 10 units of product ‘X’ is 15 minutes. The standard wage rate per labour hour is ₹50. The company employs 125 workers in two categories, skilled and semi-skilled, in a ratio of 60:40. The hourly wages actually paid were ₹50 per hour for skilled workers and ₹40 per hour for semi-skilled workers The weekly working hours are 40 hours per worker. Standard wage rate is the same for skilled and semi-skilled workers
The monthly fixed overheads are budgeted at ₹76,480. Overheads are evenly distributed throughout the month and assume 4 weeks in a month. In the last week of the month, the actual fixed overhead expenses were ₹19,500.
Required:
1. Calculate the standard price per kg and the standards quantity of raw material.
2. Calculate the material usage variance, labour cost variance, and labour efficiency variance.
3. Calculate the fixed overhead cost variance, the fixed overhead expenditure variance and the fixed overhead volume variance.
Note: Indicate the variance of variance i.e. favourable or Adverse.

MARGINAL COSTING

Question 1 - Study Material

Wonder Ltd. manufactures a single product, ZEST. The following figures relate to ZEST for a one-year period:

Activity level	**50%**	**100%**
Sales and production (units)	400	800
	(₹)	(₹)
Sales	8,00,000	16,00,000
Production costs:		
- Variable	3,20,000	6,40,000
- Fixed	1,60,000	1,60,000
Selling and distribution costs:		
- Variable	1,60,000	3,20,000
- Fixed	2,40,000	2,40,000

The normal level of activity for the year is 800 units. Fixed costs are incurred evenly throughout the year, and actual fixed costs are the same as budgeted. There were no stocks of ZEST at the beginning of the year. In the first quarter, 220 units were produced and 160 units were sold. Required:
(a) COMPUTE the fixed production costs absorbed by ZEST if absorption costing is used?
(b) CALCULATE the under/over-recovery of overheads during the period?
(c) CALCULATE the profit using absorption costing?
(d) CALCULATE the profit using marginal costing?

Question 2 - Study Material

MNP Ltd sold 2,75,000 units of its product at ₹ 37.50 per unit. Variable costs are ₹ 17.50 per unit (manufacturing costs of ₹ 14 and selling cost ₹ 3.50 per unit). Fixed costs are incurred uniformly throughout the year and amounting to ₹ 35,00,000 (including depreciation of ₹ 15,00,000). There is no beginning or ending inventories.
Required: COMPUTE breakeven sales level quantity and cash breakeven sales level quantity.

Question 3 - Study Material

You are given the following Particulars
CALCULATE:
(a) Break-even point
(b) Sales to earn a profit of ₹ 20,000
    i. Fixed cost ₹ 1,50,000
    ii. Variable cost ₹ 15 per unit
    iii. Selling price is ₹ 30 per unit

Question 4 - Study Material

A company has a P/V ratio of 40%. COMPUTE by what percentage must sales be increased to offset: 20% reduction in selling price?

Question 5 - Study Material

PQR Ltd. has furnished the following data for the two years:

	20X3	**20X4**
Sales	₹ 8,00,000	?
Profit/Volume Ratio (P/V ratio)	50%	37.5%
Margin of Safety sales as a % of total sales	40%	21.875%

There has been substantial savings in the fixed cost in the year 20X4 due to the restructuring process. The company could maintain its sales quantity level of 20X3 in 20X4 by reducing selling price.
You are required to CALCULATE the following:
(i) Sales for 20X4 in Value,
(ii) Fixed cost for 20X4,
(iii) Break-even sales for 20X4 in Value.

Question 6 - Study Material

You are given the following data for the year 20X7 of Rio Co. Ltd:

Variable cost	60,000	60%
Fixed cost	30,000	30%
Net profit	10,000	10%
Sales	1,00,000	100%

FIND OUT (a) Break-even point, (b) P/V ratio, and (c) Margin of safety. Also DRAW a break-even chart showing contribution and profit.

Question 7 - Rtp

A Ltd. manufacture and sales its product R-9. The following figures have been collected from cost records of last year for the product R-9:

Elements of Cost	Variable Cost portion	Fixed Cost
Direct Material	30% of Cost of Goods Sold	--
Direct Labour	15% of Cost of Goods Sold	--
Factory Overhead	10% of Cost of Goods Sold	₹ 2,30,000
Administration Overhead	2% of Cost of Goods Sold	₹ 71,000
Selling & Distribution Overhead	4% of Cost of Sales	₹ 68,000

Last Year 5,000 units were sold at ₹ 185 per unit. From the given DETERMINE the followings:
(i) Break-even Sales (in rupees)
(ii) Profit earned during last year
(iii) Margin of safety (in %)
(iv) Profit if the sales were 10% less than the actual sales.
(Assume that Administration Overhead is related with production activity)

Question 8 - Study Material

PREPARE a profit graph for products A, B and C and find break-even point from the following data:

Products	A	B	C	Total
Sales (₹)	7,500	7,500	3,750	18,750
Variable cost (₹)	1,500	5,250	4,500	11,250
Fixed cost (₹)	-	-	-	5,000

Question 9 - Study Material

A company earned a profit of ₹ 30,000 during the year 20X4. If the marginal cost and selling price of the product are ₹ 8 and ₹ 10 per unit respectively, FIND OUT the amount of margin of safety.

Question 10 - Study Material

A Ltd. Maintains margin of safety of 37.5% with an overall contribution to sales ratio of 40%. Its fixed costs amount to ₹ 5 lakhs. CALCULATE the following:
i. Break-even sales
ii. Total sales
iii. Total variable cost
iv. Current profit
v. New 'margin of safety' if the sales volume is increased by 7 ½ %.

Question 11 - Pyq

During a particular period ABC Ltd has furnished the following data:
Sales ₹ 10,00,000
Contribution to sales ratio 37% and
Margin of safety is 25% of sales.
A decrease in selling price and decrease in the fixed cost could change the "contribution to sales ratio" to 30% and "margin of safety" to 40% of the revised sales. Calculate:
(i) Revised Fixed Cost.
(ii) Revised Sales and
(iii) New Break-Even Point.

Question 12 - Study Material

By noting "P/V will increase or P/V will decrease or P/V will not change", as the case May be, STATE how the following independent situations will affect the P/V ratio:
(i) An increase in the physical sales volume;
(ii) An increase in the fixed cost;
(iii) A decrease in the variable cost per unit;
(iv) A decrease in the contribution margin;
(v) An increase in selling price per unit;
(vi) A decrease in the fixed cost;
(vii) A 10% increase in both selling price and variable cost per unit;
(viii) A 10% increase in the selling price per unit and 10% decrease in the physical sales volume;
(ix) A 50% increase in the variable cost per unit and 50% decrease in the fixed cost.
(x) An increase in the angle of incidence.

Question 13 - Study Material

A company can make any one of the 3 products X, Y or Z in a year. It can exercise its option only at the beginning of each year. Relevant information about the products for the next year is given below.

	X	Y	Z
Selling Price (₹ / unit)	10	12	12
Variable Costs (₹ / unit)	6	9	7
Market Demand (unit)	3,000	2,000	1,000
Production Capacity (unit)	2,000	3,000	900
Fixed Costs (₹)	30,000		

Required:
COMPUTE the opportunity costs for each of the products.

Question 14 - Study Material

M.K. Ltd. manufactures and sells a single product X whose selling price is ₹ 40 per unit and the variable cost is ₹ 16 per unit.
(i) If the Fixed Costs for this year are ₹ 4,80,000 and the annual sales are at 60% margin of safety, CALCULATE the rate of net return on sales, assuming an income tax level of 40%
(ii) For the next year, it is proposed to add another product line Y whose selling price would be ₹ 50 per unit and the variable cost ₹ 10 per unit. The total fixed costs are estimated at ₹ 6,66,600. The sales mix of X : Y would be 7 : 3. DETERMINE at what level of sales next year, would M.K. Ltd. break even? Give separately for both X and Y the break-even sales in rupee and quantities.

Question 15 - Study Material

Prisha Limited manufactures three different products and the following information has been collected from the books of accounts:

	Products		
	A	B	C
Sales Mix	40%	35%	25%
Selling Price	₹ 300	₹ 400	₹ 200
Variable Cost	₹ 150	₹ 200	₹ 120
Total Fixed Costs			₹ 18,00,000
Total Sales			₹ 60,00,000

The company has currently under discussion, a proposal to discontinue the manufacture of Product C and replace it with Product E, when the following results are anticipated:

	Products		
	A	B	E
Sales Mix	45%	30%	25%
Selling Price	₹ 300	₹ 400	₹ 300
Variable Cost	₹ 150	₹ 200	₹ 150
Total Fixed Costs			₹ 18,00,000
Total Sales			₹ 64,00,000

Required:
(i) CALCULATE the total contribution to sales ratio and present break-even sales at existing sales mix.
(ii) CALCULATE the total contribution to sales ratio and present break-even sales at proposed sales mix.
(iii) STATE whether the proposed sales mix is accepted or not?

Question 16 - Rtp

Aditya Limited manufactures three different products and the following information has been collected from the books of accounts:

	Products		
	S	**T**	**U**
Sales Mix	35%	35%	30%
Selling Price	₹ 300	₹ 400	₹ 200
Variable Cost	₹ 150	₹ 200	₹ 120
Total Fixed Costs			₹ 18,00,000
Total Sales			₹ 60,00,000

The company has currently under discussion, a proposal to discontinue the manufacture of Product U and replace it with Product M, when the following results are anticipated:

	Products		
	S	**T**	**M**
Sales Mix	50%	25%	25%
Selling Price	₹ 300	₹ 400	₹ 300
Variable Cost	₹ 150	₹ 200	₹ 150
Total Fixed Costs			₹ 18,00,000
Total Sales			₹ 64,00,000

Required :
(i) COMPUTE the PV ratio, total contribution, profit and Break-even sales for the existing product mix.
(ii) COMPUTE the PV ratio, total contribution, profit and Break-even sales for the proposed product mix.

Question 17 - Pyq

Moon Ltd. produces products 'X', 'Y' and 'Z' and has decided to analyse it's production mix in respect of these three products - 'X', 'Y' and 'Z'.
You have the following information :

	X	Y	Z
Direct Materials ₹ (per unit)	160	120	80
Variable Overheads ₹ (per unit)	8	20	12

Direct labour :

Departments:	**Rate per Hour (₹)**	**Hours per unit**	**Hours per unit**	**Hours per unit**
		X	Y	Z
Department-A	4	6	10	5
Department-B	8	6	15	11

From the current budget, further details are as below :

	X	**Y**	**Z**
Annual Production at present (in units)	10,000	12,000	20,000
Estimated Selling Price per unit (₹)	312	400	240
Sales departments estimate of possible sales in the coming year (in units)	12,000	16,000	24,000

There is a constraint on supply of labour in Department-A and its manpower cannot be increased beyond its present level.
Required:
(i) Identify the best possible product mix of Moon Ltd.
(ii) Calculate the total contribution from the best possible product mix.

Question 18 - Pyq

MNP Company Limited produces two products 'A' and 'B'. The relevant cost and sales data per unit of output is as follows:

Particulars	Product A (₹)	Product B (₹)
Direct material	55	60
Direct labour	35	45
Variable factory overheads	40	20
Selling Price	180	175

The availability of machine Hours is limited to 55,000 Hours for the month. The monthly demand for product 'A' and product 'B' is 5,000 units and 6,000 units, respectively. The fixed expense of the company are ₹ 1,40,000 per month. Variable factory overheads are ₹ 4 per machine hour. The company can produce both products according to the market demand.

Calculate the product mix that generates maximum profit for the company in the given situation and also calculate profit of the company.

Question 19 - Study Material

X Ltd. supplies spare parts to an air craft company Y Ltd. The production capacity of X Ltd. facilitates production of any one spare part for a particular period of time. The following are the cost and other information for the production of the two different spare parts A and B:

	Part A	Part B
Per unit	1.6 kgs	1.6 kgs
Alloy usage	0.6 hrs	0.25 hrs
Machine Time: Machine A	0.5 hrs	0.55 hrs
Machine Time: Machine B	145	115
Target Price (₹)	Machine A 4,000 hrs	
Total Hours available	Machine B 4,500 hrs	

Alloy available is 13,000 kgs. @ ₹ 12.50 per kg.

Variable overheads per machine Hours - Machine A: ₹ 80; Machine B: ₹ 100

Required

(i) IDENTIFY the spare part which will optimize contribution at the offered price.

(ii) If Y Ltd. reduces target price by 10% and offers ₹ 60 per hour of unutilized machine hour, CALCULATE the total contribution from the spare part identified above?

