MODEL TEST PAPERS

(RELEVANT FOR MAY, 2025 EXAMINATION AND ONWARDS)

INTERMEDIATE COURSE

GROUP - II

BOARD OF STUDIES

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF INDIA

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MODEL TEST PAPERS

INTERMEDAITE COURSE GROUP - II

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PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

1. Arnav Ltd. manufactures chemical solutions used in paint and adhesive products. Chemical solutions are produced in different processes. Some of the processes are hazardous in nature which may results in fire accidents.

   At the end of the last month, one fire accident occurred in the factory. The fire destroyed some of the paper files containing records of the process operations for the month.

   You being an associate to the Chief Manager (Finance), are assigned to prepare the process accounts for the month during which the fire occurred. From the documents and files of other sources, following information could be retrieved:

   Opening work-in-process at the beginning of the month was 500 litres, 80% complete for labour and 60% complete for overheads. Opening work-in-process was valued at ₹ 2,78,000.

   Closing work-in-process at the end of the month was 100 litres, 20% complete for labour and 10% complete for overheads.

   Normal loss is 10% of input (fresh) and total losses during the month were 800 litres partly due to the fire damage.

   Output transferred to finished goods was 3,400 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 is ₹ 660 for the month made up as follows:

Raw Material ₹ 300 Labour ₹ 200 Overheads ₹ 160

The company uses FIFO method to value work-in-process and finished goods.

The following information are required for managerial decisions:

i. How much quantity of raw material introduced during the month?
   - A. 4,300 Litres
   - B. 3,500 Litres
   - C. 4,200 Litres
   - D. 3,800 Litres

ii. The Quantity of normal loss and abnormal loss are:
   - A. Normal loss- 380 litres & Abnormal loss- 420 litres
   - B. Normal loss- 350 litres & Abnormal loss – 450 litres
   - C. Normal loss- 430 litres & Abnormal loss – 370 litres
   - D. Normal loss- 420 litres & Abnormal loss – 380 litres.

iii. Value of raw material added to the process during the month is:
   - A. ₹ 10,10,000
   - B. ₹ 10,33,600
   - C. ₹ 10,18,400
   - D. ₹ 10,20,000

iv. Value of labour and overhead in closing Work-in-process are:
   - A. ₹ 4,000 & ₹ 1,600 respectively
   - B. ₹ 20,000 & ₹ 16,000 respectively
   - C. ₹ 16,000 & ₹ 9,000 respectively
   - D. ₹ 13,200 & ₹ 6,600 respectively

v. Value of output transferred to finished goods is:
   - A. ₹ 22,57,200
   - B. ₹ 20,06,400
   - C. ₹ 22,44,000
   - D. ₹ 19,27,200

(5 x 2 = 10 Marks)

2. M Ltd. is producing a single product and may expand into product diversification in next one to two years. M Ltd. is amongst a labour-intensive company where majority of processes are done manually. Employee cost is a major cost

element in the total cost of the company. The company conventionally uses performance parameters Earnings per manshift (EMS) to measure cost paid to an employee for a shift of 8 hours, and Output per manshift (OMS) to measure an employee's output in a shift of 8 hours.

The Chief Manager (Finance) of the company has emailed you few information related to the last month. The email contains the following data related to the last month:

During the last month, the company has produced 2,34,000 tonnes of output. Expenditures for the last months are:

(i) Raw materials consumed ₹ 50,00,000

(ii) Power consumed 13,000 Kwh @ ₹ 8 per Kwh to run the machines for production.

(iii) Diesels consumed 2,000 litres @ ₹ 93 per litre to run power generator used as alternative or backup for power cuts.

(iv) Wages & salary paid – ₹ 6,40,00,000

(v) Gratuity & leave encashment paid – ₹ 64,20,000

(vi) Hiring charges paid for HEMM- ₹ 30,00,000. HEMM are directly used in production.

(vii) Hiring charges paid for cars used for official purpose – ₹ 66,000

(viii) Reimbursement of diesel cost for the cars – ₹ 22,000

(ix) The hiring of cars attracts GST under RCM @5% without credit.

(x) Maintenance cost paid for weighing bridge (used for weighing of final goods at the time of dispatch) – ₹ 12,000

(xi) AMC cost of CCTV installed at weighing bridge (used for weighing of final goods at the time of dispatch) and factory premises is ₹ 8,000 and ₹ 18,000 per month respectively.

(xii) TA/ DA and hotel bill paid for sales manager- ₹ 36,000

(xiii) The company has 1,800 employees works for 26 days in a month.

You are asked to calculate the followings:

i. What is the amount of prime cost incurred during the last month:

   A. ₹ 7,54,20,000

   B. ₹ 7,57,10,000

   C. ₹ 7,56,06,000

   D. ₹ 7,87,10,000

ii. What is the total and per shift cost of production for last month:

   A. ₹ 7,87,10,000 and ₹ 336.37 respectively

B. ₹ 7,87,10,000 and ₹ 1,681.84 respectively

C. ₹ 7,87,28,000 and ₹ 1,682.22 respectively

D. ₹ 7,87,28,000 and ₹ 336.44 respectively

iii. What is the value of administrative cost incurred during the last month:

A. ₹ 92,400

B. ₹ 88,000

C. ₹ 1,48,400

D. ₹ 1,44,000

iv. What is the value of selling and distribution cost and total cost of sales:

A. ₹ 36,000 & ₹ 7,88,76,400 respectively

B. ₹ 56,000 & ₹ 7,88,76,400 respectively

C. ₹ 36,000 & ₹ 7,88,72,000 respectively

D. ₹ 56,000 & ₹ 7,88,72,000 respectively

v. What is the value EMS and OMS for the last month:

A. ₹ 1,504.70 & 5 tonnes respectively

B. ₹ 1,367.52 & 5 tonnes respectively

C. ₹ 1,504.70 & 4.37 tonnes respectively

D. ₹ 1,367.52 & 4.37 tonnes respectively **(5 x 2 = 10 Marks)**

3. The wages budget for the last period was based on a standard repair time of 30 minutes per unit and a standard wage rate of ₹ 50 per hour. The actual data for the last period are as follows:

Number of units = 30,000

Labour rate variance = 7,500 (A)

Labour efficiency variance = Nil

From the information find out the actual rate of wages per unit

A. ₹ 50

B. ₹ 25.50

C. ₹ 50.50

D. ₹ 25.25 **(2 Marks)**

4. The following extract is taken from the overhead budget of X:

Budgeted activity	50%	75%
Budgeted overhead (₹)	30,00,000	40,00,000

What would be the budgeted overhead for 60% level of activity:

A. ₹ 32,00,0000

B. ₹ 34,00,000

C. ₹ 30,00,000

D. ₹ 36,00,000 **(2 Marks)**

5. Which of the following statements relating to Zero Based Budgeting (ZBB) is false:

   A. It is a method of budgeting whereby all activities are re-evaluated each time a budget is formulated.

   B. ZBB attempts to eliminate unnecessary expenditure being retained in budgets.

   C. It is probably the least time consuming and least costly approach to budgeting.

   D. It requires that budgets are built up from scratch. **(2 Marks)**

6. Based on the data below, what is the amount of the overhead under-/over-absorbed?

   Budgeted overhead – ₹ 5,25,000

   Budgeted machine hours- 17,500

   Actual machine hours- 17,040

   Actual overheads- ₹ 5,20,000

   A. 5,000 under-absorbed

   B. 8,800 under-absorbed

   C. 8,800 over-absorbed

   D. 5,000 over-absorbed **(2 Marks)**

7. A customer has been ordering 80,000 caps during the year. It is estimated that it costs ₹ 1 as inventory holding cost per cap per month and that the set up cost per run of cap manufacture is ₹ 3,500

   What is optimum run size of cap manufacture?

   A. 12 runs

   B. 10 runs

   C. 15 runs

   D. 7 runs **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. P Ltd. manufactures two products called ‘X’ and ‘Y’. Both products use a common raw material Z. The raw material Z is purchased @ ₹ 72 per kg from

the market. The company has decided to review inventory management policies for the forthcoming year.

The following forecast information has been extracted from departmental estimates for the year ended 31st March 2025 (the budget period):

	Product X	Product Y
Sales (units)	28,000	13,000
Finished goods stock increase by year-end	320	160
Post-production rejection rate (%)	4	6
Material Z usage (per completed unit, net of wastage)	5 kg	6 kg
Material Z wastage (%)	10	5

Additional information:

- Usage of raw material Z is expected to be at a constant rate over the period.
- Annual cost of holding one unit of raw material in stock is 11% of the material cost.
- The cost of placing an order is ₹ 15,600 per order.
- The management of P Ltd. has decided that there should not be more than 40 orders in a year for the raw material Z.

Required:

(a) (i) Prepare Production budget for Products X and Y (in units) for the year ended 31st March 2025.

(ii) Calculate the Economic Order Quantity for Material Z (in kgs).

(3+2=5 Marks)

(b) Prepare Purchases budget for Material Z (in kgs and value) for the year ended 31st March 2025. **(5 Marks)**

(c) If there is a sole supplier for the raw material Z in the market and the supplier do not sale more than 4,000 kg. of material Z at a time. Keeping the management purchase policy and production quantity mix into consideration, calculate the maximum number of units of Product X and Y that could be produced. **(4 Marks)**

2. (a) Chiku Transport Service is a Delhi based national goods transport service provider, owning four trucks for this purpose. The cost of running and maintaining these trucks are as follows:

Particulars	Amount
Diesel cost	₹ 19.20 per km.
Engine oil	₹ 4,200 for every 13,000 km.

Repair and maintenance	₹ 36,000 for every 10,000 km.
Driver's salary	₹ 24,000 per truck per month
Cleaner's salary	₹ 15,000 per truck per month
Supervision and other general expenses	₹ 14,000 per month
Cost of loading of goods	₹ 180 per Metric Ton (MT)

All four trucks were purchased for ₹ 30 lakhs with an estimated life of 7,20,000 km each.

During the next month, it is expecting 6 bookings, the details are as follows:

Sl. No.	Journey	Distance in km	Weight-Up (in MT)	Weight- Down (in MT)
1.	Delhi to Kochi	2,700	14	6
2.	Delhi to Guwahati	1,890	12	0
3.	Delhi to Vijayawada	1,840	15	0
4.	Delhi to Varanasi	815	10	0
5.	Delhi to Asansol	1,280	12	4
6.	Delhi to Chennai	2,185	10	8
	Total	10,710	73	18

Required

(i) Calculate the total absolute Ton-km for the vehicles**.** **(3 Marks)**

(ii) Calculate the cost per ton-km. **(6 Marks)**

(b) S & Sons, an unregistered supplier under GST, purchases material from V Ltd. which is a GST registered supplier. The following information is available for one lot of 5,000 units of material purchased:

Listed price of one lot	₹ 5,00,000
Trade discount	@ 10% on listed price
CGST and SGST (Credit Not available)	18% (9% CGST + 9% SGST)
Cash discount	@ 10%

(Will be given only if payment is made within 30 days.)

Toll Tax paid	₹ 1,800
Freight and Insurance	₹ 36,000
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 ₹ 26,000

Other Expenses @ 2% of total cost

5% 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 S & Sons. **(5 Marks)**

3. (a) What are the important ledgers to be maintained under non-integrated accounting system in the Cost Accounting? **(4 Marks)**

(b) The following particulars have been compiled in respect of three workers, which are under consideration of the management.

	I	II	III
Actual hours worked	380	100	540
Hourly rate of wages (in ₹)	40	50	60
Productions in units:			
- Product X	210	-	600
- Product Y	360	-	1350
- Product Z	460	250	-
Standard time allowed per unit of each product is:			
	X	**Y**	**Z**
Minutes	15	20	30

For the purpose of piece rate, each minute is valued at ₹ 1/-

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.)

(iii) Premium bonus basis where the worker received bonus based on Rowan scheme. **(10 Marks)**

4. (a) AB Ltd produces a single product V2 and sells it at a fixed price of ₹ 2,050 per unit. The production and sales data for first quarter of the year 2023-24 are as follows:

	April	May	June
Sales in units	4,200	4,500	5,200
Production in units	4,600	4,400	5,500

Actual/budget information for each month was as follows:

Direct materials	4 kilograms at ₹ 120 per kilogram
Direct labour	6 hours at ₹ 60 per hour
Variable production overheads	150% of direct labour
Fixed production overheads	₹ 5,00,000
Fixed selling overheads	₹ 95,000

There was no opening inventory at the start of the quarter. Fixed production overheads are budgeted at ₹ 60,00,000 per annum and are absorbed into products based on a budgeted normal output of 60,000 units per annum.

Required:

(i) Prepare a profit statement for each of the three months using absorption costing principles.

(ii) Prepare a profit statement for each of the three months using marginal costing principles.

(iii) Present a reconciliation of the profit or loss figures given in your answer to (i) and (ii). **(10 Marks)**

(b) PQ Ltd. sells bottles and currently is trying to find out the profitability of opening another store which will have the following expenses and revenues:

	Amount per piece (₹)
Selling Price	600
Variable costs:	
Material cost	410
Salesmen's commission	60
Total variable cost	470
Annual fixed expenses are:	**(₹)**
- Rent	6,00,000
- Office and administrative expenses	20,00,000
- Advertising	8,00,000
- Other fixed expenses	2,00,000

Calculate the annual break-even point in units and in value. Also determine the profit or loss if 35,000 units of bottles are sold. **(4 Marks)**

5. (a) SARA Ltd. has furnished the following standard cost data per' unit of production:

Material 15 kg @ ₹ 15 per kg.

Labour 6 hours @ ₹ 5 per hour

Variable overhead 6 hours @ ₹ 12 per hour.

Fixed overhead ₹ 4,50,000 per month (Based on a normal volume of 30,000 labour hours.)

The actual cost data for the month of August 2023 are as follows:

Material used 65,000 kg at a cost of ₹ 9,85,000.

Labour paid ₹ 1,40,000 for 31,500 hours worked.

Variable overheads ₹ 3,60,200

Fixed overheads ₹ 4,70,000

Actual production 4,800 units.

CALCULATE:

(i) Material Cost Variance.

(ii) Labour Cost Variance.

(iii) Fixed Overhead Cost Variance.

(iv) Variable Overhead Cost Variance. **(6 Marks)**

(b) The following budgeted information relates to Pinku Ltd. for the year 2024:

	Products		
	A	**B**	**C**
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
	Hours	**Hours**	**Hours**
Machine department (machine hours per unit)	3	4	5
Assembly department (direct labour hours per unit)	6	4	3

The estimated overhead expenses for the year 2024 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 hours

Assembly Department On the basis of labour hours

After a detailed study of the activities the following cost pools and their respective cost drivers are found:

Cost Pool	Amount (₹)	Cost Driver	Quantity
Machining services	64,40,000	Machine hours	9,20,000 hours
Assembly services	44,00,000	Direct labour hours	11,00,000 hours
Set-up costs	9,00,000	Machine set-ups	9,000 set-ups
Order processing	7,20,000	Customer orders	7,200 orders
Purchasing	4,00,000	Purchase orders	800 orders

As per an estimate the activities will be used by the three products:

	Products		
	A	B	C
Machine set-ups	4,500	3,000	1,500
Customer orders	2,200	2,400	2,600
Purchase orders	300	350	150

Prepare a product-wise profit statement using Activity-based method.

(8 Marks)

6. (a) EXPLAIN the treatment of over and under absorption of overheads in cost accounts. **(5 Marks)**

(b) "Technology has played a significant role in cost accounting enabling business to automate their process."

EXPLAIN the impact of Information Technology in Cost Accounting in the light of above statement. **(5 Marks)**

(c) As per the controllability, cost can be classified as controllable & uncontrollable costs. How will you DIFFERENTIATE them? **(4 Marks)**

OR

(d) How apportionment of joint costs upto the point of separation amongst the joint products using market value at the point of separation and net realizable value method is done? DISCUSS. **(4 Marks)**

MODEL TEST PAPER 2

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

1. A meeting of the heads of departments of the Arnav Ltd. has been called to review the operating performance of the company in the last financial year. The head of the production department appraised that during the last year the company could operate at 70% capacity level but in the coming financial year 95% capacity level can be achieved if an additional amount of ₹100 Crore on capex and working capital is incurred.

   The head of the finance department has presented that during the last financial year the company had a P/V ratio of 40%, margin of safety and the break-even were ₹50 crore and ₹200 crore respectively.

   To the reply to the proposal of increasing the production capacity level to 95%, the head of the finance department has informed that this could be achieved if the selling price and variable cost are reduced by 8% and 5% of sales respectively. Fixed cost will also increase by ₹20 crore due to increased depreciation on additional assets. The additional capital will be arranged at a cost of 15% p.a. from a bank.

   In the coming financial year, it has been aimed to achieve an additional profit of ₹10 crore over and above the last year's profit after adjusting the interest cost on the additional capital.

   The following points is required to be calculated on urgent basis to put the same in the meeting. You being an assistant to the head of finance, has been asked the followings:

   i. What will be the revised sales for the coming financial year?

      A. ₹ 322.22 Crore

B. ₹ 311.11 Crore

C. ₹ 300.00 Crore

D. ₹ 324.24 Crore

ii. What will be the revised break-even point for the coming financial year?

A. ₹ 222.22 Crore

B. ₹ 252.22 Crore

C. ₹ 244.44 Crore

D. ₹ 255.56 Crore

iii. What will be the revised margin of safety for the coming financial year?

A. ₹ 100 Crore

B. ₹ 58.89 Crore

C. ₹ 55.56 Crore

D. ₹ 66.66 Crore

iv. The profit of the last year and for the coming year are:

A. ₹ 50 Crore & ₹95 Crore respectively

B. ₹ 20 Crore & ₹ 65 Crore respectively

C. ₹ 20 Crore & ₹ 30 Crore respectively

D. ₹ 45 Crore & ₹ 66.66 Crore respectively

v. The total cost of the last year and for the coming year are:

A. ₹ 230 Crore & ₹292.22

B. ₹ 230 Crore & ₹275 Crore

C. ₹ 220 Crore & ₹282.22 Crore

D. ₹ 220 Crore & ₹292.22 Crore **(5 x 2 = 10 Marks)**

2. K Ltd. is a manufacturer of a single product A. 8,000 units of the product A has been produced in the month of March 2024. At the beginning of the year a total 1,20,000 units of the product-A has been planned for production. The cost department has provided the following estimates of overheads:

Fixed	₹ 12,00,000	Variable	₹ 6,00,000
Semi-Variable	₹ 1,80,000		

Semi-variable charges are considered to include 60 per cent expenses of fixed nature and 40 per cent of variable character.

The records of the production department shows that the company could have operated for 20 days but there was a festival holiday during the month.

The actual cost data for the month of March 2024 are as follows:

Fixed	₹ 1,19,000	Variable	₹ 48,000
Semi-Variable	₹ 19,200		

The cost department of the company is now preparing a cost variance report for managerial information and action. You being an accounts officer of the company are asked to calculate the following information for preparation of the variance report:

i. What is the amount of variable overhead cost variance for the month of March 2024:

A. ₹ 10,200 (A)

B. ₹ 10,400 (A)

C. ₹ 10,800 (A)

D. ₹ 10,880 (A)

ii. What is the amount of fixed overhead volume variance for the month of March 2024:

A. ₹ 9,000 (F)

B. ₹ 9,000 (A)

C. ₹ 21,800 (A)

D. ₹ 11,000 (A)

iii. What is the amount of fixed overhead expenditure variance for the month of March 2024:

A. ₹ 21,520 (A)

B. ₹ 21,500 (A)

C. ₹ 21,400 (A)

D. ₹ 21,480 (A)

iv. What is the amount of fixed overhead calendar variance for the month of March 2024:

A. ₹ 5,400 (A)

B. ₹ 5,450 (A)

C. ₹ 5,480 (A)

D. ₹ 5.420 (A)

v. What is the amount of fixed overhead cost variance for the month of March 2024:

A. ₹ 43,320 (A)

B. ₹ 43,300 (A)

C. ₹ 43,200 (A)

D. ₹ 43,380 (A) **(5 x 2 = 10 Marks)**

3. If the amount of wages under Halsey plan is ₹ 420, total time allowed is 8 hours and the guaranteed time rate is ₹ 60 per hour. What is the total time saved by the worker?

A. 2 hours

B. 3 hours

C. 6 hours

D. 3.5 hours **(2 Marks)**

4. From the following information, calculate the Total cost of Product A and B using the ABC analysis:

	Product A	**Product B**
Units	5,000	5,000
Number of purchase orders placed	100	220
Number of deliveries received	70	200
Ordering Cost	₹ 4,00,000	
Delivery Cost	₹ 1,35,000	

A. A = ₹ 47,500; B = ₹ 1,27,500

B. A = ₹ 2,67,500; B = ₹ 2,67,500

C. A = ₹ 1,60,00; B = ₹ 3,75,000

D. A = ₹ 1,47,500; B = ₹ 1,47,500 **(2 Marks)**

5. What would be Prime cost from below information?

Direct materials Purchased	:	₹ 75,000
Direct labour	:	₹ 45,000
Direct expenses	:	₹ 15,000
Manufacturing overheads	:	₹ 22,500
Direct materials consumed	:	₹ 67,500

A. ₹ 1,35,000

B. ₹ 1,27,500

C. ₹ 1,57,500

D. ₹ 1,50,000 **(2 Marks)**

6. A product passes through Process-I. Input raw material issued were 8,000 units. Normal loss anticipated was 10% of input with realisable value of ₹ 5 per unit. 7,600 units of output were produced and transferred to next process. If the total cost incurred under Process-I was ₹ 40,000, then amount of abnormal gain/(loss) is:

A. ₹ 2,000

B. (₹ 5,000)

C. (₹ 2,500)

D. ₹ 3,000 **(2 Marks)**

7. Find out the most appropriate unit cost from the following information of ZMD Transport Services Ltd. dealing in goods carriage:

Total cost = ₹ 5,25,000

Kms. Travelled = 8,75,000

Tonnes carries = 4,000

No. of Drivers = 25

No. of trucks = 20

Tonnes Km carried = 6,55,000

A. ₹ 0.6

B. ₹ 0.8

C. ₹ 21,000

D. ₹ 131.25 **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) The product of a manufacturing concern passes through two processes A and B and then to finished stock. The details of expenses incurred on the two processes during the year were as under:

	Process A (₹)	Process B (₹)
Materials	40,000	--
Labour	40,000	56,000
Overheads	16,000	40,000

On completion, the output of Process A is transferred to Process B at a price calculated to give a profit of 20% on the transfer price and the output of Process B is charged to finished stock at a profit of 25% on the transfer price. The finished stock department realized ₹ 4,00,000 for the finished goods received from Process B.

You are asked to SHOW process accounts and total profit, assuming that there was no opening or closing work-in-progress. **(5 Marks)**

(b) DSM Ltd manufactures speed boats which require propeller TP-M4. The following particulars are collected for the year 2023-24:

(i) Annual demand of TP-M4 12,000 units

(ii) Cost of placing an order ₹1,200 per order

(iii) Cost per unit of TP-M4 is ₹1,740/-

(iv) Carrying cost p.a. 12%

The company has been offered a quantity discount of 5 % on the purchase of TP-M4, provided the order size is 6,000 units at a time.

Required to:

(i) COMPUTE the economic order quantity (EOQ)

(ii) ADVISE whether the quantity discount offer can be accepted.

(5 Marks)

(c) A skilled worker in Shanu Ltd. is paid a guaranteed wage rate of ₹ 30 per hour. The standard time per unit for a particular product is 4 hours. Sam, 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.

WHAT could have been his total earnings and effective hourly rate, had he been put on Halsey Incentive Scheme (50%)? **(4 Marks)**

2. (a) The following information are available for the three machines of a manufacturing department of KBC Ltd.:

	Preliminary estimates of expenses			
	Total	(per annum)		
		Machines		
		P	Q	R
	(₹)	(₹)	(₹)	(₹)
Depreciation	20,000	7,500	7,500	5,000
Spare parts	10,000	4,000	4,000	2,000
Power	40,000			
Consumable stores	10,000	4,000	3,000	3,000
Insurance of machinery	8,000			
Indirect labour	20,000			
Building maintenance expenses	20,000			
Annual interest on capital outlay	60,000	25,000	25,000	10,000
Monthly charge for rent and rates	10,000			
Salary of foreman (per month)	20,000			
Salary of Attendant (per month)	5,000			

(The foreman and the attendant control all the three machines and spend equal time on them.)

The following additional information is also available:

	Machines		
	P	**Q**	**R**
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 14 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 85% 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 'Q' & 'R' only.
- 20% general increase in wages rates.
- An 10% decrease in the consumption of consumable stores.

(10 Marks)

(b) Happi Ltd. Produces product RP in batches, management of the Happi Ltd. wants to know the number of batches of product RP to be produced where the cost incurred on batch setup and carrying cost of production is at optimum level. **(4 Marks)**

3. (a) Aman International School has a total of 180 students consisting of 6 sections with 30 students per section. The school plans for a picnic around the city during the week-end to places such as Prayag zoo, the Capi Park, Azad planetarium etc. A private transport operator has come forward to lease out the buses for taking the students. Each bus will have a maximum capacity of 50 (excluding 2 seats reserved for the teachers accompanying the students). The school will employ two teachers for each bus, paying them an allowance of ₹ 500 per teacher. It will also lease out the required number of buses. The following are the other cost estimates:

	Cost per student (₹)
Breakfast	50
Lunch	100
Tea	10
Entrance fee at zoo	20

Rent ₹ 6500 per bus.

Special permit fee ₹ 500 per bus.

Block entrance fee at the planetarium ₹ 2500.

Prizes to students for games ₹ 500.

No cost are incurred in respect of the accompanying teachers (except the allowance of ₹ 500 per teacher).