Question 20 - Pyq

Two manufacturing companies A and B are planning to merge. The details are as follows:

	A	B
Capacity utilisation (%)	90	60
Sales (₹)	63,00,000	48,00,000
Variable Cost (₹)	39,60,000	22,50,000
Fixed Cost (₹)	13,00,000	15,00,000

Assuming that the proposal is implemented, calculate:

(i) Break-Even sales of the merged plant and the capacity utilization at that stage.

(ii) Profitability of the merged plant at 80% capacity utilization.

(iii) Sales TurNover of the merged plant to earn a profit of ₹ 60,00,000.

(iv) When the merged plant is working at a capacity to earn a profit of ₹ 60,00,000, what percentage of increase in selling price is required to sustain an increase of 5% in fixed overheads.

Question 21 - Study Material

The profit for the year of R.J. Ltd. works out to 12.5% of the capital employed and the relevant figures are as under:

Sales - ₹ 5,00,000

Direct Materials₹ - 2,50,000

Direct Labour - ₹ 1,00,000

Variable Overheads - ₹ 40,000

Capital Employed - ₹ 4,00,000

The new Sales Manager who has joined the company recently estimates for next year a profit of about 23% on capital employed, provided the volume of sales is increased by 10% and simultaneously there is an increase in Selling Price of 4% and an overall cost reduction in all the elements of cost by 2%.
Required
FIND OUT by computing in detail the cost and profit for next year, whether the proposal of Sales Manager can be adopted.

Question 22 - Study Material
XYZ Ltd. has a production capacity of 2,00,000 units per year. Normal capacity utilisation is reckoned as 90%. Standard variable production costs are ₹11 per unit. The fixed costs are ₹3,60,000 per year. Variable selling costs are ₹3 per unit and fixed selling costs are ₹2,70,000 per year. The unit selling price is ₹20.
In the year just ended on 30th June, 20X4, the production was 1,60,000 units and sales were 1,50,000 units. The closing inventory on 30th June was 20,000 units. The actual variable production costs for the year were ₹ 35,000 higher than the standard.
(i) CALCULATE the profit for the year
(a) by absorption costing method and
(b) by marginal costing method.
(ii) EXPLAIN the difference in the profits.

Question 23 - Study Material
An Indian soft drink company is planning to establish a subsidiary company in Bhutan to produce mineral water. Based on the estimated annual sales of 40,000 bottles of the mineral water, cost studies produced the following estimates for the Bhutanese subsidiary:

	Total annual costs	**Percent of Total Annual Cost which is variable**
Material	2,10,000	100%
Labour	1,50,000	80%
Factory Overheads	92,000	60%
Administration Expenses	40,000	35%

The Bhutanese production will be sold by manufacturer's representatives who will receive a commission of 8% of the sale price. No portion of the Indian office expenses is to be allocated to the Bhutanese subsidiary.
You are required to
(i) COMPUTE the sale price per bottle to enable the management to realize an estimated 10% profit on sale proceeds in Bhutan.
(ii) CALCULATE the break-even point in rupees sales as also in number of bottles for the Bhutanese subsidiary on the assumption that the sale price is ₹ 14 per bottle.

Question 24 - Study Material
If P/V ratio is 60% and the Marginal cost of the product is ₹ 20. CALCULATE the selling price?

Question 25 - Study Material
The ratio of variable cost to sales is 70%. The break-even point occurs at 60% of the capacity sales. Find the capacity sales when fixed costs are ₹ 90,000. Also COMPUTE profit at 75% of the capacity sales.

Question 26 - Pyq
The following information pertains to ZB Limited for the year:

Profit volume ratio	30%
Margin of Safety (as % of total sales)	25%
Fixed Cost	₹12,60,000

You are required to calculate:
a) Break even sales value (₹),
b) Total sales value (₹) at present,
c) Proposed sales value (₹) if company wants to earn the present profit after reduction of 10% in fixed cost,
d) Sales in value (₹) to be made to earn a profit of 20% on sales assuming fixed cost remains unchanged,
e) New Margin of Safety if the sales value at present as computed in (b) decreased by 12.5%.

Question 27 - Pyq , Study Material
(i) DETERMINE profit, when sales = ₹ 2,00,000; Fixed cost = ₹ 40,000; BEP = ₹ 1,60,000

(ii) DETERMINE profit, when sales = ₹ 20,000; Fixed cost = ₹ 10,000; BEP = ₹ 40,000

Question 28 - Pyq

XYZ Ltd. has provided the following information:

	Year 2019	Year 2020
Sales	₹ 5,00,000	?
Profit/Volume Ratio (P/V ratio)	40%	25%
Margin of Safety sales as a % of total sales	20%	15%

There is no change in sales quantity level of year 2019 and year 2020, however, there was reduction in selling price in the year 2020. XYZ Ltd. has done restructuring of business and this has resulted in substantial savings in Fixed Cost in the year 2020.

You are required to calculate the following:

(i) Variable Cost in Rupees for year 2019 and year 2020

(ii) Sales for year 2020 in Rupees

(iii) Break-even sales for year 2020 in Rupees

(iv) Fixed cost for year 2020.

Question 29 - Pyq

Following details are related to M/s XYZ Limited:

Total Cost	₹ 56,78,000
Margin of Safety	₹ 48,18,450
Margin of safety (in units)	6,500 units
Break even sales	3,500 units

You are required to calculate:

(i) Profit

(ii) Profit Volume Ratio

(iii) Break even sales (in ₹)

(iv) Fixed costs

Question 30 - Study Material

A company has three factories situated in north, east and south with its Head Office in Mumbai. The management has received the following summary report on the operations of each factory for a period: (₹ in '000)

	Sales		Profit	
	Actual	Over/(Under) Budget	Actual	Over/(Under) Budget
North	1,100	(400)	135	(180)
East	1,450	150	210	90
South	1,200	(200)	330	(110)

CALCULATE for each factory and for the company as a whole for the period : (i) the fixed costs. (ii) break-even sales.

Question 31 - Pyq, Study Material

A company sells its product at ₹ 15 per unit. In a period, if it produces and sells 8,000 units, it incurs a loss of ₹ 5 per unit. If the volume is raised to 20,000 units, it earns a profit of ₹ 4 per unit.

(a) Calculate break-even point both in terms of rupees as well as in units.

(b) Calculate Contribution per unit.

(c) Compute Margin of Safety and Profit if the volume is 27,500 units.

(d) Irrespective of the level of Production if minimum Fixed Costs are ₹ 75,000, find out Shut Down Point.

Question 32 - Study Material

The product mix of a Gama Ltd. is as under:

	Products	
	M	N
Units	54,000	18,000

Selling price	₹ 7.50	₹ 15.00
Variable cost	₹ 6.00	₹ 4.50

FIND the break-even points in units, if the company discontinues product 'M' and replace with product 'O'. The quantity of product 'O' is 9,000 units and its selling price and variable costs respectively are ₹ 18 and ₹ 9. Fixed Cost is ₹ 15,000.

Question 33 - Study Material

Mr. X has ₹ 2,00,000 investments in his business firm. He wants a 15 per cent return on his money. From an analysis of recent cost figures, he finds that his variable cost of operating is 60 per cent of sales, his fixed costs are ₹ 80,000 per year. Show COMPUTATIONS to answer the following questions:
(i) What sales volume must be obtained to break even?
(ii) What sales volume must be obtained to get 15 per cent return on investment?
(iii) Mr. X estimates that even if he closed the doors of his business, he would incur ₹ 25,000 as expenses per year. At what sales would he be better off by locking his business up?

Question 34 - Study Material

An automobile manufacturing company produces different models of Cars. The budget in respect of model 007 for the month of March, 20X9 is as under:

Budgeted Output			40,000 units
		₹ in lakhs	₹ in lakhs
Net Realisation			2,10,000
Variable Costs:			
Materials		79,200	
Labour		15,600	
Direct expenses		37,200	1,32,000
Specific Fixed Costs		27,000	
Allocated Fixed Cost		33,750	60,750
	Total cost		1,92,750
	Profit		17,250
	Sales		2,10,000

CALCULATE:
(i) Profit with 10 percent increase in selling price with a 10 percent reduction in sales volume.
(ii) Volume to be achieved to maintain the original profit after a 10 percent rise in material costs, at the originally budgeted selling price per unit.

Question 35 - Study Material

You are given the following data:

	Sales	**Profits**
Year 20X8	₹ 1,20,000	8,000
Year 20X9	₹ 1,40,000	13,000

FIND OUT –
(i) P/V ratio,
(ii) B.E. Point,
(iii) Profit when sales are ₹1,80,000,
(iv) Sales required earn a profit of ₹12,000,
(v) Margin of safety in year 20X9.

Question 36 - Study Material

A single product company sells its product at ₹ 60 per unit. In 20X8, the company operated at a margin of safety of 40%. The fixed costs amounted to ₹ 3,60,000 and the variable cost ratio to sales was 80%. In 20X9, it is estimated that the variable cost will go up by 10% and the fixed cost will increase by 5%.
(i) FIND the selling price required to be fixed in 20X9 to earn the same P/V ratio as in 20X8.
(ii) Assuming the same selling price of ₹ 60 per unit in 20X9, FIND the number of units required to be produced and sold to earn the same profit as in 20X8.

Question 37 - Study Material
A company has made a profit of ₹ 50,000 during the year 20X8-X9. If the selling price and marginal cost of the product are ₹ 15 and ₹ 12 per unit respectively, FIND OUT the amount of margin of safety.

Question 38 - Study Material
(a) If margin of safety is ₹ 2,40,000 (40% of sales) and P/V ratio is 30% of AB Ltd,
CALCULATE its (1) Break even sales, and (2) Amount of profit on sales of ₹9,00,000.
(b) X Ltd. has earned a contribution of ₹2,00,000 and net profit of ₹1,50,000 of sales of ₹ 8,00,000. What is its margin of safety?

Question 39 - Study Material
A company had incurred fixed expenses of ₹ 4,50,000, with sales of ₹ 15,00,000 and earned a profit of ₹ 3,00,000 during the first half year. In the second half, it suffered a loss of ₹ 1,50,000.
CALCULATE:
(i) The profit-volume ratio, break-even point and margin of safety for the first half year.
(ii) Expected sales volume for the second half year assuming that selling price and fixed expenses remained unchanged during the second half year.
(iii) The break-even point and margin of safety for the whole year.

Question 40 - Study Material
The following information is given by Star Ltd.:
Margin of Safety ₹ 1,87,500
Total Cost ₹ 1,93,750
Margin of Safety 3,750 units
Break-even Sales 1,250 units
Required:
CALCULATE
1. Profit,
2. P/V Ratio,
3. BEP Sales (in ₹) and
4. Fixed Cost.

Question 41 - Study Material
(a) You are given the following data for the coming year for a factory
Budgeted output 8,00,000 units
Fixed expenses ₹40,00,000
Variable expenses per unit ₹ 100
Selling price per unit ₹ 200
DRAW a break-even chart showing the break-even point.
(b) If price is reduced to ₹ 180, what will be the new break-even point?

Question 42 - Study Material
The following are cost data for three alternative ways of processing the clerical work for cases brought before the LC Court System:

	A Manual (₹)	**B Semi automatic (₹)**	**C Fully automatic (₹)**
Monthly fixed costs:			
Occupancy	15,000	15,000	15,000
Maintenance contract	-	5,000	10,000
Equipment lease	-	25,000	1,00,000
Unit variable costs (per report):			
Supplies	40	80	20
Labour	₹200 (5 hr × ₹40)	₹60 (1 hr × ₹60)	₹20 (0.25 hr × ₹80)

Required
(i) CALCULATE cost indifference points. Interpret your results.

(ii) If the present case load is 600 cases and it is expected to go up to 850 cases in near future, SELECT most appropriate on cost considerations?

Question 43 - Study Material

XY Ltd. makes two products X and Y, whose respective fixed costs are F1 and F2. You are given that the unit contribution of Y is one fifth less than the unit contribution of X, that the total of F 1 and F2 is ₹1,50,000, that the BEP of X is 1,800 units (for BEP of X, F2 is not considered) and that 3,000 units is the indifference point between X and Y.(i.e. X and Y make equal profits at 3,000 unit volume, considering their respective fixed costs). There is no inventory buildup as whatever is produced is sold

Required FIND OUT the values F1 and F2 and units contributions of X and Y.

Question 44 - Pyq

LR Ltd. is considering two alternative methods to manufacture a new product it intends to market. The two methods have a maximum output of 50,000 units each and produce identical items with a selling price of ₹ 25 each. The cost are:

	Method-1Semi-Automatic (₹)	**Method-2 Fully Automatic (₹)**
Variable cost per unit	15	10
Fixed Costs	1,00,000	3,00,000

You are required to calculate:

(i) Cost Indifference Point in units. Interpret your results.

(ii) The Break- Even Point of each method in terms of units.

Question 45 - Pyq

A Company has Fixed Cost of ₹ 90,000, Sales ₹ 3,00,000 and Profit of ₹ 60,000.

Required:

(i) Sales volume if in the next period, the Company suffered a loss of ₹ 30,000.

(ii) What is the Margin of Safety for a profit of ₹ 90,000?

Question 46 - Pyq

Product Z has a Profit-Volume Ratio of 28%. Fixed Operating Costs directly attributable to Product Z during the Quarter II of the financial year 2009-10 will be ₹ 2,80,000.

Calculate the Sales Revenue required to achieve a quarterly profit of ₹ 70,000.

Question 47 - Pyq

PQ Ltd. reports the following cost structure at two capacity levels:

Particulars	**2,000 Units (100% capacity)**	**1,500 Units**
Production Overhead I	₹ 3 per unit	₹ 4 per unit
Production Overhead II	₹ 2 per unit	₹ 2 per unit

If the Selling Price, reduced by Direct Material and Labour is ₹ 8 per unit, what would be its Break-Even Point?

Question 48 - Pyq

Following information is available for the first and second quarter of the year 2008-09 of ABC Limited:

Quarter	**Production (In Units)**	**Semi-Variable Cost (₹)**
Quarter I	36,000	2,80,000
Quarter II	42,000	3,10,000

You are required to segregate the Semi-Variable Cost and calculate:

(a) Variable Cost per unit; and

(b) Total Fixed Cost.

Question 49 - Pyq

MNP Ltd sold 2,75,000 units of its product at ₹ 37.50 per unit. Variable costs are ₹ 17.50 per unit (Manufacturing Costs of ₹ 14 and Selling Costs ₹ 3.50 per unit. Fixed Costs are incurred uniformly throughout the year and amount to ₹ 35,00,000 (including Depreciation of ₹ 15,00,000). There is no beginning or ending inventories.

Required:

(i) Estimate Break-Even Sales Level Quantity and Cash Break-Even Sales Level Quantity.

(ii) Estimate the P/V Ratio.
(iii)Estimate the number of units that must be sold to earn an Income (EBIT) of ₹ 2,50,000.
(iv)Estimate the Sales Level to achieve an After-Tax Income (PAT) of ₹ 2,50,000. Assume 40% Corporate Income Tax Rate.

Question 50 - Pyq
The Profit Volume Ratio of X Ltd. is 50% and the Margin of Safety is 40%. You are required to calculate the Net Profit if the Sales Volume is ₹ 1,00,000.

Question 51 - Pyq
The P/V Ratio of Delta Ltd. is 50% and margin of safety is 40%. The company sold 500 units for 5,00,000. You are required to calculate:
(i) Break-even point, and
(ii)Sales in units to earn a profit of 10% on sales

Question 52 - Pyq
Fill in the blanks for each of the following independent situations:

Particulars	A	B	C	D	E
Selling Price per unit	-	₹ 50	₹ 20	-	₹ 30
Variable Cost as % of Selling Price	60	-	75	75	-
No. of units sold	10,000	4,000	-	6,000	5,000
Marginal Contribution	₹ 20,000	₹ 80,000	-	₹ 25,000	₹ 50,000
Fixed Costs	₹ 12,000	-	₹ 1,20,000	₹ 10,000	-
Profit	-	₹ 20,000	₹ 30,000	-	₹ 15,000

Question 53 - Pyq
A company gives the following information:

Margin of Safety	=	3, 75,000
Total Cost	=	3,87,500
Margin of Safety (Qty.)	=	15000 units
Break Even Sales in Units	=	5000units

You are required to calculate :
(i) Selling price per units
(ii) Profit
(iii)Profit/ Volume Ratio
(iv)Break Even Sales (in Rupees)
(v) Fixed Cost

Question 54 - Pyq
MFN Limited started is operation in 2011 with the total production capacity of 2,00,000 units. The following data for two years is made available to you:

	2011	2012
Sales units	80,000	1,20,000
Total cost (₹)	34,40,000	45,60,000

There has been no change in the cost structure and selling price and it is expected to continue in 2013 as well. Selling price is ₹ 40 per unit. You are required to calculate
I. Break-Even Point (in units)
II. Profit at 75% of the total capacity in 2013.

Question 55 - Pyq
ZED Ltd. sells its product at ₹30 per unit. During the quarter ending on 31st March 2014, it produced & sold 16,000 units and suffered a loss of ₹ 10 per unit. If the volume of sales is raised to 40,000 units, it can earn a profit of ₹8 per unit. You are required to calculate:
(i) Break Even Point in Rupees
(ii) Profit if the sale volume is 50,000 units

(iii) Minimum level of production where the company needs not to close the production if unavoidable fixed cost is ₹1,50,000.

Question 56 - Pyq

Following information is available for the years 1 and 2 of PIX Limited:

Particulars	Year 1	Year 2
Sales	₹ 32,00,000	₹ 57,00,000
Profit/(Loss)	(₹ 3,00,000)	₹ 7,00,000

Calculate – (a) PV Ratio, (b) Total Fixed Cost, and (c) Sales required to earn a Profit of ₹ 12,00,000.

Question 57 - Pyq

SHA Limited provides the following trading results:

Year	Sale (₹)	Profit
2012 – 13	25,00,000	10% of sale
2013 – 14	20,00,000	8% of sale

You are required to calculate:
(i) Fixed Cost
(ii) Break Even Point
(iii) Amount of profit, if sale is ₹ 30,00,000
(iv) Sale, when desired profit is ₹ 4,75,000
(v) Margin of safety at a profit of ₹2,70,000

Question 58 - Pyq

The following data relate to a manufacturing Company –
1. Plant Capacity: 4,00,000 units per annum. Present Utilization: 40%
2. Actuals for the year were as under –

(a) Selling Price	₹ 50 per unit
(b) Materials Cost	₹ 20 per unit
(c) Variable Manufacturing Costs	₹ 15 per unit
(d) Fixed Costs	₹ 27 Lakhs

In order to improve capacity utilization, the following proposals are considered –
Reduce Selling Price by 10% and spend additionally ₹ 3Lakhs on Sales Promotion.
Required: How many units should be made in order to earn a Profit of ₹ 5 Lakhs?

Question 59 - Pyq

The following figures are related to LM Limited for the year ending 31st March, 2012: Sales – 24,000 units @ ₹ 200 per unit; P/V Ratio 25% and Break-even Point 50% of sales.
You are required to calculate:
(i) Fixed cost for the year
(ii) Profit earned for the year
(iii) Units to be sold to earn a target net profit of ₹11, 00,000 for a year.
(iv) Number of units to be sold to earn a net income of 25% on cost.
(v) Selling price per unit if Break-even Point is to be brought down by 4,000 units.

Question 60 - Pyq

G Ltd produces a product, which has a Variable Cost of Materials – ₹ 40, Labour – ₹ 10 and Overheads of ₹ 4. The Selling Price is ₹ 90 per unit. Sales for the current year is expected to be 15,000 units and Fixed Overheads are ₹ 1,40,000.
Under a wage agreement, an increase of 10% is payable to all direct workers from the beginning of the forthcoming year, while Material Cost is expected to increase by 7.5%, Variable Overhead by 5% and Fixed Overhead by 3%.
From the above, you are required to calculate the following –
1. Present PV Ratio, Break-Even Point, Margin of Safety and Profits.
2. Sales required to earn a Profit of ₹ 7,50,000, if the current cost and price structure continues.
3. Revised PV Ratio and profits of forthcoming year if the current sales quantity and price were maintained.
4. New Selling Price if the Current PV Ratio is to be maintained in the forthcoming year.
5. Sales Quantity in the forthcoming year, to yield the same as present profits, if the Sale Price remains ₹ 90.

Question 61 - Pyq

A Company manufactures a single product with a capacity of 1,50,000 units per annum. The summarized Profitability Statement for the year is as under:

Particulars	Amount (₹)	Amount (₹)
Sales: 1,00,000 units ₹ 15 per unit		15,00,000
Less: Cost of Sales:		
Direct Materials	3,00,000	
Direct Labour	2,00,000	
Production Overhead:		
Variable	60,000	
Fixed	3,00,000	
Administration Overheads (Fixed)	1,50,000	
Selling and Distribution Overheads:		
Variable	90,000	
Fixed	1,50,000	12,50,000
Profit		2,50,000

You are required to evaluate the following options:

(i) What will be the amount of sales required to earn a target profit of 25% on Sales, if the packaging is improved at a cost of ₹ 1 per unit?

(ii) There is an offer from a large retailer for purchasing 30,000 units per annum, subject to providing a packaging with a different brand name at a cost of ₹ 2 per unit. However, in this case there will be no Selling and Distribution Expenses. Also this will not, in any way, affect the Company's existing business. What will be the break-even price for this additional offer?

(iii) If an expenditure of ₹ 3,00,000 is made on advertising, the sales would increase from the present level of 1,00,000 units to 1,20,000 units at a price of ₹ 18 per unit. Will that expenditure be justified?

(iv) If the Selling Price is reduced by ₹ 2 per unit, there will be 100% capacity utilization. Will the reduction in Selling Price be justified?

Question 62 - Pyq

A Company produces different models of Ceiling Fans. The budget for Model 118 for September is as under – (₹ In Lakhs)

Budgeted Output		40,000 units
Net Realization		700.00
Less: Variable Costs:		
Materials	264.00	
Labour	52.00	
Direct Expenses	124.00	440.00
Specific Fixed Costs	90.00	
Allocated Fixed Costs	112.50	202.50
Total Costs		642.50
Add: Profit		57.50
Sales		700.00

Calculate:

1. Profit with 10% increase in Selling Price with a 10% reduction in Sales Volume.
2. Sales Volume to maintain original profit after a 10% rise in Material Costs, at the originally Budgeted Selling Price per unit.

MARGINAL AND ABSORPTION COSTING SYSTEM

Question 63 - Pyq

Mega Company has just completed its first year of operations. The unit costs on a normal costing basis are as under:

Direct Material 4 kg at ₹ 4	₹ 16.00
Direct Labour 3 Hours at ₹ 18	₹ 54.00

Variable Overhead 3 Hours at ₹ 4	₹ 12.00
Fixed Overhead 3 Hours at ₹ 6	₹ 18.00
Total	₹ 100.00

Selling and administrative Costs:

Variable	₹ 20 per unit
Fixed	₹ 7,60,000

During the year, the Company has the following activity:

Units Produced	24,000
Units Sold	21,500
Units Selling Price	₹ 168
Direct Labour Hours worked	72,000

Actual Fixed Overhead was ₹ 48,000 less than the Budgeted Fixed Overhead. Budgeted Variable Overhead was ₹ 20,000 less than the Actual Variable Overhead. The Company used an expected actual activity level of 72,000 Direct Labour Hours to compute the pre-determine overhead rates.
Required:
(i) Compute the Unit Cost and Total Income under – (a) Absorption Costing and (b) Marginal Costing and also compute the Under or Over Absorption of Overhead.
(ii) Reconcile the difference between the Total Income under Absorption and Marginal Costing.

Question 64 - Pyq

ABC Ltd. can produce 4,00,000 units of a product per annum at 100% capacity. The Variable Production Costs are ₹ 40 per unit and the Variable Selling Expenses are ₹ 12 per sold unit. The budgeted Fixed Production Expenses were ₹ 24,00,000 per annum and the Fixed Selling Expenses were ₹ 16,00,000. During the year ended 31st March, 2008, the Company worked at 80% of its capacity. The operating data for the year are as follows:

Production	3,20,000 units
Sales at ₹ 80 per unit	3,10,000 units
Opening Stock of Finished Goods	40,000 units

Fixed Production Expenses are absorbed on the basis of capacity and Fixed Selling Expenses are recovered on the basis of period.
You are required to prepare Statements of Cost and Profit for the year ending 31st March, 2008:
(i) On the basis of Marginal Costing
(ii) On the basis of Absorption Costing.