You are required to PREPARE:

(a) A flexible budget estimating the total cost for the levels of 60, 90,120,150 and 180 students. Each item of cost is to be indicated separately.

(b) COMPARE the average cost per student at these levels.

(c) WHAT will be your conclusions regarding the break-been level of student if the school proposes to collect ₹ 400 per student?

(10 Marks)

(b) Anju 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 hours	60,000 kilowatt hours	60,00,000
Quality Inspections	Number of Inspections	10,000 Inspections	90,00,000

The company makes three products A, B and C. For the year ended March 31, 20XX, the following consumption of cost drivers was reported:

Product	Kilowatt hours	Quality Inspections
A	10,000	3,500
B	20,000	2,500
C	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.

(4 Marks)

4. (a) The following are the budgeted details are available from the records of a manufacturing company SP Ltd.:

	₹	₹
Direct Materials		2,13,000
Direct Wages:		
Machine Shop (12,000 hours)	63,000	
Assembly Shop (10,000 hours)	48,000	1,11,000

Works Overhead:		
Machine Shop	88,200	
Assembly Shop	51,800	1,40,000
Administrative Overhead		92,800
Selling Overhead		81,000
Distribution Overhead		62,100

You are required to:

(a) PREPARE a Schedule of Overhead Rates from the figures available stating the basis of overhead recovery rates used under the given circumstances.

(b) WORK OUT a Cost Estimate for the following job based on overhead calculated on above basis.

Direct Material:	25 kg @ ₹ 17.20/kg
	15 kg @ ₹ 21.00/kg
Direct labour: (On the basis of hourly rate	Machine shop 30 hours
For machine shop and assembly shop)	Assembly shop 42 hours

(8 Marks)

(b) HOW is slow moving and non-moving item of stores detected and WHAT steps are necessary to reduce such stocks? **(4 Marks)**

(c) WHEN is the reconciliation statement of Cost and Financial accounts not required? **(2 Marks)**

5. (a) Following information relate to a manufacturing concern for the year ended 31st March, 2023:

	(₹)
Raw Material (opening)	2,28,000
Raw Material (closing)	3,05,000
Purchases of Raw Material	43,50,000
Freight Inwards	1,20,000
Direct wages paid	12,56,000
Direct wages-outstanding at the end of the year	1,50,000
Factory Overheads	20% of prime cost
Work-in-progress (opening)	1,92,500
Work-in-progress (closing)	1,40,700
Administrative Overheads (related to production)	1,73,000
Distribution Expenses	₹ 16 per unit

Finished Stock (opening)- 1,320 Units	6,08,500
Sale of scrap of material	7,000

The firm produced 14,350 units of output during the year. The stock of finished goods at the end of the year is valued at cost of production. The firm sold 14,903 units at a price of ₹579 per unit during the year.

PREPARE cost sheet of the firm. **(8 Marks)**

(b) A hotel having 20 single rooms is having 80% occupancy in normal season (8 months) and 50% in off- season (4 months) in a year (take 30 days month).

Annual fixed expenses	Amount in ₹
Salary of the staff (excluding room attendant)	15,00,000
Repair & maintenance	12,60,000
Depreciation on building & furniture	12,40,000
Other fixed expenses like dusting, sweeping etc.	13,25,000
	53,25,000
Variable expenses (per guest per day)	
Linen, laundry & security support	80.00
Electricity & other facilities	120.00
Misc. expenses like attendant etc.	300.00
	500.00

Management wishes to make a margin of 25% of total cost.

Required

(a) CALCULATE the Tariff per room per day.

(b) CALCULATE the break-even occupancy in normal season (in percentage also) assuming there is 50% occupancy in off-season.

(6 Marks)

6. (a) Why is it necessary to reconcile the Profits between the Cost Accounts and Financial Accounts? **(5 Marks)**

(b) DISCUSS the essential features of a good cost accounting system?

(5 Marks)

(c) ENUMERATE the remedial steps to be taken to minimize the labour turnover **(4 Marks)**

OR

(c) DISCUSS basic assumptions of Cost Volume Profit analysis. **(4 Marks)**

MODEL TEST PAPER 3

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

1. The board of the J Ltd. has been appraised by the General Manager (HR) that the employee attrition rate in the company has increased. The following facts has been presented by the GM(HR):

   (1) Training period of the new recruits is 50,000 hours. During this period their productivity is 60% of the experienced workers. Time required by an experienced worker is 10 hours per unit.

   (2) 20% of the output during training period was defective. Cost of rectification of a defective unit was ₹ 25.

   (3) Potential productive hours lost due to delay in recruitment were 1,00,000 hours.

   (4) Selling price per unit is ₹ 180 and P/V ratio is 20%.

   (5) Settlement cost of the workers leaving the organization was ₹ 1,83,480.

   (6) Recruitment cost was ₹ 1,56,340

   (7) Training cost was ₹ 1,13,180

   You being an associate finance to GM(HR), has been asked the following questions:

   (i) How much quantity of output is lost due to labour turnover?

   (a) 10,000 units

   (b) 8,000 units

   (c) 12,000 units

   (d) 12,600 units

(ii) How much loss in the form of contribution, the company incurred due to labour turnover?

(a) ₹ 4,32,000

(b) ₹ 4,20,000

(c) ₹ 4,36,000

(d) ₹ 4,28,000

(iii) What is the cost repairing of defective units?

(a) ₹ 75,000

(b) ₹ 15,000

(c) ₹ 50,000

(d) ₹ 25,000

(iv) Calculate the profit lost by the company due to increased labour turnover.

(a) ₹ 7,50,000

(b) ₹ 15,00,000

(c) ₹ 5,00,000

(d) ₹ 9,00,000

(v) How much quantity of output is lost due to inexperience of the new worker?

(a) 1,000 units

(b) 2,600 units

(c) 2,000 units

(d) 12,600 units **(5 x 2 = 10 Marks)**

2. P Ltd. has gathered cost information from ledgers and other sources for the year ended 31st December 2023. The information are tabulated below:

Sl. No.		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 & 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 1st January, 2023:		
	- 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 31st December, 2023:		
	- 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/-

The board meeting is scheduled to be held in next week and you being an associate to the chief cost controller of the company, has been asked to be prepared with the following figures:

(i) How much is the prime cost of the company?

(a) ₹ 5,10,80,600

(b) ₹ 5,44,40,600

(c) ₹ 5,36,00,600

(d) ₹ 5,19,20,600

(ii) How much is the cost of production?

(a) ₹ 5,49,09,600

(b) ₹ 5,50,59,600

(c) ₹ 5,48,73,600

(d) ₹ 5,50,59,000

(iii) What is the value of cost of goods sold?

(a) ₹ 5,49,09,600

(b) ₹ 5,50,59,600

(c) ₹ 5,48,73,600

(d) ₹ 5,50,59,000

(iv) How much is the factory cost?

(a) ₹ 5,49,09,600

(b) ₹ 5,50,59,600

(c) ₹ 5,48,73,600

(d) ₹ 5,50,59,000

(v) What is the value of cost of sales?

(a) ₹ 5,66,49,600

(b) ₹ 5,50,59,600

(c) ₹ 5,48,73,600

(d) ₹ 5,50,59,000 **(5 x 2 = 10 Marks)**

3. What is 'Variable Overhead Efficiency Variance' based on information given below:

Budgeted production	12,000 units
Budgeted variable overhead	₹ 2,40,000
Standard time for one unit of output	2 hours
Actual production	11,800 units
Actual overhead incurred	₹ 2,44,000
Actual hours worked	23,200 hours

(a) ₹ 4000 (A)

(b) ₹ 6000 (A)

(c) ₹ 2000 (F)

(d) ₹ 4000 (F) **(2 Marks)**

4. A company sells two products, A and B. The sales mix is 4 units of A and 3 units of B. The contribution margins per unit are ₹ 140 for A and ₹ 70 for B. Fixed costs are ₹ 6,16,000 per month. What is Break Even Point for Product B?

(a) 5,600 units

(b) 2,400 units

(c) 3,200 units

(d) 800 units **(2 Marks)**

5. Total passenger km run by APL logistic Ltd. was ₹ 43,80,480 for the year between Delhi and Manesar. The bus made 3 round trips per day. Seating capacity of the bus was 52 passengers and average daily occupancy was 75% and the bus runs on an average 26 days in a month. Calculate the distance between Delhi and Manesar.

(a) 55 km

(b) 720 km

(c) 65 km

(d) 60 km **(2 Marks)**

6.

Purchase price	₹ 10,00,000
Custom duty	₹ 2,00,000
GST	@12% on Purchase price
(input credit available)	
Octroi	₹ 5,000
Carriage inward	₹ 12,000
Demurrage charges	₹ 16,100
Commission on purchase	₹ 10,000
Stock of Raw Material:	
Opening	₹ 1,00,000
Closing	₹ 2,00,000

Raw material consumed will be:

(a) ₹ 11,27,000

(b) ₹ 11,43,100

(c) ₹ 12,63,100

(d) ₹ 12,58,100 **(2 Marks)**

7. In case of joint products, the main objective of accounting of the cost is to apportion the joint costs incurred up to the split off point. For cost apportionment one company has chosen Physical Quantity Method. Three joint products 'A', 'B' and 'C' are produced in the same process. Up to the point of split off the total production of A, B and C is 60,000 kg, out of which 'A' produces 30,000 kg and joint costs are ₹ 3,60,000. Joint costs allocated to product A is -

(a) ₹ 1,20,000

(b) ₹ 60,000

(c) ₹ 1,80,000

(d) ₹ 2,00,000 **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) X Ltd. has entered into an agreement with Y Ltd. for supplying 1,50,000 empty bottles every year. X Ltd. estimates machine set up cost of ₹ 520 for per set up and carrying cost ₹ 0.05 per empty bottle per month.

(i) DETERMINE the optimum run size for empty bottle manufacture?

(ii) WHAT would be the interval between two consecutive optimum runs?

(iii) FIND out the minimum inventory cost per annum. **(5 Marks)**

(b) CALCULATE a suggested fare per passenger-km from the following information for a Mini Bus:

(i) Length of route: 30 km

(ii) Purchase price ₹ 4,00,000

(iii) Part of above cost met by loan, annual interest of which is ₹ 10,000 p.a.

(iv) Other annual charges: Insurance ₹ 15,000, Garage rent ₹ 9,000, Road tax ₹ 3,000, Repairs & maintenance ₹ 15,000, Administrative charges ₹ 5,000.

(v) Running Expenses: Driver & Conductor ₹ 5,000 p.m., Repairs/Replacement of tyre-tube ₹ 3,600 p.a., Diesel and oil cost per km ₹ 5.

(vi) Effective life of vehicle is estimated at 5 years at the end of which it will have a scrap value of ₹ 10,000.

(vii) Mini Bus has 20 seats and is planned to make Six no. two way trips for 25 days/p.m.

(viii) Provide profit @ 20% of total revenue. **(5 Marks)**

(c) 40 units of Part-B is required everyday for producing a product. A cost of ₹ 100 is incurred for placing an order and the inventory carrying cost is ₹ 0.06 per unit per day and the lead period is 26 days.

You are required to COMPUTE

(i) Economic Order Quantity

(ii) Re-order level **(4 Marks)**

2. (a) ABC Ltd has calculated a predetermined overhead rate of ₹ 22 per machine hour for its Testing 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.

Testing department

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:

(a) CALCULATE the variable overhead absorption rate per machine hour.

(b) CALCULATE the estimated total fixed overheads.

(c) CALCULATE the budgeted level of activity in machine hours.

(d) CALCULATE the amount of under/over –recovery of overheads if the actual machine hours were 15,850 and actual overheads were ₹ 3,55,050.

(e) STATE the arguments for and against using departmental absorption rates as opposed to a single or blanket factory wide rate.

(10 Marks)

(b) DISCUSS the essentials of good Cost Accounting System. **(4 Marks)**

3. (a) Cost Ledger of Beta Ltd. shows the following balances as on 31st March.

	Dr.	Cr.
	₹	₹
Stores ledger control A/c	6,02,870	—
Work-in-progress ledger control A/c	2,44,730	—
Finished stock ledger control A/c	5,03,890	—
Manufacturing overhead control A/c	—	21,050
Cost ledger control A/c	—	13,30,440
	13,51,490	13,51,490

During the next three months, the transactions that took place is as follows:

	₹
Finished product (at cost)	4,21,670
Manufacturing overhead incurred	1,83,020
Raw materials purchased	2,46,000
Factory wages	1,01,060
Indirect labour	43,330
Cost of sales	3,71,780

Materials issued to production	2,54,630
Sales returned at cost	10,760
Materials returned to suppliers	5,800
Manufacturing overhead charged to production	1,54,400

You are required to WRITE UP the accounts and schedule the balances stating what each balance represents. **(7 Marks)**

(b) Outlook Ltd. produces and sells a single product. Sales budget for calendar year 2023 by quarters is as under:

Quarter	**I**	**II**	**III**	**IV**
No of units to be sold	12,000	15,000	16,500	18,000

The year is expected to open with an inventory of 4,000 units of finished products and close with an inventory of 6,500 units.

Production is customarily scheduled to provide for two-thirds of the current quarter's sales demand plus one-third of the following quarter's demand. Thus production anticipates sales volume by about one month.

The standard cost details for one unit of the product is as follows:

Direct materials 10 kgs @ 50 paise per kg.

Direct labour 1 hour 30 minutes @ ₹ 4 per hour

Variable overhead 1 hour 30 minutes @ ₹ 1 per hour

Fixed overheads 1 hour 30 minutes @₹ 2 per hour based on budgeted production volume of 90,000 direct labour hours for the year.

(i) PREPARE a Production budget for 2023, by quarters, showing the number of units to be produced and the total costs of direct material, direct labour, variable overhead and fixed overheads.

(ii) If the budgeted selling price per unit is ₹ 17, WHAT would be the budgeted profit for the year as a whole? **(7 Marks)**

4. (a) R Ltd has set standards for producing a product called 'X', which are as follows:

Direct Materials

3 units of A @ ₹ 3.5 per unit	₹ 10.50
6 units of B @ ₹ 5.00 per unit	₹ 30.00
4 units of C @ ₹ 4.25 per unit	₹ 17.00

Direct Labours

	Skilled Workers	Semi-Skilled workers	Un-skilled workers
Standard no. of workers	26	10	8
Standard wage rate per hour (₹)	5	4	2

The actual data are as follows:

During the 45 hours working week, the gang produced 1900 standard labour hours of work.

Company has produced 6000 units of the product during the last week and the materials and labours are as follows:

17,200 units of A @ ₹ 4.00 per unit

36,500 units of B @ ₹ 4.50 per unit

23,800 units of C @ ₹ 4.30 per unit

	Skilled Workers	Semi-Skilled workers	Un-skilled workers
Actual no. of workers	24	12	6
Actual wage rate per hour (₹)	6	4.25	3.25

You are required to CALCULATE:

(a) Material price variance

(b) Material usage variance

(c) Labour rate variance

(d) Labour mix variance

(e) Labour yield variance **(10 Marks)**

(b) The ratio of variable cost to sales is 80%. The break-even point occurs at 65% of the capacity sales. FIND the capacity sales when fixed costs are ₹ 65,000. Also COMPUTE profit at 95% of the capacity sales.

(4 Marks)

5. (a) Product-K passes through three processes. The output of each process is treated as the raw material of the next process to which it is transferred and output of the third process is transferred to finished stock.

	1st Process ₹	2nd Process ₹	3rd Process ₹
Material issued	45,000	23,500	11,200
Labour	6,100	4,280	1,200
Manufacturing overhead	9,800	9,800	16,100

10,000 units have been issued to the 1st process and after processing, the output of each process is as under :

	Output	Normal Loss
Process No. 1	9,600 units	3%
Process No. 2	9,300 units	6%
Process No. 3	8,000 units	7%

No stock of materials or of work-in-progress was left at the end. CALCULATE the cost of the finished articles. **(10 Marks)**

(b) HOW normal and abnormal loss of material arising during storage treated in Cost Accounts? **(4 Marks)**

6. (a) EXPLAIN the difference between Cost Accounting and Management Accounting **(5 Marks)**

(b) DISCUSS basic assumptions of Cost Volume Profit analysis. **(5 Marks)**

(c) DISTINGUISH between Fixed and flexible budget. **(4 Marks)**

OR

(d) DESCRIBE job Costing and Batch Costing giving example of industries where these are used. **(4 Marks)**

MODEL TEST PAPER 4

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

Tropic Pvt Ltd was engaged in the business of manufacturing Product P. The product P required 2 units of Material R. The company intends to sell 24,000 units of Product P and does not wish to retain any closing stock. However the opening stock of Product P is 4,000 units. Raw Material R has to be procured after considering the opening stock of R amounting to 10,000 units. The technical team further confirms that the yield in the course of manufacture of Product P is 80% of the input.

The company presently procures its annual requirement of materials on a quarterly basis from its regular supplier enjoying a discount of 2.5% on the invoice price of the material of ₹ 20 per unit. Every time the company places orders for Material R, it incurs ₹ 125 for each of the order placed. The company also has taken a rented warehouse for storing material R and the annual cost of storage is ₹ 10 per unit. The company appointed Mr. T a Chartered Accountant to review the cost of inventory and provide measures of improvement of cost. After reviewing the material purchase and consumption pattern, Mr. T suggested that the implementation of Wilson's EOQ would be beneficial to the company. He emphasized that the change in the quantity ordered would result in reduction of inventory carrying costs.

Mr. T further reviewed the labour costing and identified that the employees were paid overtime wages to ensure timely completion of projects. Overtime wages comprised of daily wage and 100% of daily wages as overtime premium. Based on the cost record it was understood that every month had 180 hours of regular

working hours which was remunerated at ₹ 200 per hour and Overtime of 20 hours which was remunerated at ₹ 400 per hour. Mr. T suggested that the above time taken may be considered as standard and a scheme of Incentive be introduced to reduce overtime cost. He further indicated that Rowan scheme of incentive be used to measure performance and the improved productivity per hour would be 125 units per hour.

In this regard, address the following queries in line with the suggestions provided by Mr. T to Tropic Pvt Ltd.

1. The annual requirement of Material R to meet the target sales of 24,000 units of Product P is:
   (a) 48,000 units
   (b) 60,000 units
   (c) 40,000 units
   (d) 50,000 units
2. The ordering quantity as per the current inventory policy and the proposed Wilson's Economic order quantity of Material R are:
   (a) Order Quatity as per the current inventory policy – 10,000 units & Economic Order Quantity – 1,000 units
   (b) Order Quantity as per the current inventory policy – 15,000 units & Economic Order Quantity – 1,225 units
   (c) Order Quantity as per the current inventory policy – 12,000 units & Economic Order Quantity – 1,095 units
   (d) Order Quantity as per the current inventory policy – 12,500 units & Economic Order Quantity – 1,118 units
3. The net savings to inventory cost on migration from the current inventory policy to the Wilson's Economic Order Quantity policy would be:
   (a) Savings from EOQ as compared to current discount policy – ₹ 26,820
   (b) Savings from EOQ as compared to current discount policy – ₹ 20,500
   (c) Savings from EOQ as compared to current discount policy – ₹ 33,253
   (d) Savings from EOQ as compared to current discount policy – ₹ 25,546
4. Incentive payable under the Rowan Incentive scheme amounts to:
   (a) ₹ 7,500
   (b) ₹ 6,400

(c) ₹ 6,000

(d) ₹ 8,000

5. The savings in labour cost achieved by implementation of incentive scheme over the overtime payments amounts to:

(a) ₹ 9,600

(b) ₹ 5,600

(c) ₹ 8,000

(d) ₹ 3,200 **(5 x 2 = 10 Marks)**

XYZ Manufacturing Pvt. Ltd. is a prominent company in the electric appliances industry, known for producing a diverse range of high-quality products. The company has built a reputation for reliability and innovation in the manufacturing of household appliances, including fans, mixers, and heaters. XYZ Manufacturing Pvt. Ltd. is dedicated to delivering products that meet the needs of its customers while adhering to the highest standards of quality and performance.

The company operates a state-of-the-art factory that is fully equipped with advanced machinery and technology to ensure efficient and consistent production. The factory operates 25 days a month, running multiple shifts to meet the growing demand for its products. The company have spare capacity to additional orders. Each product type—fans, mixers, and heaters—undergoes a meticulous manufacturing process that includes assembly, quality testing, and packaging.

Cost Category	**Amount (₹)**
Fixed Costs (per month)	
Factory Rent	₹ 3,00,000
Depreciation	₹ 2,00,000
Administrative Expenses	₹ 1,00,000
Salaries	₹ 4,00,000
Total Fixed Costs	₹ 10,00,000
Number of units produced per month	10,000 units
(Note: Last month there was an additional special order of 2000 units which resulted in higher production)	
Selling price per unit	₹ 1,500

Additional Info: Raw Materials include Copper, Plastic, and Other Materials. The per unit cost of Copper is ₹ 80 more than the cost of Plastic, while the cost of Other Materials is twice that of Plastic. And the total Raw Material Cost per unit is ₹ 210 more than the combined cost of Copper & Plastic.

The Labour Hour Rate is ₹ 100 per hour. The total labour hours used in the last month were 36,000 Hours. The Utilities Cost per unit is ₹ 100, and the Packaging

Cost per unit is ₹ 50. Being a finance manager of the company, you are required to answer the following:

6. Calculate the contribution margin per unit.
   (a) ₹ 550
   (b) ₹ 600
   (c) ₹ 650
   (d) ₹ 700
7. Determine the break-even point in sales revenue.
   (a) ₹ 31,28,593
   (b) ₹ 25,85,153
   (c) ₹ 27,27,025
   (d) ₹ 27,05,983
8. If the company wants to achieve a target profit of ₹ 5,00,000, what should be the sales volume (in units)?
   (a) 2,000 units
   (b) 2,727 units
   (c) 2,750 units
   (d) 3,000 units
9. What would be the impact on the break-even point if the variable cost per unit increases by 10%?
   (a) 2,178 units
   (b) 2,198 units
   (c) 2,248 units
   (d) 2,258 units
10. Calculate the margin of safety in percentage if the company sells 4,000 units if the variable cost per unit increases by 10%
   (a) 44.85%
   (b) 42.55%
   (c) 45.05%
   (d) 45.75% **(5 x 2 = 10 Marks)**
11. A FMCG company has an annual demand of 50,000 units for its specific product whose setting up cost per batch is ₹ 10,000 and carrying cost per unit per month is ₹ 1. What is the Economic Batch Quantity?
   (a) 7,071 units

(b) 10,000 units

(c) 12,641 units

(d) 9,129 units **(2 Marks)**

12. A furniture company uses premium wood for sofa. Standard quantity of premium wood per sofa is 5 sq. ft. Standard price per sq. ft. of premium wood is ₹ 10. Actual production of sofa is 1,000. Premium wood actually used is 5,300 sq. ft. Actual purchase price of premium wood per sq. ft. is ₹ 10. What is material cost variance?

(a) ₹ 3,000 (A)

(b) ₹ 4,300 (A)

(c) ₹ 7,300 (A)

(d) ₹ 5,300 (F) **(2 Marks)**

13. One of Pintu Company's cost pools is parts administration. The budgeted overhead cost for that cost pool was ₹ 4,00,000 and the expected activity was 4,000 part types. The actual overhead cost for the cost pool was ₹ 4,20,000 at an actual activity of 5,000 part types. The activity rate for that cost pool was:

(a) ₹ 80 per part type

(b) ₹ 100 per part type

(c) ₹ 105 per part type

(d) ₹ 84 per part type **(2 Marks)**

14. A truck carrying 10 tons of goods over 200 kilometres per day for 26 days in a month. The ton kms applicable is -

(a) 52,000

(b) 20,000

(c) 5200

(d) 260 **(2 Marks)**

15. Standard hours required for doing a work is 100 hours and budgeted hours is 120 hrs while the same work is actually completed by workers in 110 hrs. You are required to calculate the activity ratio:

(a) 109.09%

(b) 83.33%

(c) 90.90%

(d) 110% **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) From the following data of Meta Ltd., CALCULATE Cost of production:

		Amount (₹)
(i)	Repair & maintenance paid for plant & machinery	9,80,500
(ii)	Insurance premium paid for inventories	26,000
(iii)	Insurance premium paid for plant & machinery	96,000
(iv)	Raw materials purchased	64,00,000
(v)	Opening stock of raw materials	2,88,000
(vi)	Closing stock of raw materials	4,46,000
(vii)	Wages paid	23,20,000
(viii)	Value of opening Work-in-process	4,06,000
(ix)	Value of closing Work-in-process	6,02,100
(x)	Quality control cost for the products in manufacturing process	86,000
(xi)	Research & development cost for improvement in production process	92,600
(xii)	Administrative cost for:	
	- Factory & production	9,00,000
	- Others	11,60,000
(xiii)	Amount realised by selling scrap generated during the manufacturing process	9,200
(xiv)	Packing cost necessary to preserve the goods for further processing	10,200
(xv)	Salary paid to Director (Technical)	8,90,000
(xvi)	Expenses paid for pollution control and engineering & maintenance	22,000

(5 Marks)

(b) A manufacturing company has disclosed net loss of ₹ 48,700 as per their cost accounting records for the year ended 31st March, 2024. However their financial accounting records disclosed net profit of ₹ 30,400 for the same period. A scrutiny of data of both the sets of books of accounts revealed the following informations:

		₹
(i)	Factory overheads under absorbed	30,500
(ii)	Administrative overheads over absorbed	65,000

(iii)		Depreciation charged in financial accounts	2,25,000
(iv)		Depreciation charged in cost accounts	2,70,000
(v)		Income-tax provision	52,400
(vi)		Transfer fee (credited in financial accounts)	10,200
(vii)		Obsolescence loss charged in financial accounts	20,700
(viii)		Notional rent of own premises charged in cost accounts	49,000
(ix)		Value of opening stock:	
	(a)	in cost accounts	1,38,000
	(b)	in financial accounts	1,15,000
(x)		Value of closing stock:	
	(a)	in cost accounts	1,22,000
	(b)	in financial accounts	1,12,500

PREPARE a Memorandum Reconciliation Account by taking costing loss as base. **(5 Marks)**

(c) 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 hours. The standard time to finish the job is 40 hours.