Question 65 - Pyq

The Budgeted Sales of three Products of a Company are as follows –

Products	X	Y	Z
Budgeted Sales in units	10,000	15,000	20,000
Budgeted Selling Price per unit	₹ 4.00	₹ 4.00	₹ 4.00
Budgeted Variable Cost Per Unit	₹ 2.50	₹ 3.00	₹ 3.50
Budgeted Fixed Expenses (Total)	₹ 12,000	₹ 9,000	₹ 7,500

Compute for each product – (a) Budgeted Profit, (b) Budgeted Break Even Sales, and (c) Budgeted Margin of Safety in terms of Sales Value. Also compute overall Profit Volume Ratio, Break-Even Point and Margin of Safety.

Question 66 - Pyq

A Company sells two Products, J and K. The Sales Mix is 4 units of J and 3 units of K. The Contribution Margin per unit are ₹ 40 for J and ₹ 20 for K. Fixed Costs are ₹ 6,16,000 per month. Compute the Break-Even Point.

Question 67 - Pyq

Raj Ltd. manufactures three Products X, Y and Z. The unit Selling Prices of these Products are ₹ 100, ₹ 160 and ₹ 75 respectively. The corresponding unit variable costs are ₹ 50, ₹ 80 and ₹ 30. The proportions (quantity wise) in which these products are manufactured and sold are 20%, 30% and 50% respectively. The total fixed costs are ₹ 14,80,000.
Calculate Overall Break-Even Quantity and the product wise break up of such quantity.

Question 68 - Pyq

A Japanese Company is planning to establish a Subsidiary Company in India to produce a product. Based on the estimated annual sales of 40,000 units of the Product, following estimates for the Indian Subsidiary are produced:

Particulars	Total Annual Costs	Percent of Total Annual Cost which is variable
Material	₹ 2,10,000	100%
Labour	₹ 1,50,000	80%
Factory Overheads	₹ 92,000	60%
Administration Expenses	₹ 40,000	35%

The Indian production will be sold by manufacturer's representatives who will receive a Commission of 8% of the Sale Price.

No portion of the Japanese Office Expenses is to be allocated to the Indian Subsidiary.

1. Compute the Sale Price per unit, to enable the Management to realize an estimated 10% Profit on sale proceeds in India.
2. Calculate the BEP in Rupee Sales and in number of units for the Indian Subsidiary on the assumption that the Sale Price is ₹ 14 per unit.

Question 69 - Pyq

Lee Shoe Company sells 5 different styles of Chappals with identical purchase cost and selling prices. The Company is trying to find out the profitability of opening another store, which will have the following expenses and revenues: (Information per pair)

Selling Price	₹ 30.00
Variable Production Cost	₹ 19.50
Salesmen's Commission	₹ 1.50
Total Variable Cost	₹ 21.00

Annual Fixed Expenses are ₹ 3,60,000, made up as Rent ₹ 60,000 Salaries ₹ 2,00,000, Advertising ₹ 80,000 and Other Fixed Costs ₹ 20,000.

Required:

1. Calculate the annual BEP in units & in value. Compute profit or loss if 35,000 pairs of Chappals are sold.
2. Sales Commission is proposed to be discontinued, but instead a fixed amount of ₹ 90,000 is to be incurred in Fixed Salaries. A reduction in Selling Price of 5% is also proposed. What will be the BEP in units?
3. It is proposed to pay the Store Manager ₹ 0.50 per pair as further commission. The selling Price is also proposed to increase by 5%. What would be the BEP in units?
4. Refer to the original data. If the Store Manager were to be paid ₹ 0.30 commission on each pair of chappal sold in excess of the BEP, what would be the Store's Net Profit if 50,000 pairs were sold?

Question 70 - Pyq

Two Firms A Ltd and B Ltd sell the same type of product in the same market. Their budgeted Profit & Loss Account for the year ending 31st March are as follows – (In ₹)

Particulars	A Ltd		B Ltd	
Sales		5,00,000		6,00,000
Variable Costs	4,00,000		4,00,000	
Fixed Costs	30,000	4,30,000	70,000	4,70,000
Net Profit		70,000		1,30,000

1. Calculate at which Sales Level of both the Firms will earn equal profit.
2. State which Firm is likely to earn greater profits in condition of –

(i) Heavy demand for the product, and (ii) Low demand for the product. Give reasons.

Question 71 - Pyq

A Company currently operating at 80% capacity has the following Particulars:

Particulars	Amount (₹)
Sales	32,00,000
Direct Materials	10,00,000
Direct Labour	4,00,000
Variable Overheads	2,00,000

Fixed Overheads	13,00,000

An Export Order has been received that would utilize half the capacity of the Factory. The order cannot be spilt, i.e. it has either to be taken in full executed at 10% below the normal domestic prices, or rejected totally.
The alternatives available to the Management are:
1.Reject the order and continue with the domestic sales only, (as at present), or
2.Accept the order, spilt capacity between overseas and domestic sales and turn away excess domestic demand, or
3.Increase capacity so as to accept the export order and maintain the present domestic sale by –
(a)Buying an equipment that will increase capacity by 10%. This will result in an increase of ₹ 1,00,000 in Fixed Costs, and
(b)Work Overtime to meet balance of required capacity. In that case, Labour will be paid at one and a half times the normal wage rate.
Prepare a Comparative Statement of Profitability and suggest the best alternative.

Question 72 - Pyq

A Company, which manufactures and sells three products, furnishes the following details for a month:

Products	**A**	**B**	**C**
Number of units budgeted	1,00,000 units	38,000 units	46,000 units
Selling Price per unit	₹ 50	₹ 80	₹ 60
Variable Costs per unit	₹ 34	₹ 52	₹ 24

It has been proposed that an intensive advertisement campaign involving an expenditure of ₹ 1,20,000 per month and reduction of Selling Prices will increase the Sales of Product C as under:

- If the Selling Price is reduced to ₹ 55 per unit, the sales will increase to 59,000 units per month.
- If the Selling Price is reduced to ₹ 51 per unit, the sales will increase to 65,000 units per month.

The Fixed Costs of the Company amount to ₹ 34,20,000 per month.
Required:
(a) Calculate the current monthly Break-Even Sales Value of the Company.
(b) Evaluate the two proposals and advise which of the proposals should be implemented.
(c) Calculate the sales units required per month of Product C to justify the expenditure on advertisement in respect of your decision in (b) above.

Question 73 - Mtp

Amy Ltd. manufacture and sales it's product RM. The following figures have been collected from cost records of last year for the product RM:

Elements of Cost	**Variable Cost portion**	**Fixed Cost**
Direct Material	30% of Cost of Goods Sold	-
Direct Labour	15% of Cost of Goods Sold	-
Factory Overhead	10% of Cost of Goods Sold	₹ 3,45,000
Administration Overhead	2% of Cost of Goods Sold	₹ 1,06,500
Selling & Distribution Overhead	4% of Cost of Sales	₹ 1,02,000

Last Year, 7,500 units were sold at ₹ 185 per unit. From the given information, DETERMINE the followings:
(i) Break-even Sales (in rupees)
(ii) Profit earned during last year
(iii) Margin of safety (in %)
(iv) Profit if the sales were 10% less than the actual sales.
(Assume that Administration Overhead is related with production activity)

Question 74 - Pyq

Top-tech a manufacturing company is presently evaluating two possible machines for the manufacture of superior Pen-drives. The following information is available:

Particulars	**Machine A**	**Machine B**
Selling price per unit	₹. 400.00	₹. 400.00
Variable cost per unit	₹. 240.00	₹. 260.00

Total fixed costs per year	₹. 350 lakhs	₹. 200 lakhs
Capacity (in units)	8,00,000	10,00,000

Required:
(i). Recommend which machine should be chosen?
(ii). Would you change your answer, if you were informed that in near future demand will be unlimited and the capacities of the two machines are as follows?

- Machine A - 12,00,000 units
- Machine B - 12,00,000 units Why?

Question 75 - Pyq

UV Limited started a manufacturing unit from 1st October 2021. It produces designer lamps and sells its lamps at ₹. 450 per unit.
During the quarter ending on 31st December, 2021, it produced and sold 12,000 units and suffered a loss of ₹. 35 per unit.
During the quarter ending on 31st March, 2022, it produced and sold 30,000 units and earned a profit of ₹. 40 per unit.
You are required to calculate:
(i). Total fixed cost incurred by UV ltd. per quarter.
(ii). Break Even sales value (in rupees)
Calculate Profit, if the sale volume reaches 50,000 units in the next quarter (i.e., quarter ending on 30th June, 2022).

Question 76 - Rtp

RPP Manufacturers is approached by an international customer for one-time special order similar to one offered to its domestic customers. Per unit data for sales to regular customers is provided below:

Direct material	₹. 693
Direct labour	₹. 315
Variable manufacturing support	₹. 504
Fixed manufacturing support	₹. 1092
Total manufacturing costs	₹. 2604
Markup (50%)	₹. 1302
Targeted selling price	₹. 3906

It is provided that RPP Manufacturers has excess capacity.
Required:
(i). WHAT is the full cost of the product per unit?
(ii). WHAT is the contribution margin per unit?
(iii). WHICH costs are relevant for making the decision regarding this one-time special order? WHY?
(iv). For RPP Manufacturers, WHAT is the minimum acceptable price of this one- time-special order only
(v). For this one-time-only special order, SHOULD RPP Manufacturers consider a price of ₹. 2100 per unit? WHY or why not?

Question 77 - Rtp

The lab corner of Newlife Hospital Trust operates two types of specialist MRI scanning machine- MR10 and MR59. Following details are estimated for the next period:

Machine	MR10	MR59
Running Hours	1,100 (₹.)	2,000 (₹.)
Variable running costs excluding special technology	68,750	1,60,000
Fixed Costs	50,000	2,43,750

A brain scan is normally carried out on machine type MR10. This task uses special technology costing ₹. 100 each and takes four Hours of machine time. Because of the nature of the process, around 10% of the scans produce blurred and therefore useless results.
Required:
CALCULATE the total cost of a satisfactory brain scan on machine type MR10.

Brain scans can also be done on machine type MR59 and would take only 1.8 Hours per scan with a reduced reject rate of 6%. However, the cost of the special technology would be ₹. 137.50 per scan. ADVISE which type should be used, assuming sufficient capacity is available on both types of machines. Consider fixed costs will remain unchanged.

Question 78 - Rtp

The following data are available from the budget records of Finesign Women's Handbag Company for the forthcoming budget period.

	₹.
Selling Price per unit	1000
Variable cost per unit:	
Cost of Material used	750.00
Sales commission	50.00
Total Variable Cost	800.00
Annual fixed expenses:	
Rent	7,00,000
Salaries	11,00,000
Other fixed expenses	5,00,000
Total Fixed Cost	23,00,000

Although the firm manufactures Bags with different styles, they have identical purchase costs and selling price.

Requirement:

a) What is the annual break-even point both in terms of units and value?

b) If the store manager is paid 1 per cent commission on sales, what would be the annual break-even point both in terms of units and value?

c) If the firm decides to pay a fixed salary of ₹. 9,00,000 in lieu of sales commission, what would be the annual break-even point in terms of units and value.

Considering break-even point in requirement (a), If the stores manager is paid 2 per cent commission on each bag sold in excess of the break-even point, what would be the profit if 20000 bags were sold.

Budget and Budgetary Control

Question 1 - Pyq

X Ltd produces and markets three products – Chairs , Table and Benches. The Company is interested in presenting its budget for the next quarter ending 31st March. It expects to sell 4,200 chairs , 800 tables and 500 benches during the said period at the Selling Price of ₹ 50, ₹ 85 and ₹ 158 per unit respectively. The following information is made available for this purpose:

(a) Material and Labour Requirements:

Particulars	Rate	Chairs	Tables	Benches
Timber per unit (in cu. ft)	₹ 50 per cu. ft	0.5	1.2	2.5
Upholstery per unit (in sq. yds)	₹ 20 per sq. yd	0.25	-	-
Carpenter's time (in minutes per unit)	₹ 6 per hour	45	60	75
Fixer and Finisher's time (in minutes perunit)	₹ 4.80 per hour	15	15	30

Fixing and finishing Materials costs 5% of the cost of timber and upholstery.

(b) Inventory Levels planned:

Particulars	Timber (cu. ft)	Upholstery (sq yds)	Chairs (nos.)	Tables (nos.)	Benches (nos.)
Opening	600	400	400	100	50
Closing	650	260	200	300	50

(c) Fixed Overheads would be ₹ 8,000 per month.

Required:

1. Prepare a Production Budget showing quantities to be manufactured.
2. Prepare a Raw Materials Consumption Budget in quantities as well as in rupees.
3. Draw a Direct Wage Cost Budget.
4. Present a statement showing Variable Cost of manufacture per unit of all three products.
5. Find out the Budgeted Net Income for the quarter.

Question 2 - Study Material

The accountant of manufacturing company provides you the following details for year 20X9:

Particulars	(₹)	Particulars	(₹)
Direct materials	1,75,000	Other variable costs	80,000
Direct wages	1,00,000	Other fixed costs	80,000
Fixed factory overheads	1,00,000	Profit	1,15,000
Variable factory overheads	1,00,000	Sales	7,50,000

During the year, the company manufactured two products A and B and the output and costs were:

Particulars	A	B
Output (units)	2,00,000	1,00,000
Selling price per unit	₹ 2.00	₹ 3.50
Direct materials per unit	₹ 0.50	₹ 0.75
Direct wages per unit	₹ 0.25	₹ 0.50

Variable factory overhead is absorbed as a percentage of direct wages. Other variable costs have been computed as: Product A ₹ 0.25 per unit; and B ₹ 0.30 per unit.

During 20X0, it is expected that the demand for product A will fall by 25 % and for B by 50%. It is decided to manufacture a further product C, the cost for which are estimated as follows:

Particulars	Product C
Output (units)	2,00,000
Selling price per unit	₹ 1.75
Direct materials per unit	₹ 0.40
Direct wages per unit	₹ 0.25

It is anticipated that the other variable costs per unit will be the same as for product A.

PREPARE a budget to present to the management, showing the current position and the position for 20X0 . Comment on the comparative results.

Question 3 - Rtp

A Vehicle manufacturer has prepared sales budget for the next few months, and the following draft figures are available:

Month	No. of vehicles
October	40,000
November	35,000
December	45,000
January	60,000
February	65,000

To manufacture a vehicle a standard cost of ₹ 11,42,800 is incurred and sold through dealers at a uniform selling price of ₹ 17,14,200 to customers. Dealers are paid 15% commission on selling price on sale of a vehicle.

Apart from other materials, four units of Part - X are required to manufacture a vehicle. It is a policy of the company to hold stocks of Part-X at the end of each month to cover 40% of next month's production. 48,000 units of Part-X are in stock as on 1st October.

There are 9,500 nos. of completed vehicles in stock as on 1st October and it is policy to have stocks at the end of each month to cover 20% of the next month's sales.

You are required to -

(i) PREPARE Production budget (in nos.) for the month of October, November, December and January.

(ii) PREPARE a Purchase budget for Part-X (in units) for the months of October, November and December.

(iii) CALCULATE the budgeted gross profit for the quarter October to December.

Question 4 - Study Material, Pyq

P Ltd. manufactures two products using one type of material and one grade of labour. Shown below an extract from the company's working papers for the next period's budget:

Particulars	**Product A**	**Product B**
Budgeted Sales	3,600 units	4,800 units
Budgeted Material Consumption per product (Standard Cost = ₹ 12 per kg)	5 kg.	3 kg.
Standard hours allowed per product (Standard rate = ₹ 5 per hour)	5 hours	4 hours

1. Overtime Premium is 50% and is payable, if a worker works for more than 40 hours a week. There are 90 direct workers

2. Target Productivity Ratio (or Efficiency Ratio) for the productive hours worked by the Direct Workers in actually manufacturing the products are 80%. In addition, non-productive downtime is budgeted at 20% of the productive hours worked.

3. There are twelve 5 day weeks in the budget period and it is anticipated that sales and production will occur evenly throughout the whole period.

4. It is anticipated that stock at the beginning of the period will be:

Product A = 1,020 units; Product B = 2,400 units; Raw Material = 4,300 kgs.

The Target Closing Stock, expressed in terms of anticipated activity during the budget period is:

Product A – 15 days Sales, Product B – 20 days Sales, Raw Material – 10 days consumption.

Prepare the Material Purchase Budget and the Wages Budget for the Direct Workers , for the Budget Period, showing the quantities and values.

Question 5 - Pyq

AK Limited produces and sells a single product. Sales budget for calendar year 2012 by a quarter is as under:

Quarters	I	II	III	IV
No. of units to be sold	18,000	22,000	25,000	27,000

The year is expected to open with an inventory of 6,000 units of finished product and close with inventory of 8,000 units. Production is customarily scheduled to provide for 70% of the current quarter's sales demand plus 30% of the following quarter demand. The budgeted selling price per unit is 40. The standard cost details for one unit of the product are as follows.

Variable Cost 34.50 per unit

Fixed Overheads 2 hours 30 minutes @ 2 per hour based on a budgeted production volume of 1, 10,000 direct labour hours for the year. Fixed overheads are evenly distributed through-out the year.

You are required to:

(i) Prepare Quarterly Production Budget for the year.

(ii) In which quarter of the year, company expected to achieve bread-even point.

Question 6 - Study Material

A department of Company X attains sale of ₹ 6,00,000 at 80 per cent of its normal capacity and its expenses are given below:

Particulars	₹
Administration costs:	
Office salaries	90,000
General expenses	2 per cent of sales
Depreciation	7,500
Rates and taxes	8,750
Selling costs:	
Salaries	8 per cent of sales
Travelling expenses	2 per cent of sales
Sales office expenses	1 per cent of sales
General expenses	1 per cent of sales
Distribution costs:	
Wages	15,000
Rent	1 per cent of sales
Other expenses	4 per cent of sales

Draw up flexible administration, selling and distribution costs budget, operating at 90 per cent, 100 per cent and 110 per cent of normal capacity.

Question 7 -

A newly established manufacturing company has an installed capacity to produce 1,00,000 units of a consumer product annually. However its practical capacity is only 90%. The actual capacity utilization May be substantially lower, as the firm is new to the market and demand is uncertain. The following budget has been prepared for 90% capacity utilization:

Particulars	Cost per unit (₹)
Direct Materials	12
Direct Labour	8
Direct Expenses	5
Production Overheads	(40% variable) 10
Administrative Overheads	(100% fixed) 5
Selling and Distribution	(50% variable) 6

You are required to prepare budgets at 60%, 70% and 80% levels of capacity utilization giving clearly the unit variable cost, the unit fixed cost and the total costs under various heads at all the above levels.

Question 8 - Study Material

A factory which expects to operate 7,000 hours , i.e., at 70% level of activity, furnishes details of expenses as under:
Variable expenses - ₹ 1,260
Semi-variable expenses - ₹ 1,200
Fixed expenses - ₹ 1,800
The semi-variable expenses go up by 10% between 85% and 95% activity and by 20% above 95% activity.
PREPARE a flexible budget for 80, 90 and 100 per cent activities.

Question 9 - Study Material

TQM Ltd. has furnished the following information for the month ending 30th June, 20X9:

Particulars	Master Budget	Actual	Variance
Units produced and sold	80,000	72,000	
Sales (₹)	3,20,000	2,80,000	40,000 (A)
Direct material (₹)	80,000	73,600	6,400 (F)
Direct wages (₹)	1,20,000	1,04,800	15,200 (F)
Variable overheads (₹)	40,000	37,600	2,400 (F)
Fixed overhead (₹)	40,000	39,200	800 (F)

Total Cost	2,80,000	2,55,200	

The Standard costs of the products are as follows:

Direct materials (1 kg. at the rate of ₹ 1 per kg.)	1.00
Direct wages (1 hour at the rate of ₹ 1.50)	1.50
Variable overheads (1 hour at the rate of ₹ 0.50)	0.50

Actual results for the month showed that 78,400 kg. of material were used and 70,400 labour hours were recorded.

Required:

(i) PREPARE Flexible budget for the month and compare with actual results.

(ii) CALCULATE Material, Labour, Sales Price, Variable Overhead and Fixed Overhead Expenditure variances and Sales Volume (Profit) variance.

Question 10 - Rtp

Maharatna Ltd., a public sector undertaking (PSU), produces product A. The company is in process of preparing its revenue budget for the year 2022. The company has the following information which can be useful in preparing the budget:

(i) It has anticipated 12% growth in sales volume from the year 2021 of 4,20,000 tonnes.

(ii) The sales price of ₹ 23,000 per tonne will be increased by 10% provided Wholesale Price Index (WPI) increases by 5%.

(iii) To produce one tonne of product A, 2.3 tonnes of raw material are required. The raw material cost is ₹ 4,500 per tonne. The price of raw material will also increase by 10% if WPI increase by 5%.

(iv) The projected increase in WPI for 2022 is 4%

(v) A total of 6,000 employees works for the company. The company works 26 days in a month.

(vi) 85% of employees of the company are permanent and getting salary as per 5- year wage agreement. The earnings per man shift (means an employee cost for a shift of 8 hours) is ₹ 3,000 (excluding terminal benefits). The new wage agreement will be implemented from 1st July 2022 and it is expected that a 15% increase in pay will be given.

(vii) The casual employees are getting a daily wage of ₹ 850. The wages in linked to Consumer Price Index (CPI). The present CPI is 165.17 points and it is expected to be 173.59 points in year 2022.

(viii) Power cost for the year 2021 is ₹ 42,00,000 for 7,00,000 units (1 unit = 1 Kwh). 60% of power is used for production purpose (directly related to production volume) and remaining is for employee quarters and administrative offices.

(ix) During the year 2021, the company has paid ₹ 60,00,000 for safety and maintenance works. The amount will increase in proportion to the volume of production.

(x) During the year 2021, the company has paid ₹ 1,20,000 for the purchase of diesel to be used in car hired for administrative purposes. The cost of diesel will increase by 15% in year 2022.

(xi) During the year 2021, the company has paid ₹ 6,00,000 for car hire charges (excluding fuel cost). In year 2022, the company has decided to reimburse the diesel cost to the car rental company. Doing this will attract 5% GST on Reverse Charge Mechanism (RCM) basis on which the company will not get GST input credit.

(xii) Depreciation on fixed assets for the year 2021 is ₹ 80,40,00,000 and it will be 15% lower in 2022.

Required:

From the above information PREPARE Revenue (Flexible) budget for the year 2022 and also show the budgeted profit/ loss for the year.

Question 11 - Pyq

On 30th September, the Balance Sheet of Melodies Pvt Ltd, retailers of musical instruments, was as under –

Liabilities	**₹**	**Assets**	**₹**
Equity Shares of ₹ 10 each	20,000	Equipment (Net Block)	15,000
Reserves and Surplus	10,000	Stock	20,000
Trade Creditors	40,000	Trade Debtors	15,000
Short Term Loans	15,000	Balance at Bank	35,000
Total	85,000	Total	85,000

The Company is developing a system of forward planning. On 1st October, it supplies the following information.

Month	**Credit Sales (₹)**	**Cash Sales (₹)**	**Credit Purchases (₹)**

September (Actual)	15,000	14,000	40,000
October (Budget)	18,000	5,000	23,000
November (Budget)	20,000	6,000	27,000
December (Budget)	25,000	8,000	26,000

All Trade Debtors are allowed one month's credit and are expected to settle promptly. All Trade Creditors are paid in the month following delivery.
On 1st October, all equipment will be replaced at a cost of ₹ 30,000. ₹ 14,000 was allowed in exchange of the old equipment and a net payment of ₹ 16,000 will be made. Depreciation will be provided at 10% per annum.
Short Term Loans will be repaid in December. The following expenses will be paid –

- Wages – ₹ 3,000 per month.
- Administration – ₹ 1,500 per month.
- Rent – ₹ 3,600 for the next 12 months (to be paid in October).

Prepare a Cash Budget for the months of October, November and December. Also prepare an income statement for the three months ending 31st December, assuming uniform GP of 25%.

Question 12. Write Short Notes on Budget Ratios - Rtp
Explain three Control Ratios used for performance evaluation - Nov 00
Solution 12:
(1) Efficiency Ratio =

(2) Activity Ratio =

(3) Calendar Ratio =

(4) Standard Capacity Usage Ratio =

(5) Actual Capacity Usage Ratio =

(6) Actual usage of Budgeted capacity Ratio =

Question 13 - Pyq
A company manufactures two products X and Y. Product X requires 8 hours to produce while Y requires 12 hours In April, 2004, of 22 effective working days of 8 hours a day, 1,200 units of X and 800 units of Y were produced. The company employs 100 workers in production department to produce X and Y. The budgeted hours are 1,86,000 for the year.
Calculate Capacity, Activity and Efficiency ratio and establish their inter-relationship.