The hourly wage rate is same for both the workers. In 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 ₹ 2,200 irrespective of the workman engaged.

FIND out the hourly wage rate and cost of raw materials input. Also SHOW cost against each element of cost included in factory cost.

(4 Marks)

2. (a) PQR Company Ltd. provides the following information relating to Process-P:

(i) Opening Work-in-progress - NIL

(ii) Units Introduced - 45,000 units @ ₹ 10 per unit

(iii) Expenses debited to the process:

Direct material	₹ 65,500
Labour	₹ 90,800
Overhead	₹ 1,80,700

(iv) Normal loss in the process - 2% of Input

(v) Work-in progress - 1800 units

Degree of completion

Materials - 100%

Labour - 50%

Overhead - 40%

(vi) Finished output - 42,000 units

(vii) Degree of completion of abnormal loss:

Materials - 100%

Labour - 80%

Overhead - 60%

(viii) Units scrapped as normal loss were sold at ₹ 5 per unit.

(ix) All the units of abnormal loss were sold at ₹ 2 per unit.

You are required to PREPARE:

- Statement of equivalent production.
- Statement showing the cost of finished goods, abnormal loss and closing balance of work-in-progress.
- Process-P account and abnormal loss account. **(10 Marks)**

(b) EXPLAIN the treatment of following items in cost sheet.

(i) Credit for Recoveries

(ii) Packing Cost (primary)

(iii) Joint Products and By-Products

(iv) Quality Control Cost **(4 Marks)**

3. (a) A company manufactures one main product (MN) and two by-products AB and PQ. For the month of January 2024, following details are available:

Total Cost upto separation Point ₹ 2,12,400

	MN	AB	PQ
Cost after separation	-	₹ 35,000	₹ 24,000
No. of units produced	4,000	1,800	3,000
Selling price per unit	₹ 100	₹ 40	₹ 30
Estimated net profit as percentage to sales value	-	20%	30%
Estimated selling expenses as percentage to sales value	30%	15%	15%

There are no beginning or closing inventories.

PREPARE statement showing:

(i) Allocation of joint cost; and

(ii) Product-wise and overall profitability of the company for January 2024. **(6 Marks)**

(b) A mini-bus, having a capacity of 32 passengers, operates between two places - 'A' and 'B'. The distance between the place 'A' and place 'B' is 30 km. The bus makes 10 round trips in a day for 25 days in a month. On an average, the occupancy ratio is 70% and is expected throughout the year.

The details of other expenses are as under:

	Amount (₹)
Insurance	15,600 Per annum
Garage Rent	2,400 Per quarter
Road Tax	5,000 Per annum
Repairs	4,800 Per quarter
Salary of operating staff	7,200 Per month
Tyres and Tubes	3,600 Per quarter
Diesel: (one litre is consumed for every 5 km)	13 Per litre
Oil and Sundries	22 Per 100 km run
Depreciation	68,000 Per annum

Passenger tax @ 22% on total taking is to be levied and bus operator requires a profit of 25% on total taking.

PREPARE operating cost statement on the annual basis and find out the cost per passenger kilometer and one way fare per passenger.

(8 Marks)

4. (a) 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 2023) was ₹ 10,000. Its estimated life is 10 years, the estimated scrap value at the end of its life is ₹ 1,000, 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 9 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 ₹ 20 each time.

(iv) The estimated cost of maintenance per year is ₹ 1,800.

(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 ₹ 120.

(vi) Departmental and general works overhead allocated to this machine for the current year amount to ₹ 3,000.

You are required to CALCULATE the machine hour rate of operating the machine. **(6 Marks)**

(b) Anju Limited produces a product 'Pect' which is sold in a 10 Kg. packet. The standard cost card per packet of 'Pect' are as follows:

	₹
Direct materials 10 kg @ ₹ 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 output for the third quarter of a year was 10,000 Kg. Actual output is 9,000 Kg.

Actual cost for this quarter are as follows :

	₹
Direct Materials 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 **(8 Marks)**

5. (a) Bicon 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 kgs.
Material-Y	500 kgs.

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. **(7 Marks)**

(b) Icecold a FMCG Company manufactures and sells three flavors of ice cream:

Dark chocolate, Chocolate, and Butterscotch. The batch size for the ice cream is limited to 1,000 ice cream based on the size of the fridge and ice cream molds owned by the company. Based on budgetary projections, the information listed below is available:

	Dark chocolate	**Chocolate**	**Butterscotch**
Projected sales in units	500,000	800,000	600,000
PER UNIT data:			
Selling price	₹ 80	₹ 75	₹ 60
Direct materials	₹ 20	₹ 15	₹ 14
Direct labor	₹ 4	₹ 2	₹ 2
Hours per 1000-unit batch:			
Direct labor hours	20	10	10
Fridge hours	1	1	1
Packaging hours	0.5	0.5	0.5

Total overhead costs and activity levels for the year are estimated as follows:

Activity	**Overhead costs**	**Activity levels**
Direct labor		2,400 hours
Fridge	₹ 2,10,00,000	1,900 fridge hours
Packaging	₹ 1,50,00,000	950 packaging hours
	₹ 3,60,00,000	

Required:

a. With the help of ABC system, for the Chocolate ice cream:

1. Compute the activity-cost-driver rate

2. Compute the estimated overhead costs per thousand ice cream.

3. Compute the estimated operating profit per thousand ice cream.

b. With the help of traditional system (with direct labor hours as the overhead allocation base), for the Chocolate ice cream, compute the estimated operating profit per thousand ice cream. **(7 Marks)**

6. (a) EXPLAIN the types of responsibility centres. **(5 Marks)**

(b) EXPLAIN the efficiency rating procedures of the employees. **(5 Marks)**

(c) WHAT are the essential pre-requisites for integrated accounts? **(4 Marks)**

OR

(d) WHAT are the principles of estimation of costs and benefits? **(4 Marks)**

MODEL TEST PAPER 5

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

Mr. Vikas, a toy importer has understood the importance of manufacturing in India. He is backed up by the new govt. policies that motivate him to manufacture in India. As per the custom department any import made for the manufacturing under "Made in India", custom duty will be refunded upto 80%. Vikas decided not to import toy from China anymore, instead import raw material from Srilanka, for the manufacturing of toys in India. Under an agreement of Govt. Of India with Srilankan Govt., any impo8rt from Srilanka will receive tax benefits.

Vikas ordered material Xendga & material Zenga from Srilanka. Details are given below:-

	Srilankan Rupees (SLR)
Material Xendga (12,000 units * 125 SLR)	15,00,000
Material Zenga (8,000 units * 225 SLR)	18,00,000
Factory cost	33,00,000
Add: Containers cost	2,00,000
Add: Freight upto loading shipment on ship (paid by exporter)	50,000
F.O.B.	35,50,000

- Ocean Freight is $ 2,000
- Insurance is $ 1,500

When shipment reached India, it was unloaded at Chennai port. Vikas requested to put the goods in custom port's warehouse. Vikas due to cash crunch was not in a position to pay custom duty and therefore did not file the bill of exchange (B.O.E.). Custom authorities charged a penalty of INR 15,000.

Finally, after a month Vikas filled B.O.E. and paid custom duty of 20% on CIF value of the shipment. IGST was also applicable @ 18% on the combined value of CIF & custom duty paid.

He spent further a sum of INR 12,500 to bring the imported goods to his factory. An inspection was done on the goods and it was found that 5% of the goods were broken. This came to management as a surprise because generally such rate of defects on imports is 8%.

Additional Information:

- Exchange rates:
  1) 1 INR = 0.25 SLR
  2) 1 USD = 75 INR
- IGST credits are available.
- Containers were refunded at INR 38,000.
- Indian and Srilankan brokers were paid commission by Vikas on factory cost. Indian broker charged 6% whereas Srilankan broker charged 12%.
- CIF (cost, insurance and Freight) includes F.O.B (Free on Board)., Insurance & Ocean freight.

You are required to answer the following 5 questions:

1. What is the total cost of shipment to be recorded by Vikas?
   (a) INR 13,17,000
   (b) INR 13,04,500
   (c) INR 13,54,500
   (d) INR 13,32,500
2. What is the absorption rate of total cost per unit of Zenga?
   (a) INR 90.28
   (b) INR 84.44
   (c) INR 93.62
   (d) INR 85.77
3. What is the absorption rate of total cost per unit of Xendga?
   (a) INR 52.01
   (b) INR 54.24
   (c) INR 58.13
   (d) INR 68.65

4. Amount of refundable taxes?

   (a) INR 4,13,600

   (b) INR 4,57,600

   (c) INR 2,20,000

   (d) INR 2,37,600

5. If loss of goods was 9% instead of 5%, what will be the amount that will be charged to statement of profit & loss?

   (a) INR 13,045

   (b) INR 19,898.4

   (c) INR 14,178.4

   (d) INR 24,045 **(5 x 2 = 10 Marks)**

Hilfy textiles Ltd. has been a major player in the textile industry, producing high-quality polyester mix cotton fabric. The production process is complex and involves multiple stages, including spinning, weaving, quality control, and packaging. The company has been facing challenges in controlling costs and maintaining profitability, mainly due to fluctuating material costs and labor inefficiencies.

To address these challenges, the company's management has decided to implement a **standard costing** system to better manage costs, set benchmarks, and identify variances. The goal is to gain better control over production costs, improve budgeting accuracy, and enhance decision-making.

Hilfy textiles Ltd. had prepared the following estimation for the month of April:

	Quantity/Time	Rate (₹)	Amount (₹)
Cotton	8,000 m	50.00	4,00,000
Polyester	6,000 m	40.00	2,40,000
Skilled labour	1,000 hours	37.50	37,500
Unskilled labour	800 hours	22.00	17,600

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 14,800 m finished product by using the followings:

	Quantity/Time	Rate (₹)	Amount (₹)
Cotton	9,000 m	48.00	4,32,000
Polyester	6,500 m	37.00	2,40,500
Skilled labour	1,200 hours	35.50	42,600
Unskilled labour	860 hours	23.00	19,780

On the basis of analysis of standard costing system, company's management wants to take actions like supplier negotiation, process optimisation, employee training, etc.

Being the cost manager of the company, you are required to answer the following five requirements of the management:

6. Compute Material mix variance and Material Yield Variance
   (a) ₹ 1430 (A) & 43,200 (F)
   (b) ₹ 1430 (F) & 43,200 (F)
   (c) ₹ 24,000 (A) & 37,500 (F)
   (d) ₹ 19,300 (A) & 37,500 (F)
7. Compute Material Price Variance for supplier negotiation
   (a) ₹ 18,000 (A)
   (b) ₹ 43,200 (F)
   (c) ₹ 37,500 (A)
   (d) ₹ 37,500 (F)
8. Compute Material Cost Variance
   (a) ₹ 32,500 (F)
   (b) ₹ 24,500 (A)
   (c) ₹ 79,270 (F)
   (d) ₹ 79,270 (A)
9. Compute Labour Efficiency Variance and Labour Yield Variance.
   (a) ₹ 940 (A) & 1,140 (A)
   (b) ₹ 2,424 (A) & 1,556 (A)
   (c) ₹ 2,424 (A) & 1,556 (A)
   (d) ₹ 940 (A) & 1,140 (F)
10. Compute Labour Cost Variance.
    (a) ₹ 884 (A)
    (b) ₹ 1,556 (F)
    (c) ₹ 884 (F)
    (d) ₹ 1,556 (A) **(5 x 2 = 10 Marks)**
11. A company's fixed costs are ₹ 5,00,000, the selling price per unit is ₹ 200, and the variable cost per unit is ₹100. How many units must the company sell to earn the targeted profit of ₹ 2,00,000?
    (a) 2,000 units
    (b) 5,000 units
    (c) 10,000 units

(d) 7,000 units **(2 Marks)**

12. 1200 Kg of a material were input to a process in a period. The normal loss is 8% of input

There is no opening or closing work-in-progress. Output in the period was 1100 Kg. What was the abnormal gain/loss in the period?

(a) Abnormal gain of 12 Kg

(b) Abnormal loss of 12 kg

(c) Abnormal gain of 108 Kg

(d) Abnormal loss of 4 kg **(2 Marks)**

13. ABC Manufacturing allocates its factory overhead costs based on machine hours. The total estimated overhead cost for the year is ₹ 6,00,000, and the company expects to use 30,000 machine hours. During the year, job A used 300 machine hours. What amount of overhead costs should be allocated to this job?

(a) ₹ 4,000

(b) ₹ 6,000

(c) ₹ 10,000

(d) ₹ 8,000 **(2 Marks)**

14. A factory has a capacity utilization ratio of 85% and its activity ratio is 95%. Which one of the following is the efficiency ratio?

(a) 120%

(b) 110%

(c) 112%

(d) 90% **(2 Marks)**

15. A company uses batch costing and incurs a setup cost of ₹ 20,000 for a batch of 300 units. If direct materials cost ₹ 20 per unit and direct labor costs ₹ 10 per unit, what is the total cost of the batch?

(a) ₹ 25,000

(b) ₹ 29,000

(c) ₹ 32,000

(d) ₹ 7,000 **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) A skilled worker is paid a guaranteed wage rate of ₹ 150.00 per hour. The standard time allowed for a job is 50 hours. He 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%). **(5 Marks)**

(b) SpeedEx Logistics, established in 2010 and headquartered in Mumbai, India, operates within the transportation and logistics industry as a third-party logistics (3PL) provider. The company's fleet consists of 10 trucks, 15 vans, and 5 trailer, each serving distinct purposes. The records of Truck R-40 reveal the following information for July 2024.

Days Maintained	30
Days Operated	25
Total Hours Operated	300
Total Kilometres Covered	2,500
Total Tonnage Carried (4 tonne-load per trip, return journey empty 2 round trips per day)	

The following further information is made available:

A. Operating Costs for the month: Petrol ₹ 400, oil ₹170, Grease ₹ 90, Wages to driver ₹ 550, Wages to Worker ₹ 350.

B. Maintenance Costs for the month: Repair ₹ 170, Overhaul ₹ 60, Tyres ₹ 150, Garage charges ₹ 100.

C. Fixed Costs for the month based on the estimates for the year: Insurance ₹ 50, Licence, tax etc. ₹ 80, Interest ₹ 40, Other Overheads ₹ 190

D. Capital costs: Cost of acquisition ₹ 54,000; Residual Value at the end of 5 years life ₹ 36,000.

You are required to CALCULATE:

(i) cost per days maintained

(ii) cost per days operated

(iii) cost per hours operated

(iv) cost per kilometres covered

(v) cost per commercial tonne km **(5 Marks)**

(c) Alpha 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. **(4 Marks)**

2. (a) As demand for LED light increases, more entrepreneurs are coming into its manufacturing process. eLED Pvt. Ltd. is also one of the recently formed company whose main business is related to LED lights.

The company has extended its hand into various LED products like COB (Chip On Board) LEDs, SMD (Surface Mounted Device) LEDs, RGB LEDs, Flashing LEDs, Miniature LEDs, OLEDs, Filament Bulbs, etc.

However, at the beginning stage, the company has decided to only assemble the products and enter into manufacturing stage at later years.

The details relating to the first process of mounting for the month of August are given below:

Opening Work-in-Process:	31,000 units
Material	₹ 12,40,000
Labour	₹ 2,32,500
Overheads	₹ 6,97,500
Introduction during the process:	5,89,000 units
Material	₹ 2,29,40,000
Labour	₹ 55,64,500
Overheads	₹ 1,66,93,500

The process involve some wastage as well. The management estimated a normal loss of 5% of total input including opening work-in-process which can be sold out for ₹ 20 per unit. However, the workers reported 46,500 units as scrapped in which 100% material was used along with 80% of Labour and overheads.

5,42,500 units were transferred for next process of soldering.

Some units were still in process and thus, shifted for the next month process of mounting. With 100% material used along with 80% labour and overheads, 31,000 units were shifted.

Following the average method of inventory, you are required to PREPARE:

(i) Statement of cost showing cost per equivalent unit

(ii) Statement of distribution cost

(iii) Process Account (Mounting)

(iv) Normal Loss Account and Abnormal Loss Account. **(10 Marks)**

(b) EXPLAIN the Usefulness/Suitability of ABC. **(4 Marks)**

3. (a) A company manufactures and sells a product, the price of which is controlled by the Government. Raw material required for this product is also made available at a fixed controlled price. The following figures have been called for the previous two accounting years of the company:

	Year- I	Year- II
Quantity Sold (tones)	1,26,000	1,44,000
Price per tone	₹ 185	₹ 185
		(₹ In thousands)
Sales Value	23,310	26,640
Raw Materials	11,340	12,960
Direct Labour	1,512	1,872
Factory, Administration and Selling Expenses	9,702	11,232
Profit	756	576

During the year II direct labour rates increased by 8 $^{1}/_{3}$%. Increases in factory, administration and selling expenses during the year were ₹ 8,10,000 on account of factors other than the increased quantities produced and sold. The managing director desires to know, what quantity if they had produced and sold would have given the company the same net profit per tonne in Year II as it earned during the Year I Advise him. **(7 Marks)**

(b) ABC Ltd is engaged in producing electronic equipments. It has furnished following details related to its products produced during a month:

	Units	Amount (₹)
Opening stock	10,000	5,00,00,000
Purchases	4,90,000	25,20,00,000
Closing stock	17,500	85,00,000
Works-in-progress		
Opening	20,000	1,20,00,000
Closing	10,000	60,50,000
Direct employees' wages, allowances etc.		5,50,50,000
Primary packaging cost (per unit)		140
R&D expenses & Quality control expenses		1,90,00,000
Guards' salaries		20,00,000
Directors' salaries		60,00,000
Consumable stores, depreciation on plant related to factory overhead		3,42,00,000
Product inspection (before primary packaging)		22,00,000
Rearrangement design of factory machine		75,00,000

Administrative overheads related to production		3,45,00,000
Selling expenses		3,94,50,000
Royalty paid for production		3,10,50,000
Cost of web-site (for online sale) maintenance		60,75,000
Gifts & Snacks		30,50,000
GST (credit allowed)		5,50,00,000
AMC cost of CCTV		10,00,000
Hiring of cars for the transportation of employees and guests		25,00,000
Audit and Legal Fees		29,00,000
Secondary packaging cost (per unit)		20

Distribution of the following costs:
Guard's salaries to Factory, Office and Distribution in the ratio 7: 2:1.
Hiring of cars is only for selling and distribution
AMC of CCTV to Factory, Office and Selling in the ratio 6 : 2 : 2.

The company paid EPF of 12% over above basic pay. However, Guards will not receive any incentive or EPF.

It has lucky draws every month giving the first prize of ₹ 1,00,000; 2nd prize of ₹ 50,000, 3rd prize of ₹ 20,000 and three consolation prizes of ₹ 10,000 each to customers buying the product.

It also sponsors a television programme every week at a cost of ₹ 20,00,000 per month.

The hiring of cars attracts GST under RCM @5% without credit.

There was a normal scrap of 2,000 units of direct material which realized ₹ 350 per unit. The entire finished product was sold at a profit margin of 25% on sales.

You are required to PREPARE a cost sheet **(7 Marks)**

4. Allurgy Ltd. is into metallic tools manufacturing. It has four production departments. The work performed in every department is fairly uniform, thus the manager of the company created a policy to recover the production overheads of the entire company by adopting a single blanket rate.

The relevant data for a month are given below:

Departments	**Direct Materials (₹)**	**Direct Wages (₹)**	**Factory Overheads (₹)**	**Direct Labour Hours**	**Machine Hours**
Budget:					
Operating	64,35,000	7,92,000	35,64,000	1,98,000	7,92,000

Assembly	11,73,000	24,15,000	9,66,000	6,90,000	69,000
Quality Control	5,10,000	10,50,000	4,20,000	3,00,000	30,000
Packing	9,90,000	6,93,000	12,37,500	4,95,000	-
Actual:	-	-	-	-	-
Operating	77,22,000	9,50,400	38,61,000	2,37,600	9,50,400
Assembly	9,38,400	18,63,000	5,79,600	6,21,000	75,900
Quality Control	4,08,000	8,10,000	2,52,000	2,70,000	33,000
Packing	11,88,000	8,91,000	13,36,500	5,94,000	-

Additional details relating to one of the jobs during the month are also provided below:

Job No. 157

Departments	Direct Materials (₹)	Direct Wages (₹)	Direct Labour Hours	Machine Hours
Operating	11,880	2,376	594	1,782
Assembly	4,140	2,484	828	207
Quality Control	1,800	1,080	360	90
Packing	2,970	594	396	-

During Quality Control phase of this particular Job, the company incurred certain additional expenditure of ₹ 495 on direct wages as there were certain production that was not as perfect as the saleable product. The defective units were normal in nature and after rectification have been brought to the required degree of perfection.

The company adds 25% on the factory cost to cover administration overheads and profit.

You are required to figure out the following:

(a) COMPUTE the overhead absorption rate as per the blanket rate based on the percentage of total factory overheads to total factory wages and determine the selling price of the Job No. 157. **(1 + 2 = 3 Marks)**

(b) The new manager thinks that the machinery is used to a varying degree in the different departments. Thus, it is not appropriate to follow one blanket rate for the whole company. Therefore, suggest an alternative method of absorption of the factory overheads and CALCULATE the overhead rates based on the method so suggested. **(4 Marks)**

(c) DETERMINE the selling price of Job 157 based on the overhead rates calculated in (b) above. **(3 Marks)**

(d) CALCULATE the department-wise under or over recovery of overheads based on the company's current policy and the method suggested in (b) above. **(4 Marks)**

5. (a) The financial books of a company reveal the following data for the year ended 31st March, 2024:

	(₹)
Opening Stock:	
Finished goods 545 units	48,250
Work-in-process	38,000
01.04.2023 to 31.03.2024	
Raw materials consumed	5,00,000
Direct Labour	4,20,000
Factory overheads	3,56,000
Administration overheads	2,10,000
Stores Adjustment debited in financial Account	50,000
Dividend paid	98,000
Bad Debts	16,000
Selling and Distribution Overheads	84,000
Income tax paid	34,000
Interest received	42,000
Sales 14,250 units	13,96,500
Closing Stock: Finished goods 460 units	44,500
Work-in-process	36,200

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 ₹ 6 per unit sold.
- Opening Stock of finished goods is valued at ₹ 90 per unit.
- The company values work-in-process at factory cost for both Financial and Cost Profit Reporting.

Required:

(i) Prepare statements for the year ended 31st March, 2024 show
   - the profit as per financial records
   - the profit as per costing records.

(ii) Present a statement reconciling the profit as per costing records with the profit as per Financial Records **(7 Marks)**

(b) PPP Ltd. is currently operating at 80% of its capacity producing 80,000 units. For the past two years, the production is increasing by 10% of its capacity consistently. The cost details are as follows:

	Year 3 (₹)	Year 2 (₹)	Year 1 (Current year) (₹)
Direct Materials	12,00,000	14,00,000	16,00,000
Direct Labour	6,00,000	7,00,000	8,00,000
Factory Overheads	3,20,000	3,40,000	3,60,000
Selling Overheads	3,40,000	3,80,000	4,20,000
Administrative Overheads	1,60,000	1,60,000	1,60,000
	26,20,000	29,80,000	33,40,000

The company is planning for 90% capacity level for next year.

Additional information:

Due to increase in demand of the raw material, the distributor is expected to increase the price by 10% from the next year.

At the beginning of the current year, the dispute occurred between workers and employees regarding wages which lead them to go on strike. Later on, they settled for 20% increase in wages from next year.

Following increases in overhead cost are expected for next year:

Variable Factory Overheads	5%
Fixed Factory Overheads	10%
Variable Selling Overheads	10%
Fixed Selling Overheads	15%
Administrative Overheads	15%

Profit is estimated @ 25% on total cost.

You are required to PREPARE flexible budget for the next year at 90% level of capacity.

Also ascertain profit and contribution. **(7 Marks)**

6. (a) Management of Tillu manufacturing co. is thinking of installing a costing system its company. What practical DIFFICULTIES management will expect and how management will OVERCOME the same? **(5 Marks)**

(b) Anju Ltd. is engaged in production of butter. While producing butter buttermilk is also produced. Buttermilk is identified as by-product of butter. What is the TREATMENT of buttermilk in the cost accounts of Anju Ltd. **(5 Marks)**

(c) Fixed budgets are very simple to understand and less time consuming, however, only flexible budgets are more realistic and practicable because it gives due consideration to behaviour of revenue and cost at different levels of activity. But still there are certain demerits of both the budgets. NARRATE the same. **(4 Marks)**

OR

(c) DISCUSS the objectives of time keeping & time booking. **(4 Marks)**

MODEL TEST PAPER 6

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

Case Scenario I

XYZ Manufacturing Ltd. is a mid-sized enterprise that has established a strong reputation in the field of precision engineering. The company specializes in producing high-quality engineering components that meet the stringent requirements of various industries including automotive, aerospace, medical devices, and industrial machinery. With a commitment to precision and excellence, XYZ Manufacturing Ltd. has positioned itself as a reliable supplier of critical components that demand the highest levels of accuracy and durability.

To maintain stringent control over its production costs and enhance cost efficiency, XYZ Manufacturing Ltd. operates under a standard costing system. This system plays a pivotal role in the company's financial and operational management. Standard costing involves setting predetermined costs for each production element, including materials, labor, and overheads. These predetermined costs, known as standard costs, serve as benchmarks against which actual production costs are measured.

Particulars	Budgeted Data	Actual Data
Units Produced	10,000 units	9,500 units
Fixed Overheads	₹ 20,00,000	₹ 19,50,000 + ₹ 1,00,000 (additional quality control cost for

		1,000 units chosen on sample basis)
Hours Worked	15,000 hours	14,250 hours
Variable Overhead Rate	₹ 50 per hour	₹ 50 per hour (first 10,000 hours) ₹ 60 per hour (additional hours)

Based on the given information, you are being required to answer the following questions (MCQs 1 to 5):

1. What is the Fixed Overhead Cost Variance for XYZ Manufacturing Ltd. in May 2024?
   (a) ₹ 50,000 (A)
   (b) ₹ 1,00,000 (A)
   (c) ₹ 1,50,000 (A)
   (d) ₹ 2,00,000 (A)
2. What is the Fixed Overhead Volume Variance for XYZ Manufacturing Ltd. in May 2024?
   (a) ₹ 50,000 (F)
   (b) ₹ 50,000 (A)
   (c) ₹ 1,00,000 (F)
   (d) ₹ 1,00,000 (A)
3. What is the Variable Overhead Efficiency Variance for XYZ Manufacturing Ltd. in May 2024?
   (a) ₹ 37,500 (A)
   (b) ₹ 42,500 (A)
   (c) ₹ 0
   (d) ₹ 25,000 (A)
4. What is the Variable Overhead Expenditure Variance for XYZ Manufacturing Ltd. in May 2024?
   (a) ₹ 40,000 (A)
   (b) ₹ 42,500 (A)
   (c) ₹ 45,000 (A)
   (d) ₹ 45,030 (A)
5. What is the Fixed Overhead Expenditure Variance for XYZ Manufacturing Ltd. in May 2024?
   (a) ₹ 50,000 (F)
   (b) ₹ 50,000 (A)
   (c) ₹ 1,00,000 (F)
   (d) ₹ 1,00,000 (A) **(5 x 2 Marks)**

Case Scenario II

A garment manufacturer has been producing and selling T-shirts exclusively for Indian market. His T-shirts are made of a specific material which is eco-friendly. It means that T-shirts are bio-degradable in soil after it becomes unsuitable for use.

This invention has been applauded throughout the country. Owner, Vikas, registered for the patent rights for his invention so that no one else could use it.

Vikas feels that this invention will also be liked in foreign markets, and thus plans to expand his business outside India. He feels that US market is the first foreign market he should tap into.

Current cost structure (each T-shirt):

Direct material	90
Direct labour	60
Special service	80
(Used in T-shirt making, 50% fixed)	
Fixed overhead	50
Administration overhead (fixed)	20
Total cost per T-shirt	300
(+) Profit margin	200
Selling price in India	500

There is no limitation of any resources in India. Vikas is able to sell 80,000 T-shirts each year. He is currently working at 80% of his total capacity.

After searching for potential customers in US, Vikas received an inquiry for 30,000 units from a wholesale distributor in California. As per the inquiry, order will be placed if price per T-shirt is reasonable and the order has to be satisfied in full.

Vikas decided to send a quote and the order was placed by the foreign client, on the same day. Vikas, without a second thought accepted the order, but did not feel the need to extend the manufacturing capacity; therefore he decided forgo a few Indian clients.

This foreign order also required special packaging. It is spent at 20% of the total prime cost per T-shirt. The production was done quickly and foreign consignment was transported to custom port via services from a carriage agency. It charged ₹ 80,000 for 1 truck, whose capacity was 500 kg, to transport whole of the consignment. Truck was 20% vacant after loading the consignment.

Bill of lading was filed and a professional fee of ₹ 25,000 for filing this was paid to a Chartered accountant. Custom port also charged ₹ 80 per kg per day to handle the material, storing it in warehouse, and for loading the goods on ship.

The shipping company, which was booked by Vikas for taking the consignment to US, got delayed due to bad weather. Stock was held at port for 5 days and on 6th day it was loaded on ship. Shipping company charged ₹ 2,800/ 10kg of goods. Insurance was charged flat at ₹ 1,11,000.

There is no custom duty on such exports.

Answer the following questions (MCQs 6 to 10):

6. Vikas had sufficient funds in his hands but he still raised a short-term working capital loan @ 6.5% p.a. for the satisfaction of this foreign order because he found a one time investment opportunity which was giving him 9.25% returns. Foreign order was accepted on 1st June and loan was taken on the same day. Repayment of the loan will be made on 1st September. Calculate net cash outflow due to this export order. Which of the following is correct?

   (a) ₹ 73,91,000

   (b) ₹ 75,47,750

   (c) ₹ 74,76,500

   (d) ₹ 71,06,000

7. What would have been the minimum price that Vikas could have quoted per T-shirt in US dollars? (exchange rate on 1st June, $1 = ₹ 83.86)

   (a) $ 4.23

   (b) $ 4.20

   (c) $ 4.17

   (d) $4.05

8. Payment from foreign client was received on 8th October when exchange rate was ₹ 86 for each US $. Calculate the profit earned from this export order if actual quoted price was $4.90 per T-shirt. Select the correct amongst following:

   (a) ₹ 40,65,500

   (b) ₹ 41,51,000

   (c) ₹ 39,94,250

   (d) ₹ 44,36,000

9. What is the net cash Inflow from this export order?

   (a) ₹ 55,36,000

   (b) ₹ 51,65,500

   (c) ₹ 52,51,000

   (d) ₹ 50,94,250

10. What is the Incremental benefit from this export order?

    (a) ₹ 19,94,250

    (b) ₹ 21,51,000

    (c) ₹ 20,65,500

    (d) ₹ 24,36,000 **(5 x 2 Marks)**

11. The rate of change in the composition of employee force over the average number of employees for the year is computed as 9% under 'separation method'. However, the same rate is computed as 15% and 30% under 'replacement method' and 'flux method' respectively.

    Considering the average number of employees on roll during the year as 200, FIND OUT the number of employees -

    (i) replaced, (ii) left and discharged and (iii) recruited and joined

    (a) Replaced- 18 employees, left and discharged- 30 employees and recruited & joined- 42 employees

    (b) Replaced- 30 employees, left and discharged- 42 employees and recruited & joined- 18 employees

    (c) Replaced- 30 employees, left and discharged- 18 employees and recruited & joined- 42 employees

    (d) Replaced- 42 employees, left and discharged- 18 employees and recruited & joined- 30 employees **(2 Marks)**

12. WHICH of the following item is not the cause of differences in Financial and Cost Accounts?

    (a) Income tax not treated in Cost Accounts

    (b) Dividends credited in Financial Accounts

    (c) Losses on the sale of investments not treated in Financial Accounts

    (d) Cost Accounts showing notional depreciation on the assets fully depreciated for which book value is nil **(2 Marks)**

13. Mefttal Ltd. is currently operating at 60% of its total capacity which is 1.5 times than the previous year. The total capacity of the company is 2,00,000 units.

    Other information relating to the production is provided below:

    (i) The total cost of production for the current year is ₹ 59,28,000, and for the previous year, it was ₹ 44,72,000.

    (iii) No changes are anticipated in the cost structure for the upcoming years.

    Selling price is ₹ 52 per unit and is expected to remain the same in the coming years.

You are required to CALCULATE Break-Even Point (in units).

(a) 1,20,000 units

(b) 40,000 units

(c) 80,000 units

(d) 1,00,000 units **(2 Marks)**

14. Parth Ltd. operates in insurance business. Previous Year, the company launched a new term insurance policy called 'Max Jivan' and incurred the following expenditure throughout the year:

Particulars	**Amount (₹)**
Claim management cost	52,82,000
Facilities cost	6,49,82,500
Employees cost	2,25,18,000
Cost of marketing of the policy	19,30,71,000
Policy development cost	4,86,50,000
Policy issuance cost	4,10,05,000
Policy servicing cost	13,40,65,500
Sales support expenses	4,44,80,000
Office administration cost	6,67,20,000
I.T. Cost	30,71,90,000
Postage and logistics	4,50,36,000

You are required to ASCERTAIN the cost of the policy 'Max Jivan' segregated into four main activities namely (a) Marketing and Sales support (b) Operations (c) I.T. Cost and (d) Support functions.

(a) Marketing and Sales support- ₹ 23,75,51,000, Operations - ₹ 22,90,02,500, I.T. Cost- ₹ 30,71,90,000 and Support functions- ₹ 19,92,56,500

(b) Marketing and Sales support- ₹ 28,62,01,000, Operations- ₹ 22,53,88,500, I.T. Cost- ₹ 30,71,90,000 and Support functions- ₹ 15,42,20,500

(c) Marketing and Sales support- ₹ 28,62,01,000, Operations- ₹ 18,03,52,500, I.T. Cost- ₹ 30,71,90,000 and Support functions- ₹ 19,92,56,500

(d) Marketing and Sales support- ₹ 24,17,21,000, Operations- ₹ 22,48,32,500, I.T. Cost- ₹ 30,71,90,000 and Support functions- ₹ 19,92,56,500 **(2 Marks)**

15. RN Ltd. manufactures two primary products, P^1 and P^2, through a joint process and a by-product, R^{12}, is produced spontaneously. The relationship between output quantities to the direct material input stays stable.

To allocate joint production costs to the primary products, the company utilizes the physical volume method.

During the month of March, company incurred joint production costs of ₹ 1,30,00,000. As the primary products are not freely marketable at the split-off point, they are processed further.

The net realizable value of the by-product is treated as deductions from the joint production costs before the joint costs are allocated to the primary products.

The information regarding company's production and its cost during the month of March is provided below:

Particulars	**P^1**	**P^2**	**R^{12}**
Output (kg.)	1,95,000	3,90,000	81,250
Selling price per kg.	₹ 200	₹ 120	₹ 40
Further processing costs	₹ 26,00,000	₹ 39,00,000	-

FIND OUT the amount of joint product cost to be allocated to P^2 by using the physical volume method.

(a) ₹ 65,00,000

(b) ₹ 97,50,000

(c) ₹ 39,00,000

(d) ₹ 32,50,000 **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) Petro Ltd. is a petroleum refining company which uses cracking process for producing gasoline, diesel and Heavy fuel oil (HFO). All three final products are extracted simultaneously at one common split-off point.

Gasoline and diesel are immediately available for sale upon separation, requiring no further processing. In contrast, heavy fuel oil (HFO) undergoes additional processing before it can be sold, as there is no market for it at the split-off point.

Throughout the year, the selling prices and total quantities sold for each item were as follows:

Product	Quantity sold (Gallons)	Selling Price per gallon (₹)
Gasoline	1,674	400
Diesel	4,743	300
Heavy fuel oil (HFO)	6,624	200

The selling prices listed above are projected to remain unchanged in the upcoming year.

The total joint manufacturing costs for the year amounted to ₹ 15,00,000, with an additional cost of ₹ 7,44,000 incurred for finishing Heavy fuel oil (HFO).

There were no opening inventories of gasoline, diesel and Heavy fuel oil (HFO). Though, at the end of the period, the following inventories of complete units were available: 1,620 gallons of gasoline, 540 gallons of diesel, and 225 gallons of Heavy fuel oil (HFO).

You are required to COMPUTE the following for gasoline, diesel and Heavy fuel oil (HFO)-

(i) joint cost allocated, and

(ii) cost of goods sold

using Net Realisable Value Method of joint cost allocation.

(5 Marks)

(b) The following information have been extracted from the cost records of a manufacturing company:

		(₹)
	Stores	
*	Opening balance	9,000
*	Purchases	48,000

*	Transfer from WIP	24,000
*	Issue to work-in-progress	48,000
*	Issue for repairs	6,000
*	Deficiency found in stock	1,800
	Work-in-Progress:	
*	Opening balance	18,000
*	Direct Wages applied	18,000
*	Overhead charged	72,000
*	Closing balance	12,000
	Finished Production :	
*	Entire production is sold at a profit of 10% on cost from work-in-progress	
*	Wages paid.	21,000
*	Overhead incurred	75,000

DRAW the Stores Leger Control A/c, Work-in-Progress Control A/c, Overheads Control A/c and Costing Profit and Loss A/c. **(5 Marks)**

(c) 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 hours 40

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

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. **(4 Marks)**

2. (a) Baba Ltd. belongs to an automotive industry, manufacturing hybrid bicycles. The production of bicycles passes through three departments, viz. X1, Y2, Z3. The bicycles being equipped with gears needs quality check from time to time. Thus, the company also operates two service departments, namely quality control (QC) and maintenance (M), for its bicycle.

Following information is extracted from the accounting books regarding expenses as incurred/ charged:

Particulars	(₹)
Rent and Rates	40,00,000
General Lighting	4,80,000
Indirect Wages	15,51,200
Power	12,00,000
Depreciation on Machines	80,00,000
Sundries	77,56,000

Additional information:

	Production Departments			Service Departments	
	X1	Y2	Z3	QC	M
Direct wages (₹)	24,00,000	16,00,000	24,00,000	12,00,000	1,56,000
Working hours	6,140	8,950	4,838	-	-
Value of machines (₹)	4,80,00,000	6,40,00,000	8,00,00,000	40,00,000	40,00,000
H.P. of machines	120	60	100	20	-
Light points	20	30	40	20	10
Floor space (sq. ft.)	4,000	5,000	6,000	4,000	1,000

A technical assessment unveiled the following basis for the apportionment of expenses of service departments:

	X1	Y2	Z3	QC	M
QC	20%	30%	40%	-	10%
M	40%	20%	30%	10%	-

You are required to DETERMINE the following:

(i) Overheads distributed to all the departments, viz. X1, Y2, Z3, QC and M.

(ii) Overheads total and rate per hour under all the Production Departments after redistribution of Service Department's Overhead.

(iii) Total cost of a bicycle, considering the Direct Material and labour Cost of ₹ 20,000 and ₹ 12,000 respectively, which is being processed for manufacturing in Departments X1, Y2 and Z3 for 4, 5 and 3 hours respectively. **(5 + 5 + 2 = 12 Marks)**

(b) Luxz Ltd. is into luxury pens business manufacturing 120 pens in a batch. To process a single batch of 120 pens, company needs to incur following expenditure:

Particulars	**(₹)**
Direct Materials	57,375
Direct wages	6,750
Batch Set-up cost	18,900

For each batch, the company absorbs the Production Overheads at a rate of 20% of direct wages and 15% of the total production cost is allocated to cover selling, distribution, and administrative overheads.

During the month of March, Luxz Ltd. received an order for 2,400 pens and the company aims to achieve a profit margin of 25% on its sales value.

You are required to DETERMINE the total sales value for 2,400 pens. **(2 Marks)**

3. (a) Following information is available from the books of YSPP Ltd. for the current year ending 31st March:

S. No.	**Particulars**	**(₹)**	**(₹)**
(i)	Raw materials purchased		35,00,00,000
(ii)	Freight inwards		39,22,100
(iii)	Wages paid to factory workers		1,02,20,000
(iv)	Contribution made towards employees' PF & ESIS		12,60,000
(v)	Hire charges paid for hiring specific equipment		8,40,000
(vi)	Amount paid for power & fuel		16,17,000
(vii)	Amount paid for purchase of moulds and patterns (life is equivalent to four years production)		31,36,000
(viii)	Job charges paid to job workers		28,42,000
(ix)	Lease rent paid for production assets		3,92,000
(x)	Depreciation on:		

	Factory building	2,94,000	
	Office building	1,96,000	
	Plant & Machinery	4,41,000	
	Delivery vehicles	3,01,000	12,32,000
(xi)	Salary paid to supervisors		4,41,000
(xii)	Repairs & Maintenance paid for: Plant & Machinery	1,68,000	
	Sales office building	63,000	2,31,000
(xiii)	Insurance premium paid for:		
	Plant & Machinery	1,09,200	
	Factory building	63,350	
	Stock of raw materials & WIP	1,26,000	2,98,550
(xiv)	Expenses paid for quality control check activities		68,600
(xv)	Salary paid to quality control staffs		3,36,700
(xvi)	Research & development cost paid for improvement in production process		63,700
(xvii)	Expenses paid for administration of factory work		4,15,100
(xviii)	Salary paid to functional mangers:		
	Production control	33,60,000	
	Finance & Accounts	32,13,000	
	Sales & Marketing	35,42,000	1,01,15,000
(xix)	Salary paid to General Manager		43,96,000
(xx)	Packing cost paid for:		
	Primary packing necessary to maintain quality	3,36,000	
	For re-distribution of finished goods	3,92,000	7,28,000
(xxi)	Fee paid to auditors		6,30,000
(xxii)	Fee paid to independent directors		7,70,000
(xxiii)	Value of stock as on 1st April (beginning):		
	Raw materials	63,00,000	

	Work-in-process	32,20,000	
	Finished goods	38,50,000	1,33,70,000
(xxiv)	Value of stock as on 31st March (ending):		
	Raw materials	33,60,000	
	Work-in-process	30,45,000	
	Finished goods	63,00,000	1,27,05,000

Due to delay in picking up cargo from the port, YSPP Ltd. had to pay ₹ 15,000 as demurrage in the month of March.

From the above data you are required to PREPARE Statement of cost for YSPP Ltd. for the year ended 31st March, showing (i) Prime cost, (ii) Factory cost, (iii) Cost of Production, (iv) Cost of sales.

(2 + 2 + 2 + 2 = 8 Marks)

(b) Following information is extracted from the purchase department of A Ltd.:

(i) Number of units to be purchased during the year is 10,000

(ii) Cost of placing a purchase order is ₹ 40

(iii) Purchase price per unit is ₹ 80

(iv) Insurance charges to be paid for protecting goods during transit is ₹ 20 per unit

(v) Cash discount to be received is 2%

(vi) Annual cost of storage per unit is ₹ 5

(vii) Details of lead time:

Average-	20 days
Maximum-	30 days
Minimum-	10 days
For emergency purchases-	8 days.

(viii) Rate of consumption:

Average-	30 units per day
Maximum-	40 units per day.

From the information given above, you are required to CALCULATE:

(i) Re-ordering level

(ii) Maximum level

(iii) Minimum level

(iv) Danger level. **(6 Marks)**

4. (a) Xtyle Ltd. is a leading manufacturer in the textile industry, renowned for its commitment to quality and innovation. With decades of experience, the company specializes in producing a diverse range of textile products, including high-quality towels, designed to meet the varying needs of its

customers. The company offers mainly three types of towel, viz. Hand towels, Kitchen towels and Gym towels, catering to both everyday use and specialized applications. Below are the key production data for a recent period:

Particulars	Hand towels	Kitchen towels	Gym towels
Production (units)	9,000	15,000	60,000
Machine hours per unit	10	18	14
Direct Labour hours per unit	4	12	8
Direct Material per unit (₹)	450	400	600

Currently, the company utilizes a traditional costing method, which assigns all production overhead costs based on the number of machine hours used. The overhead cost is calculated at a rate of ₹ 30 per machine hour. Additionally, the direct labor cost is charged at ₹ 100 per hour.

Now, the company plans to implement an Activity-Based Costing (ABC) system to enhance cost accuracy and provide a clearer understanding of the costs associated with each product.

The activity analysis is provided as under:

Particulars	Hand towels	Kitchen towels	Gym towels
Batch size (units)	450	1,500	3,000
Number of purchase orders per batch	3	10	8
Store delivery	45	80	125
Number of inspections per batch	5	4	3

Further, the total production overheads can be divided into several key categories. Machine setup costs account for 20% of the total, while inspection costs make up 35%. Material procurement-related costs represent 10%, and store delivery costs also constitute 10%. Finally, machine operation costs contribute 25% to the overall overheads. This breakdown provides insight into how resources are allocated across various activities within the production process.

You are required to CALCULATE the cost per unit of each product using -

(i) traditional method.

(ii) activity based costing principles. **(6 Marks)**

(b) The following information relates to Anu Limited, a AI enabled toy manufacturing company:

The selling price of a toy is ₹ 3,000, and sales are made on credit and invoiced on the last day of the month.

Variable costs of production per toy are materials (₹ 1,000), labour (₹ 800), and overhead (₹ 400)

The sales manager has forecasted the following volumes:

Month	No. of Toys
November	1,000
December	1,000
January	1,000
February	1,250
March	1,500
April	2,000
May	1,900
June	2,200
July	2,200
August	2,300

Customers are expected to pay 50% One month after the sale and 50% Two months after the sale.

The company produces the toys two months before they are sold and the creditors for materials are paid two months after production.

Variable overheads are paid in the month following production and are expected to increase by 25 % in April; 75% of wages are paid in the month of production and 25% in the following month. A wage increase of 25% will take place on 1st March.

The company needs funds for the running the business and purchase of new machine so it will sell one of its freehold properties in June for ₹ 20,00,000, and buy a new machine in June for ₹ 5,00,000. Depreciation is currently ₹ 10,000 per month, and will rise to ₹ 15,000 after the purchase of the new machine.

The company's corporation tax of ₹ 1,00,000 is due for payment in March.

The company presently has a cash balance at bank on 31 December 2023, of ₹ 50,000.

You are required to PREPARE a cash budget for the six months from January to June, 2024. **(8 Marks)**

5. (a) Hawtt Veel is a renowned brand of HV Ltd. which manufactures toy car. The manufacturing process of the toy cars at first involve designing the parts, creating the mold and then simultaneously melting the plastic. As the mold created last year is being used as it is for the current year, the first process involves only melting the plastic (Process I). The next process is about injecting the plastic into the mold and assembling the parts formed (Process II).

During the month of April, the materials for 1,20,000 toy cars were put through Process I of which melting process were completed for 90,000 toy cars only before transferring to Process II.

The costs incurred in Process I are as follows:

Direct material	₹ 22,50,000
Direct wages	₹ 27,00,000
Factory overheads	₹ 18,00,000

Degree of completion for those not transferred to Process II is as follows:

Materials	100%
Labour and overheads	50%

Out of those transferred to Process II for injecting and assembling, 84,000 units of toy car were completed and transferred to finished goods store for protective packing. The process of protective packing is done at the end of the Process II and the costs incurred are as follows:

Packing materials	₹ 6,00,000
Direct wages	₹ 5,25,000
Factory overheads	₹ 6,75,000

There was a normal loss of 600 units in Process II with no salvage value.

Some units were still in progress under Process II and thus, shifted for the next month process. The degree of completion for those not transferred to finished goods store is as follows:

Materials	100%
Labour and overheads	25%

You are required to PREPARE-

(i) Statement of Equivalent Production, Cost per unit and Process I A/c.

(ii) Statement of Equivalent Production, Cost per unit and Process II A/c. **(10 Marks)**

(b) EXPLAIN the Usefulness/Suitability of ABC. **(4 Marks)**

6. (a) Cost and Management Accounting information is used by different stakeholders. The users of the information can be broadly categorised into internal and external to the entity.

GIVE two examples of internal users and three examples of external users and EXPLAIN how they are concerned with the Cost and Management Accounting information. **(5 Marks)**

(b) EXPLAIN the Methods for ascertaining Service Cost Unit. **(5 Marks)**

(c) Despite the many benefits of Budgetary Control System, it does have its own limitations. DISCUSS those limitations. **(4 Marks)**

OR

(d) IDENTIFY the method of costing in the following cases and give one example of industry where this method is followed:

(i) Cost of each job is ascertained separately. It is suitable in all cases where work is undertaken on receiving a customer's order.

(ii) Cost of completing each stage of work is ascertained.

(iii) Each group is treated as a unit of cost and thus separately costed. Here cost per unit is determined by dividing the cost of the group by the number of units produced.

(iv) A combination of two or more methods of costing. **(4 Marks)**

MODEL TEST PAPER 7

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

Case Scenario I

A truck driver, named Raju, owns a truck which can carry 5 tonne of material at a time. Raju has no other truck and he has listed himself with various carriage services agencies, to offer his services. He gets his work from these agencies and they pay him as per the load and the distance. Raju has one condition that he must be paid for at least 75% of his total capacity. Raju charges freight at ₹ 10 per tonne-km.

He received a work contract, from one of these agencies, where he has to take 4 tonne from Delhi in the morning and drop it off at Chandigarh. After that he will move to Ludhiana, where he again loads 3 tonne and come back to Delhi by evening. This contract is for nearly 3 months.

Raju is excited to accept the order but it is not physically possible for Raju to complete this project alone. He decides to hire a helper cum driver who will assist him in this work contract and will also drive in turns with Raju. Thus, such a long contract will be managed comfortably. This helper will take ₹ 15,000 per month.

The contract will start from 15th June, 2024 and will run till 14th September, 2024. Throughout this time period there are only 2 days holidays, both falling in August (1 for Independence Day and 1 for Raksha Bandhan).

Some information about the Truck and its associated costs:

- Truck was purchased on 1st April, 2021 by taking a loan of ₹ 20,00,000 @ 10% p.a. from Punjab national bank for 5 years. Raju mortgaged jewellery of his wife to get this loan.
- Every year-end he has to pay ₹ 5,27,595 as instalment.
- Scrap value after 10 years is expected to be ₹ 500,000.
- Depreciation is charged on straight-line method.
- Services and maintenance charges each month is ₹ 80,000.
- Truck runs on diesel and its running average is 8kms/ litre.
- Diesel cost per litre:

June	80.30
July	80.50
August	81.25
September	80.90

Yearly interest amount of loan and yearly depreciation is charged to a work contract on the basis of days worked in a year in the contract.

Distance between these places:

(1) Delhi to Chandigarh = 250 kms

(2) Chandigarh to Ludhiana = 100 kms

(3) Ludhiana to Delhi = 150 kms

Answer the following questions (MCQs 1 to 5):

1. What would be the amount of profit Raju would have earned if he had no minimum charges limit of 75% of total capacity on absolute Tonne-km basis? (If the vehicle runs empty then he would only charge for Diesel expenses).