Question 14 - Pyq
Answer the following:
Following data is available for ABC Ltd.:
Standard working hours - 8 hours per day of 5 days per week
Maximum Capacity - 60 employees
Actual working - 50 employees
Actual hours expected to be worked per four week - 8,000 hours
Standard hours expected to be earned per four week - 9,600·hours
Actual hours worked in the four week period - 7,500 hours
Standard hours earned in the four week period - 8,800 hours
The related period is of four weeks.
CALCULATE the following Ratios :
(i) Efficiency Ratio
(ii) Activity Ratio
(iii) Standard Capacity Usage Ratio
(iv) Actual Capacity Usage Ratio
(v) Actual Usage of Budgeted Capacity Ratio

Question 15 - Pyq

A Company manufactures three products namely A, B and C. The current pattern of sales of A, B and C is in the ratio of 8 : 2 : 1 respectively. The relevant data are as under –

Products	A	B	C
Selling Price per unit	₹ 130	₹ 230	₹ 417
Raw Materials per unit	0.50 Kg.	1.2 Kg.	2.5 Kg.
Direct Materials per unit	0.25 kg	-	-
Skilled Labour Hours per unit	4	6	8
Semi-Skilled Labour Hours per unit	2	2	3
Variable Overheads per unit	₹ 20	₹ 40	₹ 80

Prices of Raw Materials and Direct Materials respectively are ₹ 100 and ₹ 40 per Kg. Wage Rates of Skilled and Semi-Skilled Labour respectively are ₹ 6 and ₹ 5. Each Operator works 8 hours a day for 25 days in a month.

The position of inventories is as under –

Particulars	Raw Materials (units)	Direct Materials (units)	A (units)	B (units)	C (units)
Opening	600	400	400	100	50
Closing	650	260	200	300	50

The Fixed Overheads amount to ₹ 2,00,000 per month. The Company desires a profit of ₹ 1,20,000 per month.

Prepare the following for the month –

1. Sales Budget in quantity and value.
2. Production Budget showing the quantity to be manufactured.
3. Purchase Budget Showing the quantity and value.
4. Direct Labour Budget showing the number of workers and wages.

Question 16 - Pyq

Pentax Limited has prepared its expense budget for 20,000 units in its factory for the year 2013 as detailed below:

	₹ per unit
Direct Materials	50
Direct Labour	20
Variable Overhead	15
Direct Expenses	6
Selling Expenses (20% fixed)	15
Factory Expenses (100% fixed)	7
Administration expenses (100% fixed)	4
Distribution expenses (85% variable)	12
Total	129

Prepare an expense budget for the production of 15,000 units and 18,000 units.

Question 17 - Study Material

Jigyasa Ltd. is drawing a production plan for its two products Minimax (MM) and Heavyhigh (HH) for the year 20X9-X0. The company's policy is to hold closing stock of finished goods at 25% of the anticipated volume of sales of the succeeding month. The following are the estimated data for two products:

Particulars	Minimax (MM)	Heavyhigh (HH)
Budgeted Production units	1,80,000	1,20,000
	(₹)	(₹)
Direct material cost per unit	220	280
Direct labour cost per unit	130	120
Manufacturing overhead	4,00,000	5,00,000

The estimated units to be sold in the first four months of the year 20X9X0 are as under

Particulars	April	May	June	July
Minimax	8,000	10,000	12,000	16,000
Heavyhigh	6,000	8,000	9,000	14,000

PREPARE production budget for the first quarter in month wise.

Question 18 - Study Material

Concorde Ltd. manufactures two products using two types of materials and one grade of labour. Shown below is an extract from the company's working papers for the next month's budget:

	Product A	Product B
Budgeted sales (in units)	2,400	3,600
Budgeted material consumption per unit (in kg):		
Material-X	5	3
Material-Y	4	6
Standard labour hours allowed per unit of product	3	5

Material-X and Material-Y cost ₹ 4 and ₹ 6 per kg and labours are paid ₹ 25 per hour. Overtime premium is 50% and is payable, if a worker works for more than 40 hours a week. There are 180 direct workers.

The target productivity ratio (or efficiency ratio) for the productive hours worked by the direct workers in actually manufacturing the products is 80%. In addition the non-productive down-time is budgeted at 20% of the productive hours worked.

There are four 5-days weeks in the budgeted period and it is anticipated that sales and production will occur evenly throughout the whole period.

It is anticipated that stock at the beginning of the period will be:

Product-A 400 units

Product-B 200 units

Material-X 1,000 kg.

Material-Y 500 kg.

The anticipated closing stocks for budget period are as below:

Product-A 4 days sales

Product-B 5 days sales

Material-X 10 days consumption

Material-Y 6 days consumption

Required:

CALCULATE the Material Purchase Budget and the Wages Budget for the direct workers, showing the quantities and values, for the next month.

Question 19 -

Prepare a Sales Overhead Budget for the month of January, February and March from the estimates given below:

Advertisement	₹ 2,500
Salaries of the Sales Department	₹ 5,000
Expenses of the Sales Department	₹ 1,500
Counter Salesmen's Salaries and Dearness Allowance	₹ 6,000

Counter salesmen's commission is 1% on their sales. Travelling salesmen's commission at 10% on their sales and expenses at 5% on their sales. The sales during the period were estimated as follows:

Month	Counter Sales	Travelling Salesmen's Sales
January	₹ 80,000	₹ 10,000
February	₹ 1,20,000	₹ 15,000
March	₹ 1,40,000	₹ 20,000

Question 20 - Pyq

Following data is available for DKG and Co:

Standard working hours - 8 hours per day of 5 days per week

Maximum capacity - 50 employees

Actual working - 40 employees

Actual hours expected to be worked per four week - 6,400 hours

Std. hours expected to be earned per four weeks - 8,000 hours

Actual hours worked in the four- week period - 6,000 hours

Standard hours earned in the four- week period - 7,000 hours

The related period is of 4 weeks. In this period there was a one special day holiday due to national event.

CALCULATE the following ratios:

(1) Efficiency Ratio, (2) Activity Ratio, (3) Calendar Ratio, (4) Standard Capacity Usage Ratio, (5) Actual Capacity Usage Ratio. (6) Actual Usage of Budgeted Capacity Ratio.

Question 21 - Pyq

Following is the sales budget for the first six months of a calendar year in respect of PQR Ltd –

Month	Sales (units)
Jan	10,000
Feb	12,000
March	14,000
April	15,000
May	15,000
June	16,000

Finished Goods inventory at the end of each month is expected to be 20% of Budgeted Sales Quantity for the following month. Finished Goods Inventory was 2,700 units on 1st January. There would be no WIP at the end of any month.

Each unit of Finished Product requires Material X: 4 kgs at ₹ 10/kg and Material Y: 6 kgs at ₹ 15/kg.

Material on hand on 1st January was 19,000 kgs of Material X and 29,000 kgs of Material Y. Monthly Closing Stocks of Material is budgeted to be equal to half of the requirements of next month's production.

Budgeted Direct Labour Hour per unit of finished product is ¾ hour.

Budgeted Direct Labour Cost for the first quarter of the year is ₹ 10,89,000.

Actual data for the 1st quarter ended on 31st March is an under –

- Actual Production Quantity: 40,000 units
- Direct Material Cost (Purchase Cost based on Materials actually issued to production)
  - Material X: 1,65,000 kgs at ₹ 10.20 per kg
  - Material Y: 2,38,000 kgs at ₹ 15.10 per kg
- Actual Direct Labour Hours worked: 32,000 hours
- Actual Direct Labour Costs: ₹ 13,12,000

Required:

1. Prepare the following Budgets –
   (a) Monthly Production Quantity Budget for the 1st Quarter.
   (b) Monthly Raw Material Consumption Quantity Budget from January to April.
   (c) Materials Purchase Quantity Budget for the 1st Quarter.
2. Compute the following Variances –
   (a) Material Cost Variance, Material Price Variance, and Material Usage Variance.
   (b) Direct Labour Cost Variance, Direct Labour Rate Variance, & Direct Labour Efficiency Variance.

Question 22 - Study Material

Float glass Manufacturing Company requires you to PREPARE the Master budget for the next year from the following information:

Sales:

Toughened Glass - ₹ 6,00,000
Bent Glass - ₹ 2,00,000
Direct material cost - 60% of sales
Direct wages - 20 workers @ ₹ 150 per month
Factory overheads:
Indirect labour –
Works manager - ₹ 500 per month
Foreman - ₹ 400 per month
Stores and spares - 2.5% on sales
Depreciation on machinery - ₹ 12,600
Light and power - ₹ 3,000
Repairs and maintenance - ₹ 8,000
Others sundries - 10% on direct wages
Administration, selling and distribution expenses - ₹ 36,000 per year

Question 23 - Pyq

PYE Ltd produces and markets a very popular product called P. The Company is interested in presenting its budget for the second quarter of the year. The following information is made available for this purpose.

1. It expects to sell 50,000 bags of P during the second quarter at a Selling Price of ₹ 9 per bag.
2. Each bag of P requires 2.5 kgs of Raw Material Q and 7.5 kgs of Raw Material R.
3. Q costs ₹ 1.20 per kg, R costs 20 paise per kg and Empty Bag costs 80 paise each.
4. It requires 9 minutes of direct labour time to produce and fill one bag of P. Labour Cost is ₹ 5 per hour.
5. Variable Manufacturing Costs are ₹ 0.45 per bag. Fixed Manufacturing Costs are ₹ 30,000 per quarter.
6. Variable Selling and Administration Expenses are 5% of Sales, and Fixed Administration and Selling Expenses are ₹ 25,000 per quarter.
7. Stock levels are planned as follows:

Particulars	Beginning of Quarter	End of Quarter
Finished Bags of P	15,000 nos.	11,000 nos.
Raw Material Q	32,000 kgs.	26,000 kgs.
Raw Material R	57,000 kgs.	47,000 kgs.
Empty Bags	37,000 nos.	28,000 nos.

Required:

1. Prepare a Production Budget for the quarter.
2. Prepare a Raw Materials Purchase Budget for Q, R and Empty Bags in quantity as well as in rupees.
3. Compute the Budgeted Variable Cost to produce one bag of P.
4. Prepare a statement of Budgeted Net Income for the quarter, and show both per unit and total cost data.

Question 24 - Pyq

AB manufacturing Company manufactures two products A and B. Both Products use a common Raw Material "C". The Raw Material "C" is purchased at the rate of ₹ 45 per kg. from the Market. The Company has made estimates for the year ended 31st March ,2018 (the budget period) as under:

Particulars	Products	
	A	B
Sales in Units	36,000	16,700
Finished Goods Stock Increase by year-end (in Units)	860	400
Post-production Rejection Rate (%)	3	5
Material "C" per completed Unit, net of wastage	4 kg	5 kg
Material "C" wastage in %	5	4

Additional information available is as under:

• Usage of Raw Material "C" is expected to be at a constant rate over the period.
• Annual cost of holding one unit of Raw Material "C" in Stock is 9% of the Material Cost.
• The cost of placing an order is ₹ 250 per order.

You are required to:

(i) Prepare Functional Budgets for the year ended 31st March, 2018 under the following categories:
(A) Production Budget for Products A and B in Units.
(B) Purchase Budget for Raw Material "C" in kg and value.
(ii) Calculate the Economic Order Quantity (EOQ) in kg for Raw Material "C"

Question 25 - Pyq

XYZ Limited is drawing a production plan for its two products – Product 'xml' and Product 'yml' for the year 2015 – 16. The company's policy is to maintain closing stock of finished goods at 25% of the anticipated volume of sales of the succeeding month. The following are the estimated data for the two products:

Particulars	xml	Yml
Budgeted Production (in units)	2,00,000	1,50,000
Direct Material (per unit)	₹ 220	₹ 280
Direct Labour (per unit)	₹ 130	₹ 120
Direct Manufacturing Expenses	₹ 4,00,000	₹ 5,00,000

The estimated units to be sold in the first four months of the year 2015 – 16 are as under:

Particulars	April	May	June	July
Xml	8,000	10,000	12,000	16,000

Yml	6,000	8,000	9,000	14,000

Prepare:
(i) Production Budget (month wise)
(ii) Production Cost Budget (for the first quarter of the year)

Question 26 - Pyq

A single product Company estimated its sales (in units) for the next year quarter-wise as under –

Quarter 1	30,000 units
Quarter 2	37,500 units
Quarter 3	41,250 units
Quarter 4	45,000 units

The Opening Stock of Finished Goods is 10,000 units and the Company expects to maintain the Closing Stock of Finished Goods at 16,250 units at the end of the year. The production pattern in each quarter is based on 80% of the Sales of the current quarter and 20% of the Sales of the next quarter.
The Opening Stock of Raw Materials in the beginning of the year is 10,000 kg and the Closing Stock at the end of the year is required to be maintained at 5,000 kg. Each unit of finished output requires 2 kg of Raw Materials.
The Company proposes to purchase the entire annual requirement of Raw Materials in the first three quarters in the proportion and at the prices given below –

Quarter	Purchase of Raw Materials % to total annual requirement in quantity	Price per kg
I	30%	₹ 2
II	50%	₹ 3
III	20%	₹ 4

The value of the Opening Stock of Raw Materials in the beginning of the year is ₹ 20,000.
Required: Present the following for the next year, quarter-wise:
1. Production Budget in units.
2. Raw Material Consumption Budget in Quantity.
3. Raw Material Purchase Budget in Quantity and Value.
4. Priced Stores Ledger Card of the Raw Material using First in First Out method.