   A. 3,34,249

   B. 4,43,249

   C. 5,96,977

   D. 4,34,249

2. If payment was made on commercial Tonne-km basis and Raju had no minimum charges limit of 75%, how much he would have lost due to no minimum requirement?

   A. ₹ 6,37,500

   B. ₹ 5,93,750

   C. ₹ 4,92,438

   D. ₹ 3,91,126

3. What should be the minimum amount charged on basis of absolute Tonne-km if Raju wants to earn ₹ 2,70,000?

   A. ₹ 4.58

   B. ₹ 6.13

   C. ₹ 8.39

   D. ₹ 3.21

4. Choose the correct amount of depreciation and interest that should be charged to this work contract.

   A. 56,983 & 22,588

   B. 36,986 & 22,578

   C. 63,963 & 12,568

   D. 63,953 & 12,558

5. What is the profit as per current rate charged by Raju? (Use absolute Tonne-Km).

   A. 7,34,249

   B. 9,44,863

   C. 5,96,977

   D. 4,34,249 **(5 x 2 Marks)**

Case Scenario II

eSalt is the biggest producer of sodium hydroxide in India. This main product of the company has a strong reactivity with other organic compounds. It is highly versatile and is alkaline in nature. However, the basic material required for the production of this product is salt along with the electricity.

The manufacturing process involve electrolysis which produces Halogen as co-product. Modern use of Halogen is widespread. However, the common use is in disinfection like for purifying drinking water or swimming pool water. It is also an important ingredient of toothpaste. Thus, the company's management affirmed the simultaneous production of Halogen.

During the previous financial year, the company purchased the base material of ₹ 5,34,000. For the current year, company decided to increase the production by 2 times. Due to increased production, the total conversion cost hiked to 3 times. Last year, the conversion cost accounted to ₹ 8,01,000 up to the point at which two products i.e. sodium hydroxide and Halogen are separated.

The production and sales information for current year is provided as below:

	Sodium hydroxide	Halogen
Production/ Sales(in tonne)	24,030	16,020
Selling price per tonne (₹)	100	150

During the current year, the management of the company pointed the extensive use of Vinyl which can be produced by further processing Halogen. Having selling

price of ₹ 250 per tonne higher than that of the Halogen, it was decided not to sell Halogen and further process it into Vinyl. The incremental processing cost took ₹ 8,01,000 producing 10,012.50 tonnes of Vinyl.

You are required to FIGURE OUT the following for managerial decision (MCQs 6 to 10):

6. For the current year, the amount of base material purchased and the conversion cost up to the point at which two products i.e. Sodium hydroxide and Halogen are separated would be:

   A. base material ₹ 10,68,000 and conversion cost ₹ 24,03,000

   B. base material ₹ 10,68,000 and conversion cost ₹ 16,02,000

   C. base material ₹ 16,02,000 and conversion cost ₹ 24,03,000

   D. base material ₹ 24,03,000 and conversion cost ₹ 16,02,000

7. Joint cost to be apportioned between Sodium hydroxide and Halogen as per the physical unit method would be:

   A. Sodium hydroxide ₹ 24,03,000 and Halogen ₹ 10,68,000

   B. Sodium hydroxide ₹ 10,68,000 and Halogen ₹ 16,02,000

   C. Sodium hydroxide ₹ 16,02,000 and Halogen ₹ 24,03,000

   D. Sodium hydroxide ₹ 24,03,000 and Halogen ₹ 16,02,000

8. Joint cost to be apportioned between Sodium hydroxide and Halogen as per the sales value at split- off point method would be:

   A. Sodium hydroxide ₹ 20,02,500 and Halogen ₹ 20,02,500

   B. Sodium hydroxide ₹ 16,02,000 and Halogen ₹ 24,03,000

   C. Sodium hydroxide ₹ 24,03,000 and Halogen ₹ 16,02,000

   D. Sodium hydroxide ₹ 10,68,000 and Halogen ₹ 20,02,500

9. Joint cost to be apportioned between Sodium hydroxide and Halogen as per the estimated net realisable value method would be:

   A. Sodium hydroxide ₹ 23,44,390 and Halogen ₹ 16,60,610

   B. Sodium hydroxide ₹ 17,16,429 and Halogen ₹ 22,88,571

   C. Sodium hydroxide ₹ 22,88,571 and Halogen ₹ 17,16,429

   D. Sodium hydroxide ₹ 16,60,610 and Halogen ₹ 23,44,390

10. Considering that the decision relating to further processing Halogen is not approved, suggest whether this would be in favour of the management by calculating incremental revenue /loss from further processing Halogen into Vinyl.

    A. Incremental loss would be ₹ 16,02,000, thus the decision of not further processing Halogen is correct.

    B. Incremental loss would be ₹ 8,01,000, thus the decision of not further processing Halogen is correct.

C. Incremental revenue would be ₹ 8,01,000, thus the decision relating to further processing Halogen needs to be approved.

D. Incremental revenue would be ₹ 16,02,000, thus the decision relating to further processing Halogen needs to be approved. **(5 x 2 Marks)**

11. Mr. Ben is paid higher wages than Mr. Akon. Though their normal wage rate is same, Mr. Ben gets higher payment as under Halsey system than that to Mr. Akon as under Rowan System.

The total time allowed to make the same product is 75 hours, however, Mr. Ben takes 60 hours while Mr. Akon takes 45 hours.

The production of the product also involve other costs that are not traced directly to the product like salary to quality assurance manager, factory rent, supplies, salary to production supervisor, electricity consumed, etc. which comes to ₹ 2,26,800 leading to factory overhead rate being ₹ 120 per man-hour actually worked.

The total factory cost for the product produced by Mr. Akon comes to ₹ 1,25,640 and by Mr. Ben comes to ₹ 1,29,600.

From the information given above, COMPUTE the normal wage rate along with the cost of material.

A. Normal wage rate- ₹ 63 per hour and cost of material- ₹ 1,20,240

B. Normal wage rate- ₹ 67.5 per hour and cost of material- ₹ 1,22,400

C. Normal wage rate- ₹ 480 per hour and cost of material- ₹ 90,000

D. Normal wage rate- ₹ 450 per hour and cost of material- ₹ 87,840

(2 Marks)

12. WHICH of the following is the correct journal entry as would appear in the cost books when there is under recovery of overheads?

A. Cost of Sales A/c..... Dr. xxx
To Administrative Overhead Control A/c xxx

B. Production Overhead Control A/c.....Dr. xxx
To Work-in-Process Ledger Control A/c xxx

C. Costing Profit & Loss A/c.....Dr. xxx
To Administrative Overhead Control A/c xxx

D. Work-in-Process Ledger Control A/c.....Dr. xxx
To Production Overhead Control A/c xxx

(2 Marks)

13. Due to sudden rise in demand of the product, the sales of Arrow Ltd. for current year enhanced to 3 times the average of last 4 years. The Break even point and the variable cost of the company for the current year is ₹ 1,17,00,000 and 93,60,000 respectively.

The sales data relating to past years is given below:

Year	Sales (₹)
Year 1 (latest)	62,00,000
Year 2	50,00,000
Year 3	52,00,000
Year 4	44,00,000
Year 5	66,00,000

CALCULATE the fixed cost to the company for the current year.

A. ₹ 64,35,000

B. ₹ 48,12,453

C. ₹ 65,34,340

D. ₹ 46,80,000 **(2 Marks)**

14. Due to technical and economical reasons, F8 Ltd. manufactures in batch. The latest contract requires the company to supply 9,000 bushings per month to G4 Ltd. The company has estimated that each set up for manufacturing the bushings will cost ₹ 16,002.25 and the inventory holding cost per bushing per annum will come to ₹ 60.

HOW many runs the company need to make throughout the year to complete the demand?

A. 5 runs

B. 10 runs

C. 15 runs

D. 20 runs **(2 Marks)**

15. The Budgeted fixed overhead for the month of August was ₹ 75,00,000 with the units of production estimated at 15,000. However, the actual units produced is 15,600 with no Fixed overhead cost variance.

CALCULATE the actual fixed overhead incurred.

A. ₹ 75,00,000

B. ₹ 72,11,538

C. ₹ 78,00,000

D. ₹ 79,00,000 **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) Shanu 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:

(i) CALCULATE the variable overhead absorption rate per machine hour.

(ii) CALCULATE the estimated total fixed overheads.

(iii) CALCULATE the budgeted level of activity in machine hours.

(iv) CALCULATE the amount of under/over absorption of overheads if the actual machine hours were 14,970 and actual overheads were ₹ 3,22,000.

(v) STATE the arguments for and against using departmental absorption rates as opposed to a single or blanket factory wide rate.

(5 Marks)

(b) Following standards have been set for manufacturing a product 'XYZ':

Direct Material:	(₹)
4 units of X @ ₹ 8 per unit	32.00
6 units of Y @ ₹ 6 per unit	36.00
30 units of Z @ ₹ 2 per unit	60.00
	128.00
Direct Labour:	
6 hrs @ ₹ 16 per hour	96.00
Total standard prime cost	224.00

The company actually manufactured and sold 12,000 units of the product 'XYZ' during the year.

Direct material costs were as follows:

50,000 units of X at ₹ 8.80 per unit

72,000 units of Y at ₹ 5.60 per unit

354,000 units of Z at ₹ 2.40 per unit

The company worked 70,000 direct labour hours during the year. For 10,000 of these hours, the company paid at ₹ 24 per hour while for the remaining, the wages were paid at standard rate.

You are required to CALCULATE the following:

(i) Material Price Variance

(ii) Material Usage Variance

(iii) Labour Rate Variance

(iv) Labour Efficiency Variance **(5 Marks)**

(c) Shivi is working by employing 10 skilled workers. It is considering the introduction of some incentive scheme – either Halsey scheme (with 50% bonus) or Rowan scheme of wage payment for increasing the labour productivity to cope with the increased demand for the product by 25%. She feels that, if the proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers, it would act as sufficient incentive for them to produce more and she has accordingly given this assurance to the workers.

As a result of this assurance, the increase in productivity has been observed as revealed by the following figures for the current month:

Hourly rate of wages (guaranteed)	₹ 2.00
Average time for producing 1 piece by one worker at the previous performance (this may be taken as time allowed)	2 hours
Number of working days in the month	25
Number of working hours per day for each worker	8
Actual production during the month	1,250 units

Required:

(1) CALCULATE effective rate of earnings per hour under Halsey scheme and Rowan scheme.

(2) CALCULATE the savings of Navya in terms of direct labour cost per piece under the above schemes.

(3) ADVISE Navya about the selection of the scheme to fulfill her assurance **(4 Marks)**

2. (a) XYZ Constructions is a leading engineering and construction company providing a range of infrastructure and industrial services. Recently, they have been asked to quote for residential building construction (RBC) and industrial plant construction (IPC) projects. However, they are winning fewer RBC contracts than expected.

XYZ Constructions has a policy to price all jobs at budgeted total cost plus 50%. Overheads are currently absorbed on a labour-hour basis. The company believes that switching to activity-based costing (ABC)

to absorb overheads would reduce the costs associated with RBC and make them more competitive.

You are provided with the following data:

Overhead category	Annual Overhead (₹ Lakhs)	Activity driver	Total number of activities per year
Supervisors	₹120	Site visits	600
Project Planners	₹ 80	Planning documents	300
Property related	₹400	Labour hours	50,000
Total	**₹600**		

For a typical **RBC**: Material cost: ₹ 5 lakhs, Labour hours: 1,200 hours, Site visits: 2 visits, Planning documents: 2 documents

For a typical **IPC**: Material cost: ₹ 12 lakhs, Labour hours: 2,500 hours, Site visits: 10 visits, Planning documents: 8 documents

Labour is paid at **₹ 100 per hour**.

Required:

(a) CALCULATE the cost and quoted price of an RBC and an IPC using labour hours to absorb the overheads.

(b) CALCULATE the cost and quoted price of an RBC and an IPC using ABC to absorb the overheads.

(c) Assuming that the cost of an RBC falls by nearly 7% and the price of an IPC rises by about 2% as a result of the change to ABC, SUGGEST possible pricing strategies for the two services offered by XYZ Constructions. Additionally, suggest two reasons other than high prices for the current poor sales of RBC. **(10 Marks)**

(b) "Calculation of variances in standard costing is not an end in itself, but a means to an end." DISCUSS. **(4 Marks)**

3. (a) The following are the details in respect of Process A and Process B of a processing factory:

	Process A (₹)	Process B (₹)
Materials	40,000	--
Labour	40,000	56,000
Overheads	16,000	40,000

The output of Process A is transferred to Process B at a price calculated to give a profit of 20% on the transfer price and the output of Process B is charged to finished stock at a profit of 25% on the transfer price. The finished stock department realized ₹ 4,00,000 for the finished goods received from Process B.

You are asked to SHOW process accounts and total profit, assuming that there was no opening or closing work-in-progress. **(6 Marks)**

(b) From the following data CALCULATE (i) Administration cost, (ii) Selling cost and (iii) Distribution cost:

		Amount (₹)
(i)	Rent paid for factory building	96,000
(ii)	Salary paid to office staffs	8,20,000
(iii)	Fees paid to auditors	92,000
(iv)	Salary paid to sales manager	8,00,000
(v)	Vehicle hire charges paid for directors attending general meeting	10,200
(vi)	Wages paid to workers engaged in storing goods at sales depot	7,200
(vii)	Travelling allowance paid to sales staffs	9,600
(viii)	Cost paid for secondary packing	8,200
(ix)	Electricity bill paid for sales office	1,800
(x)	Depreciation on goods delivery vehicles	13,000
(xi)	Bonus paid to sales staffs for achieving targets	96,000
(xii)	Fees paid to independent directors	1,02,000

(6 Marks)

(c) STI is majorly providing education loan in its loan department. For the month of August, salary paid to the education loan processors is ₹ 21,60,000. W.r.t. overhead cost, 30% is applicable to the processing of education loan out of the total overhead cost of loan department.

The total overhead cost for the month of August is ₹ 16,40,000 which includes payment of ₹ 11,000 w.r.t. legal advice relating to one of the education loan processing.

The education loan applications processed during this month are 500. You are required to COMPUTE the cost of processing per education loan application. **(2 Marks)**

4. (a) Following information is available from the purchase books of a company:

Cost of placing a purchase order	₹ 10,000
Number of units to be purchased during the year	12,50,000
Purchase price per unit	₹ 125
Annual cost of storage per unit	₹ 62.50

Details of lead time:

Maximum	20 days
Minimum	10 days

Average	15 days
Emergency	3 days

Rate of consumption:

Average	1,500 units per day
Maximum	2,000 units per day

From the details given above, you are required to CALCULATE:

(i) Re-ordering level

(ii) Maximum level

(iii) Minimum level

(iv) Danger level **(6 Marks)**

(b) Idle time is the time during which no production is carried-out because the worker remains idle but are paid. It can be normal or abnormal. LIST OUT some of the causes/examples of normal and abnormal idle time. **(4 Marks)**

(c) Following information is available as per the cost accounts of a company for the year ended 31st March:

Particulars	**Amount (₹)**
Profit	7,77,150
Factory expenses under-charged	2,35,500
Administrative expenses under-charged	1,17,750
Selling & distribution expenses under-charged	31,400
Income from interest and dividends (not adjusted in cost statement)	2,35,500

You are required to PREPARE a reconciliation statement to ascertain Profit as per Financial Accounts. **(4 Marks)**

5. (a) A Korean beverage company plans to set up a subsidiary in India to manufacture fruit juice. Based on projected annual sales of 40,000 bottles, cost analysis has provided the following estimates for the Indian subsidiary:

	Total Annual Costs (₹)	**Percentage of Total Annual Cost which is Variable**
Material	3,15,000	100%
Labour	1,40,000	75%
Factory Overheads	1,35,000	50%
Administrative Overheads	50,000	35%

The fruit juice produced in India will be sold through manufacturer's representatives, who will earn a commission of 10% of the sales price.

Expenses from the Korean office will not be allocated to the Indian subsidiary.

Required

(i) COMPUTE the sale price per bottle to enable the management to realise an estimated 10% profit on sale proceeds in India.

(ii) CALCULATE the break-even point in Rupee sales and also in number of bottles for the Indian subsidiary on the assumption that the sale price is ₹ 19 per bottle. **(8 Marks)**

(b) C 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 paid, 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 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.

(6 Marks)

6. (a) As a consultant hired by a manufacturing company, HOW would you go about assessing the critical factors for designing and implementing a cost accounting system? **(5 Marks)**

(b) As a consultant, a client has approached you to set up a budgetary control system in their organization. WHAT sequential steps would you follow to design, implement, and monitor the system? **(5 Marks)**

(c) You are managing the inventory for a manufacturing company and notice that certain items in the store are not being utilized frequently, leading to increased holding costs. HOW would you identify slow-moving and non-moving items, and WHAT strategies would you implement to minimize such stocks effectively? **(4 Marks)**

OR

(d) DISCUSS in brief three main methods of allocating support departments costs to operating departments. **(4 Marks)**

MODEL TEST PAPER 8

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Answers are to be given only in English except in the case of the candidates who have opted for Hindi medium. If a candidate has not opted for Hindi medium his/ her answer in Hindi will not be valued.

Working notes should form part of the answer.

Time Allowed – 3 Hours **Maximum Marks – 100**

1. *The question paper comprises two parts, Part I and Part II.*
2. *Part I comprises Case Scenario based Multiple Choice Questions (MCQs) for 30 marks*
3. *Part II comprises questions which require descriptive type answers for 70 marks.*

PART I – Case Scenario based MCQs

Part I is compulsory.

Write the most appropriate answer to each of the following multiple-choice questions by choosing one of the four options given. All questions are compulsory.

1. The purchase committee of A Ltd. has been entrusted to review the material procurement policy of the company. The chief marketing manager has appraised the committee that the company at present produces a single product X by using two raw materials A and B in the ratio of 3:2. Material A is perishable in nature and has to be used within 10 days from Goods received note (GRN) date otherwise material becomes obsolete. Material B is durable in nature and can be used even after one year. Material A is purchased from the local market within 1 to 2 days of placing order. Material B, on the other hand, is purchased from neighbouring state and it takes 2 to 4 days to receive the material in the store.

   The purchase price of per kilogram of raw material A and B is ₹30 and ₹44 respectively exclusive of taxes. To place an order, the company has to incur an administrative cost of ₹1,200. Carrying cost for Material A and B is 15% and 5% respectively. At present material A is purchased in a lot of 15,000 kg. to avail 10% discount on market price. GST applicable for both the materials is 18% and the input tax credit is availed.

   The sales department has provided an estimate that the company could sell 30,000 kg. in January 2024 and also projected the same trend for the entire year.

   The ratio of input and output is 5:3. Company works for 25 days in a month and production is carried out evenly.

   The following queries/ calculations to be kept ready for purchase committees' reference:

(i) For the month of January 2024, what would be the quantity of the materials to be requisitioned for both material A and B:

(a) 9,000 kg & 6,000 kg respectively

(b) 18,000 kg & 12,000 kg respectively

(c) 27,000 kg & 18,000 kg respectively

(d) 30,000 kg & 20,000 kg respectively.

(ii) The economic order quantity (EOQ) for both the material A & B:

(a) 13,856 kg & 16,181 kg respectively

(b) 16,197 kg & 17,327 kg respectively

(c) 16,181 kg & 17,165 kg respectively

(d) 13,197 kg & 17,165 kg respectively

(iii) What would the maximum stock level for material A:

(a) 18,200 kg.

(b) 12,000 kg.

(c) 16,000 kg.

(d) 16,200 kg.

(iv) Calculate saving/ loss in purchase of Material A if the purchase order quantity is equal to EOQ.

(a) Profit of ₹ 3,21,201.

(b) Loss of ₹ 3,21,201.

(c) Profit of ₹ 2,52,500.

(d) Loss of ₹ 2,52,500.

(v) What would the minimum stock level for material A:

(a) 1,800 kg.

(b) 1,200 kg.

(c) 600 kg.

(d) 2,400 kg. **(5 x 2 = 10 Marks)**

2. During half year ending inter departmental review meeting of P Ltd., cost variance report was discussed and the performance of the departments were assessed. The following figures were presented.

For a period of first six months of the financial year, following information were extracted from the books:

Actual production overheads	₹ 34,08,000
The above amount is inclusive of the following payments made:	
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 for the six months are as under:

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

Machine worked during the period was 3,000 hours.

At the of preparation of revenue budget, it was estimated that a total of ₹50,40,000 would be required for budgeted machine hours of 6,000 as production overheads for the entire year.

During the meeting, a data analytic report revealed that 40% of the over/under-absorption was due to defective production policies and the balance was attributable to increase in costs.

You were also present at the meeting; the chairperson of the meeting has asked you to be ready with the followings for the performance appraisal of the departmental heads:

(i) How much was the budgeted machine hour rate used to recover overhead?

(a) ₹ 760

(b) ₹ 820

(c) ₹ 780

(d) ₹ 840

(ii) How much amount of production overhead has been recovered (absorbed) upto the end of half year end?

(a) ₹ 25,20,000

(b) ₹ 34,08,000

(c) ₹ 24,00,000

(d) ₹ 24,60,000

(iii) What is the amount of overhead under/ over absorbed?

(a) 1,18,000 over-absorbed

(b) 1,18,000 under- absorbed

(c) 18,000 over-absorbed

(d) 18,000 under-absorbed

(iv) What is the supplementary rate for apportionment of over absorbed overheads over WIP, Finished goods and Cost of sales?

(a) ₹ 0.315 per unit

(b) ₹ 0.472 per unit

(c) ₹ 0.787 per unit

(d) ₹ 1 per unit

(v) What is the amount of over absorbed overhead apportioned to Work in Progress?

(a) ₹ 9,440

(b) ₹ 42,480

(c) ₹ 18,880

(d) ₹ 70,800 **(5 x 2 = 10 Marks)**

3. The following details are given to you:

Raw materials consumed	2,40,000
Factory overheads	3/4 of direct wages
Quality control cost and research and development cost	20% of factory cost
Cost of production	7,50,000

The amount of direct wages will be:

(a) 2,50,000

(b) 2,20,000

(c) 2,00,000

(d) 3,00,000 **(2 Marks)**

4. A hotel having 200 rooms of which 80% are normally occupied in summer 60% in Autumn and 25% in winter. Period of summer, autumn and winter be taken as 4 months each and normal days in a month be assumed to be 30. The total occupied room days will be

(a) 39,200 Room days

(b) 39,600 Room days

(c) 39,000 Room days

(d) 38,000 Room days **(2 Marks)**

5. The following figures are extracted from the books of a company:

Budgeted overheads ₹20,000 (Fixed ₹12,000, Variable ₹8,000)

Budgeted output 2,500 units

Actual Overheads ₹21,800 (Fixed ₹11,800, Variable ₹10,000)

Actual output 3,000

Variable Overheads and fixed overheads cost variance will be:

(a) 400 (A) and 2600 (F)

(b) 400 (A) and 200 (F)

(c) 2,000 (A) and 200 (F)

(d) 2,000 (F) and 200 (A) **(2 Marks)**

6. In a particular process 28,000 units are introduced during a period. 5% of input is normal loss. Closing work in progress 60% complete is 2,600 units. 24,000 completed units are transferred to next process. Equivalent production for the period is:

(a) 25,040 units

(b) 28,000 units

(c) 25,560 units

(d) 24,000 units **(2 Marks)**

7. If final sales are ₹ 50,000 and separable costs are ₹ 35,000, then net realizable value will be

(a) 15,000

(b) 85,000

(c) 35,000

(d) 50,000 **(2 Marks)**

PART-II – Descriptive Questions (70 Marks)

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

1. (a) Interio Ltd. manufactures quality furniture to customers' order. It has three production departments A, B and C which have overhead absorption rates (per direct labour hour) of ₹12.86, ₹12.40 and ₹14.03 respectively.

Two pieces of furniture are to be manufactured for customer. Direct costs are as follows:

	Job -XYZ	Job- MNO
Direct material (₹)	15,400	10,800
Direct labour		
Dept.-A @ ₹ 76/ hour	20 hours	16 hours
Dept.-B @ ₹ 70/ hour	12 hours	10 hours
Dept.-C @ ₹ 68/ 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.

(5 Marks)

(b) From the following data CALCULATE (i) Administration cost, (ii) Selling cost and (iii) Distribution cost:

		Amount (₹)
(i)	Rent paid for factory building	96,000
(ii)	Salary paid to office staffs	8,20,000
(iii)	Fees paid to auditors	92,000
(iv)	Salary paid to sales manager	8,00,000
(v)	Vehicle hire charges paid for directors attending general meeting	10,200
(vi)	Wages paid to workers engaged in storing goods at sales depot	7,200
(vii)	Travelling allowance paid to sales staffs	9,600
(viii)	Cost paid for secondary packing	8,200
(ix)	Electricity bill paid for sales office	1,800
(x)	Depreciation on goods delivery vehicles	13,000
(xi)	Bonus paid to sales staffs for achieving targets	96,000
(xii)	Fees paid to independent directors	1,02,000

(5 Marks)

(c) CALCULATE the labour turnover rate by applying:

(i) Separation method

(ii) Replacement method

(iii) Flux method

Number of workers on payroll

At the beginning of the month 1,900

At the end of the month 2,250

During the month 29 workers left, 85 workers were discharged and 480 workers were recruited. Of these 90 workers were recruited in the vacancies of those separated, while the rest were engaged due to expansion. **(4 Marks)**

2. (a) Aviation Ltd. manufactures a range of products and the data below refer to one product which goes through one process only. The company operates a thirteen four-weekly reporting system for process and product costs and the data given below relate to period 2011.

There was no opening work-in-progress stock.

50,000 units of materials input at ₹ 2.94 per unit entered the process.

Further direct materials added	1,38,300
Direct wages incurred	65,550
Production overhead	74,700
Normal loss is 3% of input.	

Closing work-in-progress was 8,000 units but these were incomplete, having reached the following percentages of completion for each of the elements of cost listed.

	%
Direct materials added	75
Direct wages	50
Production overhead	25

2700 units were scrapped after a quality control check when the units were at the following degrees of completion.

	%
Direct materials added	66.67% or 66.⅔%
Direct wages	33.⅓ or 33.33%
Production overhead	16⅔% or 16.67%

Units scrapped, regardless of the degree of completion, are sold for ₹ 1 each and it is company policy to credit the process account with the scrap value of normal loss units.

You are required to PREPARE the Period 2023 accounts for the: (i) process account; and (ii) abnormal gain or loss. **(8 Marks)**

(b) The following standards have been set to manufacture a product:

Direct materials:	₹
2 units of P at ₹ 4 per unit	8.00
3 units of Q at ₹ 3 per unit	9.00
15 units of R at ₹ 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 P at ₹ 4.40 per unit

18,000 units of Q at ₹ 2.80 per unit

88,500 units of R at ₹ 1.20 per unit

The company worked 17,500 direct labour hours during the year. For 2,500 of theses hours the company paid at ₹ 12 per hour while for the remaining the wages were paid at the standard rate.

CALCULATE material price, usage variances, labour rate, and efficiency variances. **(6 Marks)**

3. (a) Tetra Automobiles assembles and sells motor vehicles. It uses an actual costing system, in which unit cost are calculated on a monthly basis. Data relating to May and June 2011 are

	May	June
	Units	*Units*
Beginning Inventory	0	35
Production	240	260
Sales	205	260
Variable-cost:	₹	₹
Manufacturing Costs per Unit Produced	40,000	40,000
Distribution cost per unit sold	4,000	4,000
Fixed-cost:		
Manufacturing Costs	32,00,000	32,00,000
Marketing Costs	6,00,000	6,00,000
The selling price per motor vehicle is	59,000	59,000

Required

(i) PRESENT income statement for Tetra Automobiles in May and June under:

(a) Marginal Costing

(b) Absorption Costing

(ii) EXPLAIN the differences between (a) and (b) **(6 + 2 Marks)**

(b) EXPLAIN the difference in Profit under Marginal and Absorption costing in different circumstances. **(4 Marks)**

(c) LIST the Financial expenses which are not included in cost. **(2 Marks)**

4. (a) As on 31st March,2023 the following balances existed in a firm's Cost Ledger :

	Dr.	*Cr.*
	₹	*₹*
Stores Ledger Control A/c	3,00,000	
Work-in-Progress Control A/c	1,20,000	
Finished Stock Ledger Control A/c	2,50,000	
Manufacturing Overhead Control A/c		10,000
Cost Ledger Control A/c	_____	6,60,000
	6,70,000	6,70,000

During the next three months the following items arose:

	₹
Finished product (at cost)	2,10,000
Manufacturing overhead incurred	90,000
Raw materials purchased	1,23,000
Factory Wages	50,000
Indirect Labour	21,000
Cost of Sales	1,85,000
Material issued to production	1,27,000
Sales returned at Cost	5,000
Material returned to suppliers	3,000
Manufacturing overhead charged to production	77,000

You are required to PASS Journal Entries. **(5 Marks)**

(b) BABYSOFT is a global brand created by Bio-organic Ltd. The company manufactures three range of beauty soaps i.e. BABYSOFT- Gold, BABYSOFT- Pearl, and BABYSOFT- Diamond. The budgeted costs and production for the month of December, 2023 are as follows:

	BABYSOFT- Gold		**BABYSOFT- Pearl**		**BABYSOFT- Diamond**	
Production of soaps (Units)	**4,000**		**3,000**		**2,000**	
Resources per Unit:	**Quantity**	**Rate**	**Quantity**	**Rate**	**Quantity**	**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	₹ 15 / 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 to adopt an Activity Based Costing system. For this, additional information regarding budgeted overheads and their cost drivers is provided below:

Particulars	(₹)	Cost drivers
Forklifting cost	58,000	Weight of material lifted

Supervising cost	60,000	Direct labour hours
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 .8 kg and 1 kg respectively (ii) Mass of output product 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 **(9 Marks)**

5. (a) A department of ABC Ltd. attains sales of ₹9,60,000 at 80% of its normal capacity. Its expenses are given below:

	₹	*Selling Costs :*	
Office salaries	1,10,000	Salaries	6% of sales
General expenses	2% of sales	Travelling expenses	5% of sales
Depreciation	6,200	Sales office	2% of sales
Rent and rates	9,750	General expenses	1% of sales
Distribution costs:			
Wages	2% of sales		
Rent	1% of sales		
Other expenses	6% 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. **(8 Marks)**

(b) Akruti Health Center consists of 20 beds. Health centre remains open for 300 days in a year. For the year ended 31st March 2023, the health centre was occupied at full capacity for 200 days and at 80% of the capacity for the remaining days.

Below are the details of the expenditure:

Rent for the premises	₹ 15,000/- per month
Repair & Maintenance	₹ 10,000/-
Food supplied to patients	₹ 72/- per patient per day
Laundry charges	₹ 30/- per patient per day
Medicines	₹ 60/- per patient per day
Administrative expenses	₹ 72,000/-

Salary to two supervisor s	₹ 2000 p.m. for each.
Salary to four nurses	₹ 1,500 p.m. for each
Salary to two ward boys	₹ 1,200 p.m. for each

Expert doctors were called from the outside to visit the patients. Expert doctors were paid ₹ 250 for each patient visited by them.

From the above information CALCULATE fee that Health centre should have been charged to per patient per day to earn a profit of 75% on fees charged. **(6 Marks)**

6. (a) DISTINGUISH between fixed and flexible budget. **(5 Marks)**

(b) WRITE short notes on Scope of Cost Reduction **(5 Marks)**

(c) DISTINGUISH between Job costing and Batch costing. **(4 Marks)**

OR

(d) WHAT do you mean by time and motion study? WHY is it so important to management? **(4 Marks)**

ANSWERS

ANSWER OF MODEL TEST PAPER 1

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. i. D

Inflow into process	Litres	Outflow from process	Litres
Opening WIP	500	Transferred to finished goods	3,400
Quantity introduced (Balancing figure)	3,800	Total loss	800
		Closing WIP	100
	4,300		4,300

ii. A

Total loss	800 litres
Normal loss (10% of fresh input i.e. 3,800)	380 litres
Abnormal loss	420 litres

iii. B

Calculation of Equivalent production units

Input Details	Units	Output Particulars	Units	Equivalent Production					
				Material		Labour		Overheads	
				%	Units	%	Units	%	Units
Opening WIP	500	From Opening WIP	500	-	-	20	100	40	200
Fresh inputs	3,800	From fresh units	2900	100	2900	100	2900	100	2900
		Normal loss	380	-		-		-	
		Closing WIP	100	100	100	20	20	10	10
		Abnormal loss	420	100	420	100	420	100	420
	4,300		4,300		3,420		3,440		3,530

Value of raw materials introduced during the month

	Equivalent units	Cost per EU (₹)	Total cost (₹)
Total value of raw material	3420	300	10,26,000
Add: Scrap value of normal loss	380	20	7,600
Value of raw material introduced			**10,33,600**

iv. A

Value of labour and overhead in closing Work in process

Cost elements	Equivalent units	Cost per EU (₹)	Total cost (₹)
Labour	20	200	**4,000**
Overheads	10	160	**1,600**

v. C

Value of output transferred to finished goods

Output transferred (Units) × Equivalent cost per unit

3,400 Litres × ₹660 = ₹22,44,000

2. i. D

ii. C Please refer cost sheet below for cost of production

Cost of production per manshift =

Cost of production ÷ Total manshift

₹ 7,87,28,000 ÷ 46,800 = ₹1,682.22

iii. A Car hire charges including GST @5%, please refer the cost sheet

iv. B Selling and distribution cost includes the following:

Maintenance cost for weighing bridge	12,000
AMC cost of CCTV installed at weigh bridge	8,000
TA/ DA & hotel bill of sales manager	36,000
	56,000

For Cost of Sale please refer the cost sheet

v. A Manshift = 1,800 employees × 26 days = 46,800 manshifts

Computation of earnings per manshift (EMS):

$$\text{EMS} = \frac{\text{Total employee benefits paid}}{\text{Manshift}}$$

$$= \frac{₹\ 7,04,20,000}{46,800} = ₹\ 1504.70$$

Computation of Output per manshift (OMS):

$$\text{OMS} = \frac{\text{Total Output/ Production}}{\text{Manshift}}$$

$$= \frac{2,34,000\ \text{Tonne}}{46,800} = 5\ \text{tonnes}$$

Workings

Cost Sheet of M Ltd. for the last month

Particulars	Amount (₹)	Amount (₹)
Materials consumed		50,00,000
Wages & Salary	6,40,00,000	
Gratuity & leave encashment	64,20,000	7,04,20,000
Power cost (13,000 kwh × ₹8)	1,04,000	
Diesel cost (2,000 ltr × ₹93)	1,86,000	2,90,000
HEMM hiring charges		30,00,000
Prime Cost		**7,87,10,000**
AMC cost of CCTV installed at factory premises		18,000
Cost of Production/ Cost of Goods Sold		**7,87,28,000**
Hiring charges of cars	66,000	
Reimbursement of diesel cost	22,000	
	88,000	
Add: GST @5% on RCM basis	4,400	92,400
Maintenance cost for weighing bridge	12,000	
AMC cost of CCTV installed at weigh bridge	8,000	20,000
TA/ DA & hotel bill of sales manager		36,000
Cost of Sales		**7,88,76,400**

3. D Labour rate variance = Standard time for actual production (SR- AR)

7,500 (A) = (30,000 × 30 minutes/60 minutes) × (50-AR)

AR = (7,50,000 + 7,500)/15,000 = ₹50.50 per hour

Actual wages per unit = 50.50/2 = ₹25.25

4. B Variable overhead for each % of level of activity

$=\frac{40,00,000-30,00,000}{75-50}$ = 40,000

Fixed cost = 30,00,000 – (40,000 × 50) = 10,00,000

Total overheads for 60% level of activity

= 10,00,000 + (40,000 × 60) = 34,00,000

5. C

6. B Actual Overhead – (Actual machine hours × machine hour rate)

5,20,000 – (17040 × 30) = 8,800 under absorbed

7. A Optimum batch size or Economic Batch Quantity (EBQ):

EBQ $= \sqrt{\frac{2DS}{C}} = \sqrt{\frac{2 \times 80,000 \times 3,500}{12}}$ = 6,832 units.

Number of Optimum runs = 80,000 ÷ 6,832 = 11.70 or 12 run

PART-II

1. (a) (i) Production Budget (in units) for the year ended 31st March 2025

	Product X	Product Y
Budgeted sales (units)	28,000	13,000
Add: Increase in closing stock	320	160
No. good units to be produced	28,320	13,160
Post production rejection rate	4%	6%
No. of units to be produced	29,500 $\left(\frac{28,320}{0.96}\right)$	14,000 $\left(\frac{13,160}{0.94}\right)$

(ii) Calculation of Economic Order Quantity for Material Z

EOQ $= \sqrt{\frac{2 \times 2,52,310 \times 15,600}{72 \times 11\%}} = \sqrt{\frac{5,04,620 \times 15,600}{72 \times 11\%}}$ = 31,526.95 kg.

(b) Purchase budget (in kgs and value) for Material Z

	Product X	Product Y
No. of units to be produced	29,500	14,000
Usage of Material Z per unit of production	5 kg.	6 kg.
Material needed for production	1,47,500 kg.	84,000 kg.
Materials to be purchased	1,63,889 kg. $\left(\frac{1,47,500}{0.90}\right)$	88,421 kg. $\left(\frac{84,000}{0.95}\right)$
Total quantity to be purchased	2,52,310 kg.	
Rate per kg. of Material Z	₹72	
Total purchase price	₹1,81,66,320	

(c) Since, the maximum number of orders per year cannot be more than 40 orders and the maximum quantity per order that can be purchased is 4,000 kg. Hence, the total quantity of Material Z that can be available for production:

= 4,000 kg. × 40 orders =1,60,000 kg.

	Product X	Product Y
Material needed for production to maintain the same production mix	1,03,929 kg. $\left(1,60,000 \times \frac{1,63,889}{2,52,310}\right)$	56,071 kg. $\left(1,60,000 \times \frac{88,421}{2,52,310}\right)$

Less: Process wastage	10,393 kg.	2,804 kg.
Net Material available for production	93,536 kg.	53,267 kg.
Units to be produced	18,707 units $\left(\frac{93,536\,kg.}{5\,kg.}\right)$	8,878 units $\left(\frac{53,267\,kg.}{6\,kg.}\right)$

2. (a) (i) Calculation of Absolute Ton-km for the next month:

Journey	Distance in km	Weight-Up (in MT)	Ton-km	Weight-Down (in MT)	Ton-km	Total
	(a)	(b)	(c)=(a)×(b)	(d)	(e)=(a)×(d)	(c)+(e)
Delhi to Kochi	2,700	14	37,800	6	16,200	54,000
Delhi to Guwahati	1,890	12	22,680	0	0	22,680
Delhi to Vijayawada	1,840	15	27,600	0	0	27,600
Delhi to Varanasi	815	10	8,150	0	0	8,150
Delhi to Asansol	1,280	12	15,360	4	5,120	20,480
Delhi to Chennai	2,185	10	21,850	8	17,480	39,330
Total	10,710	73	1,33,440	18	38,800	1,72,240

Total Ton-Km = 1,72,240 ton-km

(ii) Calculation of cost per ton-km:

Particulars		Amount (₹)	Amount (₹)
A.	Running cost:		
	- Diesel Cost {₹19.20 × (10,710 × 2)}	4,11,264.00	
	- Engine oil cost $\left(\frac{₹4,200}{13,000\,km}\times 21,420\,km\right)$	6,920.31	
	- Cost of loading of goods {₹180 × (73+18)}	16,380.00	
	- Depreciation {(30,00,000/720,000×21,420 km)×4}	3,57,000.00	7,91,564.31
B.	Repairs & Maintenance Cost (36,000/10,000×21,420)		77,112.00
C.	Standing Charges		

- Drivers' salary (₹24,000 × 4 trucks)	96,000.00	
- Cleaners' salary (₹15,000 × 4 trucks)	60,000.00	
- Supervision and other general exp.	14,000.00	1,70,000.00
Total Cost (A + B + C)		10,38,676.31
Total ton-km		1,72,240
Cost per ton-km		6.03

(b) Calculation of cost per unit:

Particulars	**Units**	**(₹)**
Listed Price of Materials	5,000	5,00,000
Less: Trade discount @ 10% on invoice price		(50,000)
		4,50,000
Add: GST @18% of ₹ 4,50,000		81,000
		5,31,000
Add: Toll Tax		1,800
Freight and Insurance		36,000
Commission and Brokerage Paid		10,000
Add: Cost of returnable containers:		
Amount deposited ₹ 30,000		
Less: Amount refunded ₹ 26,000		4,000
		5,82,800
Add: Other Expenses @ 2% of Total Cost $\left(\frac{₹\ 5,82,800}{98} \times 2\right)$		11,894
Total cost of material		5,94,694
Less: Shortage material due to normal reasons @ 5%	250	-
Total cost of material of good units	4,750	5,94,694
Cost per unit (₹ 5,94,694/4,750 units)		**125.20**

Note:

1. GST is payable on net price i.e., listed price less discount.
2. GST paid on purchase is added with cost as ITC on GST cannot be claimed
3. Cash discount is treated as interest and finance item; hence it is ignored.
4. Demurrage is penalty imposed by the transporter for delay in uploading or off-loading of materials. It is an abnormal cost and not included.

5. Shortage due to normal reasons should not be deducted from cost to ascertain total cost of good units.

3. (a) The important ledgers to be maintained under non-integrated accounting system in the Cost Accounting are the followings:

(a) **Cost Ledger** - This is the principle ledger of the cost department in which impersonal accounts are recorded. This ledger is made self-balancing by maintaining therein a Control Account for each subsidiary ledger.

(b) **Stores Ledger** - It contains an account for each item of stores. The entries in each account maintained in this ledger are made from the invoice, goods received note, material requisitions, material received note etc. Accounts in respect of each item of stores show receipt, issue and balance in physical as well as in monetary terms.

(c) **Work-in-Process Ledger** - This ledger is also known as job ledger, it contains accounts of unfinished jobs and processes. All material costs, wages and overheads for each job in process are posted to the respective job accounts in this ledger. The balance in a job account represents total balance of job/work-in-process, as shown by the job account.

(d) **Finished Goods Ledger** - It contains an account for each item of finished product manufactured or the completed job. If the finished product is transferred to stock, a credit entry is made in the work-in-process ledger and a corresponding debit entry is made in this ledger.

(b) (i) Computation of wages of each worker under guaranteed hourly rate basis

Worker	Actual hours worked (Hours)	Hourly wage rate (₹)	Wages (₹)
I	380	40	15,200
II	100	50	5,000
III	540	60	32,400

(ii) Computation of Wages of each worker under piece work earning basis

Product	Piece rate per unit (₹)	Worker-I		Worker-II		Worker-III	
		Units	Wages (₹)	Units	Wages (₹)	Units	Wages (₹)
X	15	210	3,150	-	-	600	9,000
Y	20	360	7,200	-	-	1,350	27,000
Z	30	460	13,800	250	7,500	-	-
Total			24,150		7,500		36,000

Since each worker's earnings are more than 50% of basic pay. Therefore, worker-I, II and III will be paid the wages as computed i.e. ₹24,150, ₹7,500 and ₹36,000 respectively.

Working Notes:

1. Piece rate per unit

Product	Standard time per unit in minute	Piece rate each minute (₹)	Piece rate per unit (₹)
X	15	1	15
Y	20	1	20
Z	30	1	30

2. Time allowed to each worker

Worker	Product-X	Product-Y	Product-Z	Total Time (Hours)
I	210 units × 15 = 3,150	360 units × 20 = 7,200	460 units × 30 = 13,800	24,150/60 = 402.50
II	-	-	250 units × 30 = 7,500	7,500/60 = 125
III	600 units × 15 = 9,000	1, 350 units × 20 = 27,000	-	36,000/60 = 600

(iii) Computation of wages of each worker under Premium bonus basis (where each worker receives bonus based on Rowan Scheme)

Worker	Time Allowed (Hr.)	Time Taken (Hr.)	Time saved (Hr.)	Wage Rate per hour (₹)	Earnings (₹)	Bonus (₹)*	Total Earning (₹)
I	402.5	380	22.5	40	15,200	850	16,050
II	125	100	25	50	5,000	1,000	6,000
III	600	540	60	60	32,400	3,240	35,640

* $\frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Wage Rate}$

Worker-I = $\frac{380}{402.5} \times 22.5 \times 40 = 850$; Worker-II = $\frac{100}{125} \times 25 \times 50 = 1,000$

Worker-III = $\frac{540}{600} \times 60 \times 60 = 3,240$

4. (a) (i) Statement of Profit under Absorption Costing

Particulars		April (₹)	May (₹)	June (₹)
Sales (units)		4,200	4,500	5,200
Selling price per unit		2,050	2,050	2,050
Sales value	(A)	86,10,000	92,25,000	1,06,60,000
Cost of Goods Sold:				
Opening Stock @ ₹1,480		0	5,92,000	4,44,000
Production cost @ ₹1,480		68,08,000	65,12,000	81,40,000
Closing Stock @ ₹1,480		(5,92,000)	(4,44,000)	(8,88,000)
Under/ (Over) absorption		40,000	60,000	(50,000)
Add: Fixed Selling Overheads		95,000	95,000	95,000
Cost of Sales	(B)	63,51,000	68,15,000	77,41,000
Profit	(A – B)	22,59,000	24,10,000	29,19,000

Workings:

1. Calculation of full production cost

	(₹)
Direct Materials (4 kg. × ₹ 120)	480
Direct labour (6 hours × ₹ 60)	360
Variable production Overhead (150% of ₹ 360)	540
Total Variable cost	1,380
Fixed production overhead $\left(\frac{₹60,00,000}{60,000\ units}\right)$	100
	1,480

2. Calculation of Opening and Closing stock

	April	May	June
Opening Stock	0	400	300
Add: Production	4,600	4,400	5,500
Less: Sales	4,200	4,500	5,200
Closing Stock	400	300	600

3. Calculation of Under/Over absorption of fixed production overhead

	April (₹)	May (₹)	June (₹)
Actual Overhead	5,00,000	5,00,000	5,00,000
Overhead absorbed	4,60,000 (4,600 units × ₹100)	4,40,000 (4,400 units × ₹100)	5,50,000 (5,500 units × ₹100)

Under/(Over) absorption	40,000	60,000	(50,000)

(ii) Statement of Profit under Marginal Costing

Particulars	April (₹)	May (₹)	June (₹)
Sales (units)	4,200	4,500	5,200
Selling price per unit	2,050	2,050	2,050
Sales value	86,10,000	92,25,000	1,06,60,000
Less: Variable production cost @ ₹1,380	57,96,000	62,10,000	71,76,000
Contribution	28,14,000	30,15,000	34,84,000
Less: Fixed Production Overheads	5,00,000	5,00,000	5,00,000
Less: Fixed Selling Overheads	95,000	95,000	95,000
Profit	22,19,000	24,20,000	28,89,000

(iii) Reconciliation of profit under Absorption costing to Marginal Costing

Particulars	April (₹)	May (₹)	June (₹)
Profit under Absorption Costing	22,59,000	24,10,000	29,19,000
Add: Opening Stock	0	40,000 (400 × ₹100)	30,000 (300 × ₹100)
Less: Closing Stock	40,000 (400 × ₹100)	30,000 (300 × ₹100)	60,000 (600 × ₹100)
Profit under Marginal Costing	22,19,000	24,20,000	28,89,000

(b) Total Fixed Cost = ₹ 6,00,000 + ₹20,00,000 + ₹8,00,000 + ₹ 2,00,000

= ₹ 36,00,000

Contribution per unit = ₹600 - ₹470 = ₹130

P/V Ratio $= \frac{\text{Contribution per unit}}{\text{Selling Price}} \times 100 = \frac{₹130}{₹600} \times 100 = 21.67\%$

Break-even Point $= \frac{\text{Total Fixed Cost}}{\text{Contribution per unit}}$

$= \frac{₹36,00,000}{₹130} = 27,692.31$ or 27,693 units

Break-even Sales $= \frac{\text{Total Fixed Cost}}{\text{P/V Ratio}} = \frac{₹36,00,000}{21.67\%} = ₹1,66,12,829$

Calculation of Profit/ (loss):

Total Contribution (₹130 × 35,000 units) = ₹45,50,000

Less: Fixed Cost = ₹36,00,000

Profit = ₹ 9,50,000

5. (a) Budgeted Production 30,000 hours ÷ 6 hours per unit = 5,000 units

Budgeted Fixed Overhead Rate = ₹ 4,50,000 ÷ 5,000 units = ₹ 90 per unit Or

= ₹ 4,50,000 ÷ 30,000 hours = ₹ 15 per hour.

(i) Material Cost Variance = (Std. Qty. × Std. Price) – (Actual Qty. × Actual Price)

= (4,800 units × 15 kg. × ₹15) - ₹ 9,85,000

= ₹ 10,80,000 – ₹ 9,85,000

= ₹ 95,000 (F)

(ii) Labour Cost Variance = (Std. Hours × Std. Rate) – (Actual Hours × Actual rate)

= (4,800 units × 6 hours × ₹ 5) – ₹1,40,000

= ₹ 1,44,000 – ₹ 1,40,000

= ₹ 4,000 (F)

(iii) Fixed Overhead Cost Variance = (Budgeted Rate × Actual Qty) – Actual Overhead

= (₹ 90 x 4,800 units) – ₹ 4,70,000

= ₹ 38,000 (A)

OR

= (Budgeted Rate × Std. Hours) – Actual Overhead

= (₹ 15 x 4,800 units × 6 hours) – ₹ 4,70,000

= ₹ 38,000 (A)

(iv) Variable Overhead Cost Variance = (Std. Rate × Std. Hours) – Actual Overhead

= (4,800 units × 6 hours × ₹ 12) - ₹ 3,60,200

= ₹ 3,45,600 - ₹ 3,60,200

= ₹ 14,600 (A)

(b) Profit Statement using Activity based costing (ABC) method:

	Particulars	**Product**			**Total**
		A	**B**	**C**	
A.	Sales Quantity	1,00,000	80,000	60,000	
B.	Selling price per unit (₹)	90	180	140	
C.	Sales Value (₹) [A×B]	90,00,000	1,44,00,000	84,00,000	3,18,00,000

D.	Direct cost per unit (₹)	50	90	95	
E.	Direct Cost (₹) [A×D]	50,00,000	72,00,000	57,00,000	1,79,00,000
F.	Overheads: (Refer working note-3)				
(i)	Machining services (₹)	21,00,000	22,40,000	21,00,000	64,40,000
(ii)	Assembly services (₹)	24,00,000	12,80,000	7,20,000	44,00,000
(iii)	Set-up costs (₹)	4,50,000	3,00,000	1,50,000	9,00,000
(iv)	Order processing (₹)	2,20,000	2,40,000	2,60,000	7,20,000
(v)	Purchasing (₹)	1,50,000	1,75,000	75,000	4,00,000
G.	Total Cost (₹) [E+F]	1,03,20,000	1,14,35,000	90,05,000	3,07,60,000
H.	Profit (₹) (C-G)	(13,20,000)	29,65,000	(6,05,000)	10,40,000

Working Notes:

1.