Question 27 - Study Material

K Ltd. produces and markets a very popular product called 'X'. The company is interested in presenting its budget for the second quarter of 2020.
The following information are made available for this purpose:
(i) It expects to sell 1,50,000 bags of 'X' during the second quarter of 2020 at the selling price of ₹ 1,200 per bag.
(ii) Each bag of 'X' requires 2.5 mtr. of raw – material 'Y' and 7.5 mtr. of raw – material 'Z'.
(iii) Stock levels are planned as follows:

Particulars	Beginning of Quarter	End of Quarter
Finished Bags of 'X' (Nos.)	45,000	33,000
Raw – Material 'Y' (mtr.)	96,000	78,000
Raw – Material 'Z' (mtr.)	1,71,000	1,41,000
Empty Bag (Nos.)	1,11,000	84,000

(iv) 'Y' cost ₹ 160 per mtr., 'Z' costs ₹ 30 per mtr. and 'Empty Bag' costs ₹ 110 each.
(v) It requires 9 minutes of direct labour to produce and fill one bag of 'X'. Labour cost is ₹ 70 per hour.
(vi) Variable manufacturing costs are ₹ 60 per bag. Fixed manufacturing costs ₹ 40,00,000 per quarter.
(vii) Variable selling and administration expenses are 5% of sales and fixed administration and selling expenses are ₹ 3,75,000 per quarter.
Required
(i) PREPARE a production budget for the said quarter in quantity.
(ii) PREPARE a raw – material purchase budget for 'Y', 'Z' and 'Empty Bags' for the said quarter in quantity as well as in rupees.
(iii) COMPUTE the budgeted variable cost to produce one bag of 'X'.

Question 28 - Pyq

RST Limited is presently operating at 50% capacity and producing 30,000 units. The entire output is sold at a price of ₹ 200 per unit. The cost structure at the 50% level of activity is as under:

	₹
Direct Material	75 per unit
Direct Wages	25 per unit
Variable overheads	25 per unit
Direct Expenses	15 per unit
Factory Expenses (25% fixed)	20 per unit
Selling & Distribution Exp. (80% variable)	10 per unit
Office & Administration Exp. (100% fixed)	5 per unit

The company anticipates that the variable costs will go up by 10% and fixed costs will go up by 15%.
You are required to prepare an Expense budget, on the basis of marginal cost for the company at 50% and 60% level of activity and find out the profits at respective levels.

Question 29 - Study Material

During the FY 2019-20, P Limited has produced 60,000 units operating at 50% capacity level. The cost structure at the 50% level of activity is as under:

	(₹)
Direct Material	300 per unit
Direct Wages	100 per unit
Variable Overheads	100 per unit
Direct Expenses	60 per unit
Factory Expenses (25% fixed)	80 per unit
Selling and Distribution Exp. (80% variable)	40 per unit
Office and Administrative Exp. (100% fixed)	20 per unit

The company anticipates that in FY 2020-21, the variable costs will go up by 20% and fixed costs will go up by 15%.
The selling price per unit will increase by 10% to ₹ 880
Required:
(i) CALCULATE the budgeted profit/ loss for the FY 2019-20.
(ii) PREPARE an Expense budget on marginal cost basis for the FY 2020-21 for the company at 50% and 60% level of activity and FIND OUT the profits at respective levels.

Question 30 - Pyq, Study Material

Goodluck Ltd is currently operating at 75% of its capacity. In the past two years , the levels of operations were 55% and 65% respectively. Presently, the production is 75,000 units. The Company is planning for 85% capacity level during next year. The cost details (amount in ₹) are as follows –

Particulars	55%	65%	75%
Direct Materials	11,00,000	13,00,000	15,00,000
Direct Labour	5,50,000	6,50,000	7,50,000
Factory Overheads	3,10,000	3,30,000	3,50,000
Selling Overheads	3,20,000	3,60,000	4,00,000
Administrative Overheads	1,60,000	1,60,000	1,60,000
Total Costs	24,40,000	28,00,000	31,60,000

Profit is estimated at 20% on Sales. The following increases in costs are expected during the year –
Direct Materials – 8%, Direct Labour – 5%, Variable Factory OH – 5%, Variable Selling OH – 8%, Fixed Factory OH – 10%, Fixed Selling OH – 15%, Administrative OH – 10%.
Prepare Flexible Budget for the next year at 85% level of capacity. Also ascertain the profit and contribution.

Question 31 - Pyq

You are given the following data of a manufacturing concern:

Particulars	(₹)
Variable expenses (at 50% capacity)	
Materials	48,00,000

Labour	51,20,000
Others	7,60,000
Semi-variable expenses (at 50% capacity)	
Maintenance and repairs	5,00,000
Indirect labour	19,80,000
Sales dept. salaries	5,80,000
Sundry administrative expenses	5,20,000
Fixed expenses:	
Wages & salaries	16,80,000
Rent, rates and taxes	11,20,000
Depreciation	14,00,000
Sundry administrative exp.	17,80,000

The fixed expenses remain constant for all levels of production. Semi-variable expenses remain constant between 45% and 65% of capacity whereas it increases by 10% between 65% and 80% capacity and by 20% between 80% and 100% capacity.
Sales at various levels are as under:

Capacity	**Sales (₹)**
75%	2,40,00,000
100%	3,20,00,000

Prepare flexible budget at 75% and 100% capacity.

Question 32 - Pyq

XYZ Ltd. is engaged in the manufacturing of toys. It can produce 4,20,000 toys at its 70% capacity on per annum basis. Company is in the process of determining sales price for the financial year 2020-21. It has provided the following information:
Direct Material ₹ 60 per unit
Direct Labour ₹ 30 per unit
Indirect Overheads:
Fixed ₹ 65,50,000 per annum
Variable ₹ 15 per unit
Semi-variable ₹ 5,00,000 per annum up to 60% capacity and ₹ 50,000 for every 5% increase in capacity or part thereof up to 80% capacity and thereafter ₹ 75,000 for every 10% increase in capacity or part thereof.
Company desires to earn a profit of ₹ 25,00,000 for the year. Company has planned that the factory will operate at 50% of capacity for first six months of the year and at 75% of capacity for further three months and for the balance three months, factory will operate at full capacity.
You are required to :
(1) Determine the average selling price at which each of the toy should be sold to earn the desired profit.
(2) Given the above scenario, advise whether company should accept an offer to sell each Toy at:
(a) ₹ 130 per Toy
(b) ₹ 129 per Toy

Question 33 - Pyq

The Cost Sheet of a Company based on a budgeted volume of Sales of 3,00,000 units per quarter is as under:

Particulars	**₹ per unit**
Direct Material	5.00
Direct Labour	2.00
Factory Overheads (50% Fixed)	6.00
Selling and Administration Overheads (1/3rd Variable)	3.00
Selling Price	18.00

When the budget was discussed, it was felt that the Company would be able to achieve only a volume of 2,50,000 units of production and sales per quarter. The Company therefore decided that an aggressive sales promotion campaign should be launched to achieve the following improved operations:
Proposal I: Sell 4,00,000 units per quarter

- Spending ₹ 2,00,000 on special advertising.
- The factory fixed costs will increase by ₹ 4,00,000 per quarter.

Proposal II: Sell 5,00,000 units per quarter subject to the following conditions –

- An overall price reduction of ₹ 2 per unit is allowed on all sales.
- Variable Selling and Administration Costs will increase by 5%.
- Direct Material Costs will be reduced by 1% due to Purchase price discounts.
- The fixed factory Costs will increase by ₹ 2,00,000 more.

You are required to prepare a flexible Budget at 2,50,000, 4,00,000 and 5,00,000 units of output per quarter and calculate the Profit at each of the above levels of output.

Question 34 - Pyq

XY Co. Ltd manufactures two products viz., X and Y and sells them through two divisions, East and West. For the purpose of Sales Budget to the Budget Committee, following information has been made available for the year 2014-15:

Product	Budgeted Sales		Actual Sales	
	East Division	West Division	East Division	West Division
X	400 units at ₹ 9	600 units at ₹ 9	500 units at ₹ 9	700 units at ₹ 9
Y	300 units at ₹ 21	500 units at ₹ 21	200 units at ₹ 21	400 units at₹ 21

Adequate market studies reveal that product X is popular but under-priced. It is expected that if the price of X is increased by ₹ 1, it will find a ready market. On the other hand, Y is overpriced and if the price of Y is reduced by ₹ 1, it will have more demand in the market. The company management has agreed for the aforesaid price changes. On the basis of these price changes and the reports of salesmen, following estimates have prepared by the Divisional Managers :

Product	East Division	West Division
X	+ 10%	+5%
Y	+20%	+10%

With the help of intensive advertisement campaign. Following additional sales (over and above the above mentioned estimated sales by Divisional Managers) are possible:

Product	East Division	West Division
X	60 units	70 units
Y	40 units	50 units

You are required to prepare Sales Budget for 2015-16 after incorporating above estimates and also show the Budgeted Sales and Actual Sales of 2014-15.

Question 35 - Study Material

Action Plan Manufacturers normally produce 8,000 units of their product in a month, in their Machine Shop. For the month of January, they had planned for a production of 10,000 units. Owing to a sudden cancellation of a contract in the middle of January, they could only produce 6,000 units in January.

Indirect manufacturing costs are carefully planned and monitored in the Machine Shop and the Foreman of the shop is paid a 10% of the savings as bonus when in any month the indirect manufacturing cost incurred is less than the budgeted provision.

The Foreman has put in a claim that he should be paid a bonus of ₹ 88.50 for the month of January. The Works Manager wonders how anyone can claim a bonus when the Company has lost a sizeable contract. The relevant figures are as under:

Indirect manufacturing	Expenses for a normal month (₹)	Planned for January (₹)	Actual in costs - January (₹)
Salary for foreman	1,000	1,000	1,000
Indirect labour	720	900	600
Indirect material	800	1,000	700
Repairs and maintenance	600	650	600
Power	800	875	740
Tools consumed	320	400	300
Rates and taxes	150	150	150
Depreciation	800	800	800
Insurance	100	100	100
	5,290	5,875	4,990

Do you agree with the Works Manager? Is the Foreman entitled to any bonus for the performance in January? Substantiate your answer with facts and figures. EXPLAIN.

Question 36 - Pyq

Calculate efficiency and activity ratio from the following data:

Capacity ratio	=	75%
Budgeted output	=	6,000 units
Actual output	=	5,000 units
Standard Time per unit	=	4 hours

Question 37 - Study Material

Following data is available for DKG and Co:

Standard working hours	8 hours per day of 5 days per week
Maximum capacity	50 employees
Actual working	40 employees
Actual hours expected to be worked per four week	6,400 hours
Std. hours expected to be earned per four weeks	8,000 hours
Actual hours worked in the four- week period	6,000 hours
Standard hours earned in the four- week period	7,000 hours.

The related period is of 4 weeks. In this period there was a one special day holiday due to national event. CALCULATE the following ratios: (1) Efficiency Ratio, (2) Activity Ratio, (3) Calendar Ratio, (4) Standard Capacity Usage Ratio, (5) Actual Capacity Usage Ratio. (6) Actual Usage of Budgeted Capacity Ratio.

Question 38 - Study Material

A company is engaged in the manufacture of specialised sub-assemblies required for certain electronic equipment. The company envisages that in the forthcoming month, December, 20X9, the sales will take a pattern in the ratio of 3 : 4 : 2 respectively of sub-assemblies, ACB, MCB and DP.

The following is the schedule of components required for manufacture:

Component requirements					
Sub assembly	**Selling price**	**Base board**	**IC08**	**IC12**	**IC26**
ACB	520	1	8	4	2
MCB	500	1	2	10	6
DP	350	1	2	4	8
Purchase price (₹)		60	20	12	8

The direct labour time and variable overheads required for each of the subassemblies are:

	Labour hours		**Variable overheads**
	Grade A	**Grade B**	
ACB	8	16	36
MCB	6	12	24
DP	4	8	24
Direct wage rate per hour (₹)	5	4	-

The labourers work 8 hours a day for 25 days a month.