		Products			
		A	**B**	**C**	**Total**
A.	Production (units)	1,00,000	80,000	60,000	
B.	Machine hours per unit	3	4	5	
C.	Total Machine hours [A×B]	3,00,000	3,20,000	3,00,000	9,20,000
D.	Rate per hour (₹)	8	8	8	
E.	**Machine Dept. cost [C×D]**	**24,00,000**	**25,60,000**	**24,00,000**	**73,60,000**
F.	Labour hours per unit	6	4	3	
G.	Total labour hours [A×F]	6,00,000	3,20,000	1,80,000	11,00,000
H.	Rate per hour (₹)	5	5	5	
I.	**Assembly Dept. cost [G×H]**	**30,00,000**	**16,00,000**	**9,00,000**	**55,00,000**

$$\text{Machine hour rate} = \frac{₹73,60,000}{9,20,000 \text{ hours}} = ₹8$$

$$\text{Labour hour rate} = \frac{₹55,00,000}{11,00,000\ \text{hours}} = ₹5$$

2. Calculation of cost driver rate

Cost Pool	Amount (₹)	Cost Driver	Quantity	Driver rate (₹)
Machining services	64,40,000	Machine hours	9,20,000 hours	7.00
Assembly services	44,00,000	Direct labour hours	11,00,000 hours	4.00
Set-up costs	9,00,000	Machine set-ups	9,000 set-ups	100.00
Order processing	7,20,000	Customer orders	7,200 orders	100.00
Purchasing	4,00,000	Purchase orders	800 orders	500.00

3. Calculation of activity-wise cost

		Products			
		A	B	C	Total
A.	Machining hours (Refer Working note-1)	3,00,000	3,20,000	3,00,000	9,20,000
B.	Machine hour rate (₹) (Refer Working note-2)	7	7	7	
C.	**Machining services cost (₹) [A×B]**	**21,00,000**	**22,40,000**	**21,00,000**	**64,40,000**
D.	Labour hours (Refer Working note-1)	6,00,000	3,20,000	1,80,000	11,00,000
E.	Labour hour rate (₹) (Refer Working note-2)	4	4	4	
F.	**Assembly services cost (₹) [D×E]**	**24,00,000**	**12,80,000**	**7,20,000**	**44,00,000**
G.	Machine set-ups	4,500	3,000	1,500	9,000
H.	Rate per set-up (₹) (Refer Working note-2)	100	100	100	
I.	**Set-up cost (₹) [G×H]**	**4,50,000**	**3,00,000**	**1,50,000**	**9,00,000**
J.	Customer orders	2,200	2,400	2,600	7,200

K.	Rate per order (₹) (Refer Working note-2)	100	100	100	
L.	**Order processing cost (₹) [J×K]**	**2,20,000**	**2,40,000**	**2,60,000**	**7,20,000**
M.	Purchase orders	300	350	150	800
N.	Rate per order (₹) (Refer Working note-2)	500	500	500	
O.	**Purchasing cost (₹) [M×N]**	**1,50,000**	**1,75,000**	**75,000**	**4,00,000**

6. (a) Treatment of over and under absorption of overheads are:-

(i) Writing off to costing P&L A/c:– Small difference between the actual and absorbed amount should simply be transferred to costing P&L A/c, if difference is large then investigate the causes and after that abnormal loss/ gain shall be transferred to costing P&L A/c.

(ii) Use of supplementary Rate: Under this method the balance of under and over absorbed overheads may be charged to cost of W.I.P., finished stock and cost of sales proportionately with the help of supplementary rate of overhead.

(iii) Carry Forward to Subsequent Year: Difference should be carried forward in the expectation that next year the position will be automatically corrected.

(b) The impact of IT in cost accounting may include the followings:

(i) After the introduction of ERPs, different functional activities get integrated and as a consequence a single entry into the accounting system provides custom made reports for every purpose and saves an organisation from preparing different sets of documents. Reconciliation process of results of both cost and financial accounting systems become simpler and less sophisticated.

(ii) A move towards paperless environment can be seen where documents like Bill of Material, Material Requisition Note, Goods Received Note, labour utilisation report etc. are no longer required to be prepared in multiple copies, the related department can get e-copy from the system.

(iii) Information Technology with the help of internet (including intranet and extranet) helps in resource procurement and mobilisation. For example, production department can get materials from the stores without issuing material requisition note physically. Similarly, purchase orders can be initiated to the suppliers with the help of extranet. This enables an entity to shift towards Just-in-Time (JIT) approach of inventory management and production.

(iv) Cost information for a cost centre or cost object is ascertained with accuracy in timely manner. Each cost centre and cost object is codified and all related costs are assigned to the cost object or cost centre. This process automates the cost accumulation and

ascertainment process. The cost information can be customised as per the requirement. For example, when an entity manufactures or provide services, it can know information job-wise, batch-wise, process-wise, cost centre wise etc.

(v) Uniformity in preparation of report, budgets and standards can be achieved with the help of IT. ERP software plays an important role in bringing uniformity irrespective of location, currency, language and regulations.

(vi) Cost and revenue variance reports are generated in real time basis which enables the management to take control measures immediately.

(vii) IT enables an entity to monitor and analyse each process of manufacturing or service activity closely to eliminate non-value-added activities.

The above are examples of few areas where Cost Accounting is done with the help of IT.

(c) Controllable costs and Uncontrollable costs*:* Cost that can be controlled, typically by a cost, profit or investment centre manager is called controllable cost. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre.

Costs which cannot be influenced by the action of a specified member of an undertaking are known as uncontrollable costs.

(d) Apportionment of Joint Cost amongst Joint Products using:

Market value at the point of separation: This method is used for apportionment of joint costs to joint products upto the split off point. It is difficult to apply if the market value of the product at the point of separation is not available. It is useful method where further processing costs are incurred disproportionately.

Net realizable value Method: From the sales value of joint products (at finished stage) the followings are deducted:

– Estimated profit margins

– Selling & distribution expenses, if any

– Post split off costs.

The resultant figure so obtained is known as net realizable value of joint products. Joint costs are apportioned in the ratio of net realizable value.

ANSWER OF MODEL TEST PAPER 2

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. i. A Revised Sale $= \frac{\text{Revised Fixed Cost + Expected Profit}}{\text{P / V Ratio}}$

= {₹115 + (20+10)} ÷ 45% **= ₹ 322.22 crores**

ii. D Revised Break – even Point = $\frac{\text{Fixed Cost}}{\text{P / V Ratio}}$

= ₹115 Crore ÷ 45% = ₹255.56 Crore (Refer working notes)

iii. D Revised Margin of Safety = Revised Sales – Revised Break–even Sales

= ₹ 322.22Crores – ₹ 255.56Crores = **₹ 66.66 Crores.**

iv. C ₹ 20 Crore & ₹30 Crore respectively (Refer working note)

v. A Total cost in last year = ₹230 Crore

Total cost in coming year = Variable Cost + Fixed Cost

Revised sales × 55% + 115 Crore

= ₹ 322.22 Crore × 55% + ₹ 115 Crore = ₹ 292.22 Crore

Working Note

Present Sales and Profit

Total Sales	=	Break – even Sales + Margin of Safety
	=	₹200 Crores + ₹50 Crores
	=	₹250 Crores
P/V Ratio	=	40%
Variable Cost	=	60% of Sales
	=	₹250 Crores × 60%
	=	₹150 Crores
Fixed Cost	=	Break – even Sales × P/V Ratio
	=	₹200 Crores × 40%
	=	₹80 Crores
Total Cost	=	₹150 Crores + ₹80 Crores
	=	₹230 Crores
Profit	=	Total Sales – Total Cost

= ₹250 Crores – ₹230 Crores

= ₹20 Cores

Revised Sales (₹ in Crores)

Present Fixed Cost	80.00
Increase in Fixed Cost	20.00
Interest at 15 *per cent* on Additional Capital (₹100Crores × 15%)	15.00
Total Revised Fixed Cost (in crore)	115.00
Assuming that the Present Selling Price is ₹100	
Revised Selling Price will be (8% Less)	92.00
New Variable Cost (Reduced from 60% to 55%) of Sales (₹ 92 × 55%)	50.60
Contribution (₹92.00 – ₹ 50.60)	41.40

New P / V Ratio $= \frac{₹\ 41.40}{₹\ 92.00} \times 100$

= 45%

2. i. D **Variable Overhead Cost Variance** = Standard Variable Overheads for Production – Actual Variable Overheads

= ₹ 44,800 – ₹ 55,680

= ₹ 10,880 (A)

ii. C **Fixed Overhead Volume Variance** = Absorbed Fixed Overheads – Budgeted Fixed Overheads

= ₹ 87,200 – ₹ 1,09,000

=₹ 21,800 (A)

iii. A **Fixed Overhead Expenditure Variance** = Budgeted Fixed Overheads – Actual Fixed Overheads

= ₹ 10.9 × 10,000 units – ₹ 1,30,520

= ₹ 21,520 (A)

iv. B **Calendar Variance** = Possible Fixed Overheads – Budgeted Fixed Overheads

= ₹ 1,03,550 – ₹ 1,09,000

= ₹ 5,450 (A)

v. A **Fixed Overhead Cost Variance** = Absorbed Fixed Overheads – Actual Fixed Overheads

= ₹ 87,200 – ₹ 1,30,520

= ₹ 43,320 (A)

WORKING NOTE

Fixed Overheads = $\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Output}}$ = 12,00,000÷1,20,000	₹ 10.00
Fixed Overheads element in *Semi-Variable* Overheads i.e. 60% of ₹ 1,80,000	₹ 1,08,000
Fixed Overheads = $\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Output}}$ ₹ 1,08,000/120,000	₹ 0.90
Standard Rate of Absorption of Fixed Overheads *per unit* (₹ 10.00 + ₹ 0.90)	₹ 10.90
Fixed Overheads Absorbed on 8,000 units @ ₹10.90	₹ 87,200
Budgeted Variable Overheads *Add:* Variable element in Semi-Variable Overheads 40% of ₹ 1,80,000 Total Budgeted Variable Overheads Standard Variable Cost *per unit* = $\frac{\text{Budgeted Variable Overheads}}{\text{Budgeted Output}}$	₹ 6,00,000 ₹ 72,000 ₹ 6,72,000 ₹5.60
Standard Variable Overheads for 8,000 units @ ₹5.60	₹ 44,800
Budgeted Annual Fixed Overheads (₹ 12,00,000 + 60% of ₹ 1,80,000)	₹ 13,08,000
Possible Fixed Overheads = $\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Days}} \times \text{Actual Days}$ = 1,09,000/20 days ×19 days	₹ 1,03,550
Actual Fixed Overheads (₹ 1,19,000 + 60% of ₹ 19,200)	₹ 1,30,520
Actual Variable Overheads (₹ 48,000 + 40% of ₹ 19,200)	₹ 55,680

3. A (TT x 60) + [0.50 x (8-TT) x 60] = 420 TT* = 6 hours

Time saved = 8-6 = 2

* TT=Total Time Taken

4. C Ordering Cost = 4,00,000/320 = 1,250

Delivery Cost = 1,35,000/270 = 500

A = 1,250 x 100 + 500 x 70 = 1,60,000

B = 1,250 x 220 + 500 x 200 = 3,75,000

5. **B**

Direct labour	:	₹ 45,000
Direct expenses	:	₹ 15,000
Direct materials consumed	:	₹ 67,500
Prime Cost		₹ 1,27,500

6. **A** Abnormal gain units = 7600 - [8000 - 800] = 400 Abnormal gain = [40,000 - (800 x 5)]/ 7200 units x 400 units = 2,000

7. **B**

Total cost	= ₹ 5,25,000
Tonnes Km carried	= 6,55,000
Unit Cost	= ₹ 525000/655000 Km = ₹ 0.801

PART-II– Descriptive Questions

1. **(a)** **Process A Account**

Dr Cr.

	₹		₹
To Materials	40,000	By Transfer to Process B A/c	1,20,000
To Labour	40,000		
To Overheads	16,000		
	96,000		
To Profit (20% of transfer price, i.e., 25% of cost)	24,000		
	1,20,000		1,20,000

Process B Account

Dr Cr.

	₹		₹
To Transferred from Process A A/c	1,20,000	By Transfer to Finished Stock A/c	2,88,000
To Labour	56,000		
To Overhead	40,000		
	2,16,000		
To Profit (25% of transfer price i.e., 33.33% of cost)	72,000		
	2,88,000		2,88,000

Statement of Total Profit

	₹
Profit from Process A	24,000
Profit from Process B	72,000
Profit on Sales (₹ 4,00,000 – ₹ 2,88,000)	1,12,000
Total Profit	2,08,000

(b) (i) Calculation of Economic Order Quantity

$$EOQ = \sqrt{\frac{2 \times \text{Annual Demand} \times \text{Ordering Cost}}{\text{Carrying cost per unit per annum}}}$$

$$= \sqrt{\frac{2 \times 12,000 \text{ units} \times ₹1,200}{₹1,740 \times 0.12}} = 371 \text{ units (Approx)}$$

(ii) Evaluation of Profitability of Different Options of Order Quantity

(a) When EOQ is ordered

		(₹)
Purchase Cost	(12,000 units × ₹ 1,740)	2,08,80,000.00
Ordering Cost*	[(12,000 units ÷ 371 units) i.e. 33 × ₹ 1,200]	39,600.00
Carrying Cost**	(371 units × ₹ 1,740 × ½ × 12/100)	38,732.40
Total Cost		2,09,58,332.40

(b) When Quantity Discount of 5% is offered.

		(₹)
Purchase Cost	(12,000 units × ₹ 1,740 × 0.95)	1,98,36,000.00
Ordering Cost*	[(12,000 units ÷ 6,000 units) × ₹1,200]	2,400.00
Carrying Cost**	(6,000 units × ₹1,653 × ½ × 12/100)	5,95,080.00
Total Cost		2,04,33,480.00

Advise – The total cost of inventory is lower if quantity discount offer is accepted. Hence, the company is advised to accept the quantity discount.

$$* \text{ Ordering Cost} = \frac{\text{Annual Demand}}{\text{Order Quantity}} \times \text{Cost of placing an order}$$

$$** \text{ Carrying Cost} = \frac{\text{Cost per unit} \times \text{Quantity ordered} \times \text{Carrying Cost}}{2}$$

(c) Let T hours be the total time worked in hours by the skilled worker (machine-man Sam); ₹ 30/- is the rate per hour; standard time is 4 hours per unit and effective hourly earning rate is ₹ 37.50 then

Earning = Hours worked × Rate per hour

$$+\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Rate per hour}$$

(Under Rowan incentive plan)

$$₹\ 37.5\ T = (T \times ₹\ 30) + \frac{(4-T)}{4} \times T \times ₹\ 30$$

₹ 37.5 = ₹ 30 + (4 – T) × ₹ 7.5

Or ₹ 7.5 T = ₹ 22.5

Or T= 3 hours

Total earnings and effective hourly rate of skilled worker (machine man Sam) under Halsey Incentive Scheme (50%)

Total earnings = (Hours worked × Rate per hour) + (½ Time saved × Rate per hour)

(under 50% Halsey Incentive Scheme)

= (3 hours × ₹ 30) + (½ × 1 hour × ₹ 30)

$$\text{Effective hourly rate} = \frac{\text{Total earnings}}{\text{Hours taken}} = \frac{₹\ 105}{3\ \text{hours}} = ₹\ 35$$

2. (a) Computation of Machine Hour Rate

		Basis of apportionment	Total	Machines		
				P	Q	R
			(₹)	(₹)	(₹)	(₹)
(A)	**Standing Charges**					
	Insurance	Depreciation Basis	8,000	3,000	3,000	2,000
	Indirect Labour	Direct Labour	24,000	6,000	9,000	9,000
	Building Maintenance expenses	Floor Space	20,000	8,000	8,000	4,000
	Rent and Rates	Floor Space	1,20,000	48,000	48,000	24,000
	Salary of foreman	Equal	2,40,000	80,000	80,000	80,000
	Salary of attendant	Equal	60,000	20,000	20,000	20,000

	Total standing charges		4,72,000	1,65,000	1,68,000	1,39,000
	Hourly rate for standing charges			90.36	92.00	76.12
(B)	**Machine Expenses:**					
	Depreciation	Direct	20,000	7,500	7,500	5,000
	Spare parts	Final estimates	13,225	4,600	5,750	2,875
	Power	K.W. rating	40,000	15,000	10,000	15,000
	Consumable Stores	Direct	9,000	3,600	2,700	2,700
	Total Machine expenses		82,225	30,700	25,950	25,575
	Hourly Rate for Machine expenses			16.81	14.21	14.01
	Total (A + B)		5,54,225	1,95,700	1,93,950	1,64,575
	Machine Hour rate			107.17	106.22	90.13

Working Notes:

(i) Calculation of effective working hours:

No. of holidays 52 (Sundays) + 14 (other holidays) = 66

Saturday (52 – 2) = 50

No. of days (Work full time) = 365 – 66 – 50 = 249

	Hours
Full days work 249 × 8	= 1,992
Half days work 50 × 4	= 200
	2,192

	Hours
Effective capacity 85% of 2,192	1,863 (Rounded off)
Less: Normal loss of time (Breakdown) 2%	37 (Rounded off)
Effective running hour	1,826

(ii) Amount of spare parts is calculated as under:

	P	Q	R
	₹	₹	₹
Preliminary estimates	4,000	4,000	2,000

Add: Increase in price @ 15%	600	600	300
	4,600	4,600	2,300
Add: Increase in consumption @ 25%	–	1,150	575
Estimated cost	4,600	5,750	2,875

(iii) Amount of Indirect Labour is calculated as under:

	₹
Preliminary estimates	20,000
Add: Increase in wages @ 20%	4,000
	24,000

(iv) Amount of Consumables Stores is calculated as under:

	₹
Preliminary estimates	10,000
Less: Decrease in consumption @ 10%	1,000
	9,000

(v) Interest on capital outlay is a financial matter and, therefore it has been excluded from the cost accounts.

(b) Economic batch quantity in Batch Costing*:* In batch costing the most important problem is the determination of 'Economic Batch Quantity'. The determination of economic batch quantity involves two types of costs viz, (i) set up cost and (ii) carrying cost. With the increase in the batch size, there is an increase in the carrying cost but the 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 of a batch is known as economic or optimum batch quantity.

Economic batch quantity can be determined with the help of table, graph or mathematical formula. The mathematical formula usually used for its determination is as follows:

$$E.B.Q = \sqrt{\frac{2DS}{C}}$$

Where, D= Annual demand for the product

S = Setting up cost per batch

C = Carrying cost per unit of production per annum

3. (a) (a) **Flexible Budget for different levels**

	₹	₹	₹	₹	₹
No. of Students	60	90	120	150	180
VARIABLE COST					

Breakfast	3000	4500	6000	7500	9000
Lunch	6000	9000	12000	15000	18000
Tea	600	900	1200	1500	1800
Entrance fee	1200	1800	2400	3000	3600
Sub-total (A)	10800	16200	21600	27000	32400
Variable cost/unit	180	180	180	180	180
SEMI-VARIABLE COST					
Bus rent	13000	13000	19500	19500	26000
Special permit fee	1000	1000	1500	1500	2000
Allowance for teachers	2000	2000	3000	3000	4000
Sub-total (B)	16000	16000	24000	24000	32000
FIXED COST					
Block entrance fee	2500	2500	2500	2500	2500
Prize to students	500	500	500	500	500
Sub total (C)	3000	3000	3000	3000	3000
Total cost (A + B + C)	29,800	35,200	48,600	54,000	67,400

(b) Cost per student 496.67 391.11 405.00 360.00 374.44

(c) Break-even level

	₹
Collection per students	400
Less Variable Cost	180
Contribution	220

Since semi-fixed costs relate to a block of 50 students, the fixed and semi-variable cost for three level will be:

Level of Student	51–100	101–150	151-200
Fixed + Semi–variable cost (₹)	19,000	27,000	35,000
Contribution per unit (₹)	220	220	220
Break Even level of students	86	123	159

(b) (i) Statement of cost allocation to each product from each activity

	Product			
	A (₹)	**B (₹)**	**C (₹)**	**Total (₹)**
Power (Refer to working note)	10,00,000	20,00,000	15,00,000	45,00,000

	(10,000 kWh × ₹ 100)	(20,000 kWh × ₹ 100)	(15,000 kWh × ₹ 100)	
Quality Inspections (Refer to working note)	31,50,000 (3,500 inspections × ₹ 900)	22,50,000 (2,500 inspections × ₹ 900)	27,00,000 (3,000 inspections × ₹ 900)	81,00,000

Working Note:

Rate per unit of cost driver:

Power : (₹ 60,00,000 ÷ 60,000 kWh) = ₹100/kWh

Quality Inspection: (₹ 90,00,000 ÷ 10,000 inspections) = ₹900 per inspection

(ii) Calculation of cost of unused capacity for each activity:

	(₹)
Power (₹60,00,000 – ₹45,00,000)	15,00,000
Quality Inspections (₹90,00,000 – ₹75,00,000)	15,00,000
Total cost of unused capacity	30,00,000

4. (a) Job Cost Sheet for the period…..

			₹
Direct materials			2,13,000
Direct wages:			
Machine shop		63,000	
Assembly shop		48,000	1,11,000
	Prime Cost		3,24,000
Works overhead:			
Machine shop		88,200	
Assembly shop		51,800	1,40,000
	Work Cost		4,64,000
Administration overhead			92,800
	Cost of Production		5,56,800
Selling overhead			81,000
Distribution overhead			62,100
	Total Cost		6,99,900

Schedule of Overhead Rate

(i) Works Overhead: Hourly rate = (Overhead amount ÷ Hours)

Machine shop = (88,200 ÷ 12,000) = ₹ 7.35 per hour

Assembly shop = (51,800 ÷ 10,000) = ₹ 5.18 per hour

(ii) Administrative Overhead as a % of works cost

$$= \frac{92,800}{4,64,000} \times 100 = 20\%$$

(iii) Selling and distribution overhead as % of works cost

$$= \frac{81,000 + 62,100}{4,64,000} \times 100 = 30.84\%$$

Labour hour rates are calculated as under:

Machine shop = ₹ 63,000 ÷ 12,000 hrs. = ₹ 5.25

Assembly shop = ₹ 48,000÷10,000 hrs. = ₹ 4.80

(b) Cost Estimate for Job

Direct Materials	₹	₹
(i) 25 kg @ ₹ 17.20 per kg	430	
(ii) 15 kg @ ₹ 21 per kg	315	745.00
Direct Labour		
Machine shop (30 hrs. @ ₹ 5.25)	157.50	
Assembly shop (42 hrs. @ ₹ 4.80)	201.60	359.10
Prime Cost		1104.10
Works Overhead		
Machine shop (30 hours @ ₹ 7.35)	220.50	
Assembly shop (42 hours @ ₹ 5.18)	217.56	438.06
Works Cost		1542.16
Administration overhead (20% of works cost)		308.43
Cost of Production		1850.59
Selling and distribution cost (30.84% of works cost)		475.60
Total Estimated Cost		2326.19

(c) Detection of slow moving and non-moving item of stores:

The existence of slow moving and non-moving item of stores can be detected in the following ways.

(i) By preparing and *perusing periodic reports* showing the status of different items or stores.

(ii) By calculating the *inventory turnover period* of various items in terms of number of days/ months of consumption.

(iii) By computing *inventory turnover ratio* periodically, relating to the issues as a percentage of average stock held.

(iv) 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.

(d) When the Cost and Financial Accounts are integrated - there is no need to have a separate reconciliation statement between the two sets of accounts. Integration means that the same set of accounts fulfil the requirement of both i.e., Cost and Financial Accounts.

5. (a) Cost sheet for the year ended 31st March, 2023.

Units produced - 14,000 units

Units sold - 14,153 units

Particulars	**Amount (₹)**
Raw materials purchased	43,50,000
Add: Freight Inward	1,20,000
Add: Opening value of raw materials	2,28,000
Less: Closing value of raw materials	(3,05,000)
	43,93,000
Less: Sale of scrap of material	(7,000)
Materials consumed	43,86,000
Direct Wages (12,56,000 + 1,50,000)	14,06,000
Prime Cost	57,92,000
Factory overheads (20% of Prime Cost)	11,58,400
Add: Opening value of W-I-P	1,92,500
Less: Closing value of W-I-P	(1,40,700)
Factory Cost	70,02,200
Add: Administrative overheads	1,73,000
Cost of Production	71,75,200
Add: Value of opening finished stock	6,08,500
Less: Value of closing finished stock [₹ 500(71,75,200/14,350) × 767] (1,320 + 14,350 – 14,903 = 767 units)	(3,83,500)
Cost of Goods Sold	74,00,200
Distribution expenses (₹16 × 14,903 units)	2,38,448

Cost of Sales	76,38,648
Profit (Balancing figure)	9,90,189
Sales (₹ 579 × 14,903 units)	86,28,837

(b) Workings:

Total occupancy = Occupancy in normal season + Occupancy in off-season

= (20 rooms × 80% × 8 months × 30 days) + (20 rooms × 50% × 4 months × 30 days)

= 3,840 + 1,200 = 5,040 room-days

Total Cost = Variable cost + Fixed cost

= (₹ 500 × 5,040 room-days) + ₹ 53,25,000

= ₹ 25,20,000 + ₹ 53,25,000

= 78,45,000

(a) Calculation of tariff rate per room

Tariff per room per day = (Total cost + 25% Margin on total cost) ÷ Total occupancy

= (₹ 78,45,000 + 19,61,250) ÷ 5,040 = ₹ 1,945.68

(b) Calculation of break-even occupancy

Contribution per day = Tariff – Variable cost

= ₹ 1,945.68 – 500 = ₹ 1445.68

Break-even occupancy = ₹ 53,25,000 ÷ 1445.68

= 3683

Occupancy in normal season = Break-even occupancy – Occupancy in off-season

= 3683 – (20 rooms × 50% × 4 months × 30 days)

= 3683 – 1200 = 2483 room-days

In Percentage = 2483 ÷ 4800 = 51.73%

6. (a) When the cost and financial accounts are kept separately, It is imperative that these should be reconciled, otherwise the cost accounts would not be reliable. The reconciliation of two set of accounts can be made, if both the sets contain sufficient detail as would enable the causes of differences to be located. It is therefore, important that in the financial accounts, the expenses should be analysed in the same way as in cost accounts. It is important to know the causes which generally give rise to differences in the costs & financial accounts. These are:

(i) Items included in financial accounts but not in cost accounts

- Income-tax
- Transfer to reserve

- Dividends paid
- Goodwill / preliminary expenses written off
- Pure financial items
- Interest, dividends
- Losses on sale of investments
- Expenses of Co's share transfer office
- Damages & penalties

(ii) Items included in cost accounts but not in financial accounts

- Opportunity cost of capital
- Notional rent

(iii) Under / Over absorption of expenses in cost accounts

(iv) Different bases of inventory valuation

Motivation for reconciliation is:

- To ensure reliability of cost data
- To ensure ascertainment of correct product cost
- To ensure correct decision making by the management based on Cost & Financial data
- To report fruitful financial / cost data.