The opening stocks of sub-assemblies and components for December, 20X9 are as under:

Sub - assemblies		**Components**	
ACB	800	Base Board	1,600
MCB	1,200	IC08	1,200
DP	2,800	IC12	6,000
		IC26	4,000

Fixed overheads amount to ₹ 7,57,200 for the month and a monthly profit target of ₹ 12 lacs has been set. The company is eager for a reduction of closing inventories for December, 20X9 of sub-assemblies and components by 10% of quantity as compared to the opening stock. PREPARE the following budgets for December 20X9:

a) Sales budget in quantity and value.
b) Production budget in quantity
c) Component usage budget in quantity.

d) Component purchase budget in quantity and value.
e) Manpower budget showing the number of workers and the amount of wages payable.

Solution 38:

1. Statement showing contribution

Sub assemblies	ABC (₹)	MCB (₹)	DP (₹)	Total (₹)
Selling price per unit (p.u.): (A)	520	500	350	
Marginal cost p.u.				
Components				
- Base Board	60	60	60	
- IC08	160	40	40	
- IC12	48	120	48	
- IC26	16	48	64	
Labour				
- Grade A	40	30	20	
- Grade B	64	48	32	
Variable production overhead	36	24	24	
Total marginal cost p.u. : (B)	474	370	288	
Contribution p.u. : (C) = (A) - (B)	96	130	62	
Sales ratio: (D)	3	4	2	
Contribution x sales ratio: [(E) = (C) x (D)]	288	520	124	932

2. Desired Contribution for the forthcoming month December, 20X9

Particulars	(₹)
Fixed overheads	7,57,200
Desired profit	12,00,000
Desired contribution	19,57,200

3. Sales mix required i.e. number of batches for the forthcoming month December, 20X9
Sales mix required =Desired contribution/contribution × Sales ratio
= ₹ 19,57,200/932 (Refer to Working notes 1 and 2)
= 2,100 batches

Budgets for December, 20X2
(a) Sales budget in quantity and value

Sub-assemblies	ACB	MCB	DP	Total
Sales (quantity) (2,100 x 3:4:2) (Refer to working note 3)	6,300	8,400	4,200	
Selling price p.u. (₹)	520	500	350	
Sale value (₹)	32,76,000	42,00,000	14,70,000	89,46,000

(b) Production budget in quantity

Sub-assemblies	ACB	MCB	DP
Sales	6,300	8,400	4,200
Add: Closing stock (Opening stock less 10%)	720	1,080	2,520
Total quantity required	7,020	9,480	6,720
Less: Opening stock	800	1,200	2,800
Production	6,220	8,280	3,920

(c) Component usage budget in quantity

Sub-assemblies	ACB	MCB	DP	Total
Production	6,220	8,280	3,920	-
Base board (1 each)	6,220	8,280	3,920	18,420

Component IC08 (8:2:2)	49,760 (6,220 x 8)	16,560 (8,280 x 2)	7,840 (3,920 x 2)	74,160
Component IC12 (4:10:4)	24,880 (6,220 x 4)	82,800 (8,280 x 10)	15,680 (3,920 x 4)	1,23,360
Component IC26 (2:6:8)	12,440 (6,220 x 2)	49,680 (8,280 x 6)	31,360 (3,920 x 8)	93,480

(d) Component Purchase budget in quantity and value

Sub-assemblies	Base Board	IC08	IC12	IC26	Total
Usage in production	18,420	74,160	1,23,360	93,480	
Add: Closing stock (Opening stock less10%)	1,440	1,080	5,400	3,600	
	19,860	75,240	1,28,760	97,080	
Less: Opening stock	1,600	1,200	6,000	4,000	
Purchase (Quantity)	18,260	74,040	1,22,760	93,080	
Purchase price (₹)	60	20	12	8	
Purchase value (₹)	10,95,600	14,80,800	14,73,120	7,44,640	47,94,160

(e) Manpower budget showing the number of workers and the amount of wages payable

Direct labour						
Sub-Assemblies	Budgeted production	Grade A		Grade B		Total
		Hours per unit	Total hours	Hours per unit	Total hours	
ACB	6,220	8	49,760	16	99,520	
MCB	8,280	6	49,680	12	99,360	
DP	3,920	4	15,680	8	31,360	
(A) Total hours			1,15,120		2,30,240	
(B) Hours per man per month			200		200	
(C) Number of workers per month : (A/B)			576		1,152	
(D) Wage rate per month (₹)			1,000		800	
(E) Wages payable (₹) : (C × D)			5,76,000		9,21,600	14,97,600

Question 39 - Pyq

SR Ltd. is a manufacturer of Garments. For the first three months of financial year 2022-23 commencing on 1st April 2022, production will be constrained by direct labour. It is estimated that only 12,000 hours of direct labour hours will be available in each month.

For market reasons, production of either of the two garments must be at least 25% of the production of the other. Estimated cost and revenue per garment are as follows:

	Shirt (₹.)	**Short (₹.)**
Sales price	60	44
Raw Materials		
Fabric @12 per metre	24	12
Dyes and cotton	6	4
Direct labour @ 8 per hour	8	4
Fixed Overhead @ 4 per hour	4	2
Profit	18	22

From the month of July 2022 direct labour will no longer be a constraint. The company expects to be able to sell 15,000 shirts and 20,000 shorts in July, 2022. There will be no opening stock at the beginning of July 2022.

Sales volumes are expected to grow at 10% per month cumulatively thereafter throughout the year. Following additional information is available:

The company intends to carry stock of finished garments sufficient to meet 40% of the next month's sale from July 2022 onwards.
The estimated selling price will be same as above.
Required:
i. Calculate the number of shirts and shorts to be produced per month in the first quarter of financial year 2022-2023 to maximize company's profit.
ii. Prepare the following budgets on a monthly basis for July, August and September 2022:
a) Sales budget showing sales units and sales revenue for each product.
b) Production budget (in units) for each product.

Question 40 - Rtp, Mtp

The information of Z Ltd. for the year ended 31st March 2020 is as below:

Particulars	**Amount (₹)**
Direct materials	17,50,000
Direct wages	12,50,000
Variable factory overhead	9,50,000
Fixed factory overhead	12,00,000
Other variable costs	6,00,000
Other fixed costs	4,00,000
Profit	8,50,000
Sales	70,00,000

During the year, the company manufactured two products, X and Y, and the output and cost were:

	X	**Y**
Output (units)	8,000	4,000
Selling price per unit (₹)	600	550
Direct material per unit (₹)	140	157.50
Direct wages per unit (₹)	90	132.50

Variable factory overheads are absorbed as a percentage of direct wages and other variable costs are computed as:
Product X – ₹ 40 per unit and Product Y- ₹ 70 per unit.
For the FY 2020-21, due to a pandemic, it is expected that demand for product X and Y will fall by 20% & 10% respectively. It is also expected that direct wages cost will raise by 20% and other fixed costs by 10%. Products will be required to be sold at a discount of 20%.
You are required to:
(i) PREPARE product- wise profitability statement on marginal costing method for the FY 2019-20 and
(ii) PREPARE a budget for the FY 2020-21.

Question 41 - Pyq

TK Ltd. has estimated the following figures for its two products "X" and "Y" for the coming year:

	Product X (₹)	**Product Y (₹)**
Sales Units	2,000	2,500
Raw material cost per unit	30	40
Direct Labour Cost per unit	20	14
Variable overhead per unit	15	10
Fixed overhead	50,000	60,000
Selling price per unit	140	200

Company has received a proposal that if an additional fixed expenditure of ₹ 16,000 on Product X and ₹ 17,000 on Product Y is incurred, the sales for both the products can be increased by 10% but for this purpose, variable overheads shall also be increased by 20% for Product X and 10% for Product Y.
(i) You are required to prepare 'flexible budget' for both the products :
(a) Before new proposal and
(b) After new proposal

(ii) Advise the company whether the proposal should accept or not :
(a) If both the products are independent and
(b) If both the products are not independent .

Question 42 - Rtp

The accountant of manufacturing company provides you the following details for year 2019- 20:

Particulars	(₹)
Direct materials	28,00,000
Direct Wages	16,00,000
Fixed factory overheads	16,00,000
Variable factory overheads	16,00,000
Other variable costs	12,80,000
Other fixed costs	12,80,000
Profit	18,40,000
Sales	1,20,00,000

During the year, the company manufactured two products A and B and the output and costs were:

Particulars	A	B
Output (units)	2,00,000	1,00,000
Selling price per unit	₹ 32.00	₹ 56.00
Direct materials per unit	₹ 8.00	₹ 12.00
Direct wages per unit	₹ 4.00	₹ 8.00

Variable factory overhead is absorbed as a percentage of direct wages. Other variable costs have been computed as: Product A ₹ 4.00 per unit; and B ₹ 4.80 per unit.
During 2020-21, it is expected that the demand for product A will fall by 25% and for B by 50%. It is decided to manufacture a new product C, the cost for which is estimated as follows:

Particulars	Product C
Output (units)	2,00,000
Selling price per unit	₹ 28.00
Direct materials per unit	₹ 6.40
Direct wages per unit	₹ 4.00

It is anticipated that the other variable costs per unit of Product C will be same as for product A.
PREPARE a budget to present to the management, showing the current position and the position for 2020-21.
COMMENT on the comparative results.

Question 43 - Mtp

T Ltd manufactures and sells a single product and has estimated sales revenue of ₹ 1,51,20,000 during the year based on 20% profit on selling price. Each unit of product requires 6 kg of material A and 3 kg of material B and processing time of 4 hours in machine shop and 2 hours in assembly shop. Factory overheads are absorbed at a blanket rate of 20% of direct labour. Variable selling & distribution overheads are ₹ 30 per unit sold and fixed selling & distribution overheads are estimated to be ₹ 34,56,000. The other relevant details are as under:

Purchase Price: Material A ₹ 80 per kg
Material B ₹ 50 per kg

Labour Rate: Machine Shop ₹ 70 per hour
Assembly Shop ₹ 35 per hour

	Finished Stock	Material A	Material B
Opening Stock	2,500 units	7,500 kg	4,000 kg
Closing Stock	3,000 units	8,000 kg	5,500 kg

Required
(i) CALCULATE number of units of product proposed to be sold and selling price per unit,
(ii) PREPARE Production Budget in units and

PREPARE Material Purchase Budget in units.

Question 44 - Pyq

A Limited has furnished the following information for the months from 1st January to 30th April, 2023:

	January	February	March	April
Number of Working days	25	24	26	25
Production (in units) per Working day	50	55	60	52
Raw Material Purchases (% by weight to total of 4 months)	21%	26%	30%	23%
Purchase price of raw material (per kg)	₹ 10	₹ 12	₹ 13	₹ 11

Quantity of raw material per unit of product : 4 kg.
Opening stock of raw material on 1st January : 6,020 kg. (Cost ₹ 63, 210)
Closing stock of raw material on 30th April : 5,100 kg.
All the purchases of material are made at the start of each month.
Required:
a) Calculate the consumption of raw materials (in kgs) month-by-month and in total.
b) Calculate the month-wise quantity and value of raw materials purchased.
c) Prepare the priced stores ledger for each month using the FIFO method.

Question 45 - Pyq

PQR Limited manufactures three products – X, Product Y and Product Z. The output for the current year is 2,50,000 units of Product X, 2,80,000 units of Product Y and 3,20,000 units of Product Z respectively. Selling price of Product X is 1.25 times of Product Z whereas Product Y can be sold at double the price at which product Z can be sold. Product Z can be sold at a profit of 20% on its marginal cost.
Other information are as follows:

	Product X	Product Y	Product Z
Direct Materials Cost (per unit)	₹ 20	₹ 20	₹ 20
Direct Wages Cost (per unit)	₹ 16	₹ 24	₹ 16

Raw materials used for manufacturing all the three products is the same. Direct Wages are paid @ ₹ 4 per labour hour. Total overhead cost of the company is ₹ 52,80,000 for the year, out of which ₹ 1 per labour is variable and the rest is fixed.
In the next year it is expected that sales of product X and product Z will increase by 12% and 15% respectively and sale of product Y will decline by 5%. The total overhead cost of the company for the next year is estimated at ₹ 55,08,000. The variable cost of ₹ 1 per labour hour remains unchanged. It is anticipated that all other costs will remain same for the next year and there is no opening and closing stock. Selling Price per unit of each product will remain unchanged in the next year.
Prepare a budget showing the current position and the position for the next year clearly indicating the total product-wise contribution and profit for the company as a whole.

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