(b) The essential features, which a good Cost Accounting System should possess, are as follows:

(a) **Informative and Simple:** Cost Accounting System should be tailor-made, practical, simple and capable of meeting the requirements of a business concern. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(b) **Accuracy:** The data to be used by the Cost Accounting System should be accurate; otherwise it may distort the output of the system and a wrong decision may be taken.

(c) **Support from Management and subordinates:** Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.

(d) **Cost-Benefit:** The Cost of installing and operating the system should justify the results.

(e) **Procedure:** A carefully phased programme should be prepared by using network analysis for the introduction of the system.

(f) **Trust:** Management should have faith in the Costing System and should also provide a helping hand for its development and success.

(c) The following steps are useful for minimizing labour turnover:

(a) *Exit interview*: An interview to be arranged with each outgoing employee to ascertain the reasons of his leaving the organization.

(b) *Job analysis and evaluation*: to ascertain the requirement of each job.

(c) Organization should make use of a scientific system of recruitment, placement and promotion for employees.

(d) Organization should create healthy atmosphere, providing education, medical and housing facilities for workers.

(e) Committee for settling workers grievances.

OR

(c) CVP Analysis:-Assumptions

(i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.

(ii) Total cost can be separated into two components: Fixed and variable

(iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.

(iv) Selling price, variable cost per unit and total fixed costs are known and constant.

(v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.

ANSWER OF MODEL TEST PAPER 3

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

PART I – Case Scenario based MCQs

1. (i) (c) Output by experienced workers in 50,000 hours = $\frac{50,000}{10}$ = 5,000 units

∴ Output by new recruits = 60% of 5,000 = 3,000 units

Loss of output = 5,000 – 3,000 = 2,000 units

Total loss of output = Due to delay recruitment + Due to inexperience

= 10,000 + 2,000 = 12,000 units

(ii) (a) Contribution per unit = 20% of ₹180 = ₹ 36

Total contribution lost = ₹36 × 12,000 units = ₹ 4,32,000

(iii) (b) Cost of repairing defective units = 3,000 units × 0.2 × ₹ 25 = ₹ 15,000

(iv) (d) Calculation of loss of profit due to labour turnover

	(₹)
Loss of Contribution	4,32,000
Cost of repairing defective units	15,000
Recruitment cost	1,56,340
Training cost	1,13,180
Settlement cost of workers leaving	1,83,480
Profit forgone in 2022-23	9,00,000

(v) (c) Output by experienced workers in 50,000 hours = $\frac{50,000}{10}$ = 5,000 units

∴ Output by new recruits = 60% of 5,000 = 3,000 units

Loss of output = 5,000 – 3,000 = 2,000 units

2. (i) (b)

(ii) (a)

(iii) (b)

(iv) (c)

(v) (a)

Statement of Cost of P Ltd. for the year ended 31st December, 2023:

Sl. No.	Particulars	Amount (₹)	Amount (₹)
(i)	Material Consumed:		
	- Raw materials purchased	5,00,00,000	
	- Freight inward	9,20,600	
	Add: Opening stock of raw materials	10,00,000	
	Less: Closing stock of raw materials	(8,40,000)	5,10,80,600
(ii)	Direct employee (labour) cost:		
	- Wages paid to factory workers		25,20,000
(iii)	Direct expenses:		
	- Royalty paid for production	1,80,000	
	- Amount paid for power & fuel	3,50,000	
	- Job charges paid to job workers	3,10,000	8,40,000
	Prime Cost		5,44,40,600
(iv)	Works/ Factory overheads:		
	- Stores and spares consumed	1,10,000	
	- Repairs & Maintenance paid for plant & machinery	40,000	
	- Insurance premium paid for plant & machinery	28,200	
	- Insurance premium paid for factory building	18,800	
	- Expenses paid for pollution control and engineering & maintenance	36,000	2,33,000
	Gross factory cost		5,46,73,600
	Add: Opening value of W-I-P		8,60,000
	Less: Closing value of W-I-P		(6,60,000)
	Factory Cost		5,48,73,600
(v)	Quality control cost:		
	- Expenses paid for quality control check activities		18,000
(vi)	Research & development cost paid for improvement in production process		20,000
(vii)	Less: Realisable value on sale of scrap and waste		(48,000)
(viii)	Add: Primary packing cost		46,000
	Cost of Production		5,49,09,600
	Add: Opening stock of finished goods		12,00,000
	Less: Closing stock of finished goods		(10,50,000)

	Cost of Goods Sold		5,50,59,600
(ix)	Administrative overheads:		
	- Depreciation on office building	50,000	
	- Salary paid to General Manager	6,40,000	
	- Fee paid to independent directors	1,20,000	8,10,000
(x)	Selling overheads:		
	- Repairs & Maintenance paid for sales office building	20,000	
	- Salary paid to Manager- Sales & Marketing	5,60,000	
	- Performance bonus paid to sales staffs	1,20,000	7,00,000
(xi)	Distribution overheads:		
	- Packing cost paid for re-distribution of finished goods		80,000
	Cost of Sales		5,66,49,600

3. (d)

Variable Overhead Efficiency Variance:

= Std. rate per hour × (Std. hours for actual production – Actual hours)

= ₹10 (2 hours × 11,800 units – 23,200 hours) = ₹4,000 (F)

Workings:

1. Standard cost per unit = $\frac{₹\ 2,40,000}{12,000 units}$ = ₹ 20

2. Standard cost per hour = $\frac{₹\ 2,40,000}{12,000\ units \times 2\ hours}$ = ₹10

4. (b)

Sales mix (in quantity) is 4 units of Product- A and 3 units of Product- B

Composite contribution per unit by taking weights for the product sales quantity

=Product A: **₹140 ×** $\frac{4}{7}$ + Product B: ` **70** × $\frac{3}{7}$ = ₹ 80 + ₹ 30 = ₹ 110

Composite Break-even point = $\frac{\text{Common Fixed Cost}}{\text{Composite Contribution per unit}} = \frac{₹\ 6,16,000}{₹\ 110}$

= 5,600 units

Break-even units of Product- B = 5,600× $\frac{3}{7}$ = 2,400 units

5. (d) 60 km

Let's assume distance between Delhi and Manesar is 'X'

Therefore: Xx39x2x3x26x12 = ₹ 43,80,480

X = 60

6 (a) ₹ 11,27,000

	₹
Purchase price	10,00,000
Custom duty	2,00,000
Octroi	5,000
Carriage inward	12,000
Commission on Purchase	10,000
Total Purchase	12,27,000
Opening stock of Raw Material	1,00,000
Closing stock of Raw Material	(2,00,000)
Raw Material consumed	11,27,000

7. (c) ₹ 1,80,000

costs allocated to product A is

= (60,000kg/30,000kg)*3,60,000

= 1,80,000

PART-II – Descriptive Questions

1. (a) (i) Optimum run size for empty bottle manufacture

$$= \sqrt{\frac{2 \times \text{Annual supply of empty bottles} \times \text{Set} - \text{up cost per production run}}{\text{Annual holding cost per bottle}}}$$

$$= \sqrt{\frac{2 \times 1{,}50{,}000 \text{ bottles} \times 520}{12 \text{ months} \times 0.05\text{P}}} = 16{,}125 \text{ bottles}$$

(ii) Interval between two consecutive optimum runs

$$= \frac{12 \text{ months}}{\left(\frac{\text{Annual production}}{\text{Optimum run size}}\right)}$$

$$= \frac{12 \text{ months}}{\left(\frac{1{,}50{,}000 \text{ bottles}}{16{,}125 \text{ bottles}}\right)} = \frac{12 \text{ months}}{9.30} = 1.29 \text{ months or 39 days}$$

approximately.

(iii) Minimum inventory cost per annum

= Total production run cost + Total carrying cost per annum

$$= \frac{1{,}50{,}000 \text{ bearings}}{16{,}125 \text{ bearings}} \times ₹\ 520 + (1/2)\ 16125 \text{ bottles} \times ₹\ 0.05 \times 12 \text{ months}$$

= ₹ 4,836 + ₹ 4837.50

= ₹ 9673.50

(b) Working Notes:

1. Depreciation per annum:= $\frac{\text{Purchase price - Scrap value}}{\text{Estimated life}}$

$$= \frac{₹\,4,00,000 - ₹\,10,000}{5 \text{ years}} = ₹\,78,000$$

2. Total distance travelled by mini-bus in 25 days:

   = Length of the route (two -sides) × No. of trips per day × No. of days

   = 60 km × 6 trips × 25 days = 9,000 km

3. Total Passenger-Km:

   = Total distance travelled by mini-bus in 25 days × No. of seats

   = 9,000 km × 20 seats = 1,80,000 passenger-km

Statement suggesting fare per passenger-km

Particulars	**Cost per annum ₹**	**Cost per month ₹**
Fixed expenses:		
Insurance	15,000	
Garage rent	9,000	
Road tax	3,000	
Administrative charges	5,000	
Depreciation	78,000	
Interest on loan	10,000	
	1,20,000	10,000
Running expenses:		
Repair and maintenance	15,000	1,250
Replacement of tyre-tube	3,600	300
Diesel and oil cost (9,000 km × ₹ 5)	-	45,000
Driver and conductor's salary	-	5,000
Total cost (per month)		61,550.00
Add: Profit 20% of total revenue cost or 25% of total cost		15,387.50
Total revenue		76,937.50

Rate per passenger-km ₹ 76,937.50/1,80,000 passenger km = 0.42743 i.e., = 0.43 i.e., 43 paise

(c) **(i)** Economic Order Quantity = $\sqrt{\frac{2AO}{C}}$

Where, A= Annual demand

O = Cost of placing an order

C = Carrying cost per unit per annum

$= \sqrt{\frac{2x(40x365)x100}{0.06x365}}$

= 365 units

(ii) Re-Order Level = Maximum usage x maximum lead time

= 40x26

= 1040 units

2. **(a)** **a.** Variable overhead absorption rate:

₹ 3,56,375 – ₹ 3,38,875 = ₹ 17,500 ÷ (16,500 – 14,500) = ₹ 8.75 per machine hour.

b. Total fixed overheads:

	₹
Total overheads at 14,500 hours	3,38,875
Variable overheads = ₹ 8.75 × 14,500	1,26,875
Total fixed overheads	2,12,000

c. Budgeted level of activity:

Let budgeted level of activity = x

$\frac{(₹\ 8.75\ x + ₹\ 2,12,000)}{x} = 22$

8.75x + ₹ 2,12,000 = 22x

2,12,000 = 13.25x

16,000 = x

Thus, budgeted level of activity = 16,000 machine hours.

d. Under/over – recovery of overheads:

	₹
Actual overheads	3,55,050
Absorbed = 15,850 hours × ₹ 22/hour	(3,48,700)
Under - recovery	6,350

e. Departmental absorption rates provide Costs which are more precise than those provided by the use of blanket absorption rates. Departmental absorption rates facilitate Variance analysis and Cost control. The application of these rates makes the task of Stock and WIP valuation easier and more precise. However the setting up and

monitoring of these rates can be time consuming and expensive. In cases where departments are similar the use of such rates may not be useful for Costing purposes.

(b) The essential features, which a good cost and management accounting system should possess, are as follows:

(a) Informative and simple: Cost and management accounting system should be tailor-made, practical, simple and capable of meeting the requirements of a business concern. The system of costing should not sacrifice the utility by introducing meticulous and unnecessary details.

(b) Accurate and authentic: The data to be used by the cost and management accounting system should be accurate and authenticated; otherwise it may distort the output of the system and a wrong decision may be taken.

(c) Uniformity and consistency: There should be uniformity and consistency in classification, treatment and reporting of cost data and related information. This is required for benchmarking and comparability of the results of the system for both horizontal and vertical analysis.

(d) Integrated and inclusive: The cost and management accounting system should be integrated with other systems like financial accounting, taxation, statistics and operational research etc. to have a complete overview and clarity in results.

3. (a) **COST LEDGER**

Dr. **Cost Ledger Account** Cr.

Particulars	₹	Particulars	₹
To Stores ledger control A/c	5,800	By Balance b/d	13,30,440
To Finished stock ledger control A/c	3,71,780	By Stores ledger control A/c	2,46,000
To Balance c/d	15,37,030	By Wages control A/c	1,01,060
		By Works overhead control A/c	43,330
		By Works overhead control A/c	1,83,020
		By Finished stock ledger control A/c	10,760
	19,14,610		19,14,610
		By Balance b/d	15,37,030

Dr.	**Stores Ledger Control Account**		Cr.
Particulars	₹	Particulars	₹
To Balance b/d	6,02,870	By Cost ledger control A/c	5,800
To Cost ledger control A/c	2,46,000	By Work-in-progress control A/c	2,54,630
		By Balance c/d	5,88,440
	8,48,870		8,48,870
To Balance b/d	5,88,440		

Dr. **Manufacturing Overhead Control Account** Cr.

Particulars	₹	Particulars	₹
To Cost ledger control A/c	1,83,020	By Balance b/d	21,050
To Cost ledger control A/c	43,330	By Work-in-progress control A/c	1,54,400
		By Balance c/d	50,900
	2,26,350		2,26,350
To Balance b/d	50,900		

Dr. **Work-in-progress Control Account** Cr.

Particulars	₹	**Particulars**	₹
To Balance b/d	2,44,730	By Finished stock ledger control A/c	4,21,670
To Wages control A/c	1,01,060	By Balance c/d	3,33,150
To Stores ledger control A/c	2,54,630		
To Works overhead control A/c	1,54,400		
	7,54,820		7,54,820
To Balance b/d	3,33,150		

Dr. **Finished Stock Ledger Control Account** Cr.

Particulars	₹	**Particulars**	₹
To Balance b/d	5,03,890	By Cost ledger control A/c	3,71,780
To Work-in-progress	4,21,670	By Balance c/d	5,64,540
To Cost ledger control A/c	10,760		
	9,36,320		9,36,320
To Balance b/d	5,64,540		

Trial Balance

	Dr. ₹	*Cr.* ₹
Cost ledger control account	—	15,37,030
Stores ledger control account	5,88,440	—
Mfg. overhead control account	50,900	—
W.I.P. control account	3,33,150	—
Finished stock ledger control account	5,64,540	—
	15,37,030	15,37,030

(b) Production budget

(For the year 2023 by quarters)

(a) Units to be produced in each quarters

Quarters

	I	II	III	IV	Total
2/3 of current quarter's sales demand	8,000	10,000	11,000	12,000	41,000
1/3 of the following quarter demand*	5,000	5,500	6,000	6,500	23,000
	13,000	15,500	17,000	18,500	64,000

(b) Statement showing direct material, variable overhead and fixed overhead

Quarters

	I	II	III	IV	Total
Units to be produced	13,000	15,500	17,000	18,500	64,000
Direct Material @ ₹ 5 Per unit	₹ 65,000	₹ 77,500	₹ 85,000	₹ 92,500	₹ 3,20,000
(Refer to Note 1)					
Direct Labour @ ₹ 6 per Unit	78,000	93,000	1,02,000	1,11,000	3,84,000
(Refer to Note 2)					
Variable overhead ₹ 1.50 per unit	19,500	23,250	25,500	27,750	96,000
(Refer to Note 3)					
Fixed Overhead	45,000	45,000	45,000	45,000	1,80,000
(Refer to Note 4)	2,07,500	2,38,750	2,57,500	2,76,250	9,80,000

(ii)	**Budgeted profit for the whole year**	₹
	Sales (61,500** units @₹ 17 per unit)	₹ 10,45,500
	Less: Total variable cost per unit (61,500** unit @ ₹ 12.50 per unit)	₹ 7,68,705
		2,76,750
	Less: Fixed cost	1,80,000
	Profit for the whole year	96,750
	Variable cost per unit:	₹
	Direct material cost (Refer to Note 1)	5.00
	Direct labour cost (Refer to Note 2)	6.00
	Variable cost (Refer to Note 3)	1.50
		12.50

Working Notes:

1. Direct material cost = 10 kgs @ ₹ 0.50 per kg = ₹ 5.00 per unit.
2. Direct labour per unit = 1 hr. 30 minutes @ ₹ 4 per hour = ₹ 6 per unit.
3. Variable overhead per unit = 1 hr. 30 minutes @ ₹ 1 per hour = ₹ 1.50 unit
4. Fixed Overhead

Budgeted production volume is 90,000 direct labour hours for the year @ ₹ 2 per hour i.e. ₹ 1,80, 000 for the year. This fixed overhead is spread over the four quarters equally.

* Inventory is given for the fourth quarter.

** Sales for the year is given i.e. 12,000 + 15,000+16,500 + 18,000 = 61,500 unit.

4. (a) (a) Material Price variance = Actual quantity (Std. Price – Actual Price)

A = 17200(3.5 – 4.00)	=	8600(A)
B = 36500(5.00 – 4.50)	=	18250(F)
C = 23800(4.25 – 4.30)	=	1190(A)
		8460(F)

(b) Material usage variance = Std. Price (Std. quantity for actual production – Actual quantity)

A = 3.50(6000 X 3 – 17200)	=	2800(F)
B = 5.00(6000 X 6 – 36500)	=	2500(A)
C = 4.25(6000 X 4 – 23800)	=	850(F)
		1150 (F)

(c) Labour rate variance = Actual hour paid (Std. rate – Actual rate)

Skilled labour = 24 X 45 (5.00 – 6.00) = 1080(A)

Semi-skilled labour = 12 X 45 (4.00 - 4.25) = 135(A)

Un-skilled labour = 6 X 45 (2.00 - 3.25) = 337.50(A)

1552.50(A)

(d) Labour Mix variance = Std. rate (Revised std. hours – Actual hours)

Skilled labour = 5.00(1170 - 1080) = 450(F)

Semi-skilled labour = 4.00(450 – 540) = 360(A)

Un-skilled labour = 2.00(360 – 270) = 180(F)

270(F)

(e) Labour yield variance = Std. rate per hour (Standard hours – Revised std. hours)

= 8370/1980(1900 – 1980) = 338 (A)

Working notes:

(i)

Standard				Actual		
Category of workers	Hrs.*	Rate ₹	Amount ₹	Hrs.*	Rate ₹	Amount ₹
Skilled	1170	5.00	5850.00	1080	6.00	6480.00
Semi-skilled	450	4.00	1800.00	540	4.25	2295.00
Un-skilled	360	2.00	720.00	270	3.25	877.50
	1980		8370.00	1890		9652.50

*Hrs. = No. of workers X 45 hours.

(b) Variable cost to sales = 80%

Contribution to sales = 20%

Or P/V Ratio 20%

We know that: BES x P/V Ratio = Fixed Cost

BES x 0.20 = ₹ 65,000

Or BES = ₹ 3,25,000

It is given that break-even occurs at 65% capacity.

Therefore, sales at 100% capacity = ₹ 3,25,000 / 0.65

= ₹ 5,00,000

Computation of profit at 95% Capacity

	₹
95% of capacity sales (i.e. ₹ 5,00,000 x 0.95) =	4,75,000
Less: Variable cost (i.e. ₹ 4,75,000 x 0.80) =	3,80,000
Contribution	95,000

Less: Fixed Cost		65,000
Profit		30,000

5. (a) Process- I Account

	Units	₹		*Units*	₹
To Material	10,000	45,000	By Normal wastage	300	
” Labour		6,100	” Abnormal wastage	100	628
” Overhead		9,800	(cost per unit, ₹ 6.278)		
			” Process No. 2	9,600	60,272
			(Transfer of		
			completed units)		
	10,000	60,900		10,000	60,900

Note : The cost of the abnormal wastage :

Normal Output = 10,000 units – 300 units = 9,700 units

Cost per unit of normal output = ₹ 60,900 ÷ 9,700 units = ₹ 6.278

Cost of 100 units = ₹ 6.278 × 100 = ₹ 628

Process- II Account

		Units	₹		*Units*	₹
To	Process No.1	9,600	60,272	By Normal wastage	576	–
”	Materials		23,500	(6% of 9,600)		
”	Labour		4,280	” Process No.3	9,300	1,00,845
”	Overhead		9,800	(cost per unit ₹ 10.84)		
”	Abnormal gain (cost per unit ₹ 10.84)	276	2,993			
		9,876	1,00,845		9,876	1,00,845

Note : The cost per unit is obtained by dividing ₹ 97,852 by 9,024 units, *i.e.,* 9,600 units less 576 units.

Process- III Account

		Units	*₹*			*Units*	*₹*
To	Process No. 2	9,300	1,00,845	By	Normal wastage	651	
”	Materials		11,200	”	Abnormal wastage	649	9,706
”	Labour		1,200		(Cost per unit ₹ 14.95)		
”	Overhead		16,100	”	Finished Stock	8,000	1,19,639
		9,300	1,29,345			9,300	1,29,345

Note : The calculation of the cost of abnormal wastage :

Normal Output = 9,300 units – 651 units = 8,649 units.

Cost per unit of normal output = ₹ 1,29,345 ÷ 8,649 = ₹ 14.95

Cost of 649 units is = ₹ 9706

(b) Treatment of normal and abnormal loss of material arising during storage in Cost Accounts.

The difference between the book balance and actual physical stock, which may either be gain or loss, should be transferred to Inventory Adjustment Account pending scrutiny to ascertain the reason for the difference.

If on scrutiny, the difference arrived at is considered as normal, then such a difference should be transferred to overhead control account and if abnormal, it should be debited to costing profit and loss account.

In the case of normal losses, an alternative method may be used. Under this method the price of the material issued to production may be inflated so as to cover the normal loss.

6. (a) Difference between Cost Accounting and Management Accounting

	Basis	Cost Accounting	Management Accounting
(i)	Nature	It records the quantitative aspect only.	It records both qualitative and quantitative aspect.
(ii)	Objective	It records the cost of producing a product and providing a service.	It Provides information to management for planning and co-ordination.
(iii)	Area	It only deals with cost Ascertainment.	It is wider in scope as it includes financial accounting, budgeting, taxation, planning etc.
(iv)	Recording of data	It uses both past and present figures.	It is focused with the projection of figures for future.

(v)	Development	Its development is related to industrial revolution.	It develops in accordance to the need of modern business world.
(vi)	Rules and Regulation	It follows certain principles and procedures for recording costs of different products.	It does not follow any specific rules and regulations.

(b) CVP Analysis:-Assumptions

(i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.

(ii) Total cost can be separated into two components: Fixed and variable

(iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.

(iv) Selling price, variable cost per unit and total fixed costs are known and constant.

(v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.

(c) Difference between Fixed and Flexible Budgets

	Fixed Budget	**Flexible Budget**
1.	It does not change with actual volume of activity achieved. Thus it is rigid	It can be re-casted on the basis of activity level to be achieved. Thus it is not rigid.
2.	It operates on one level of activity and under one set of conditions	It consists of various budgets for different level of activity.
3.	If the budgeted and actual activity levels differ significantly, then cost ascertainment and price fixation do not give a correct picture.	It facilitates the cost ascertainment and price fixation at different levels of activity.
4.	Comparisons of actual and budgeted targets are meaningless particularly when there is difference between two levels.	It provided meaningful basis of comparison of actual and budgeted targets.

OR

(d) *Job Costing:* It is a method of costing which is used when the work is undertaken as per the customer's special requirement. When an inquiry is received from the customer, costs expected to be incurred on the job are estimated and on the basis of this estimate, a price is quoted to the

customer. Actual cost of materials, labour and overheads are accumulated and on the completion of job, these actual costs are compared with the quoted price and thus the profit or loss on it is determined.

Job costing is applicable in printing press, hardware, ship-building, heavy machinery, foundry, general engineering works, machine tools, interior decoration, repairs and other similar work.

Batch Costing: It is a variant of job costing. Under batch costing, a lot of similar units which comprises the batch may be used as a unit for ascertaining cost. In the case of batch costing separate cost sheets are maintained for each batch of products by assigning a batch number. Cost per unit in a batch is ascertained by dividing the total cost of a batch by the number of units produced in that batch.

Such a method of costing is used in the case of pharmaceutical or drug industries, readymade garment industries, industries, manufacturing electronic parts of T.V. radio sets etc.

ANSWER OF MODEL TEST PAPER 4

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

PART I – Case Scenario based MCQs

1. c. 40,000 units.

Projected Sales of Product P – 24,000 units

Less: Opening stock of Product P- (4,000 units)

Product P to be produced- 20,000 units

Raw Material required- 50,000 units (20,000 x 2/80% yield)

Opening stock of Material R available- 10,000 units

Material to be procured- 40,000 units.

2. a. Order Quantity as per the current inventory policy – 10,000 units and EOQ – 1,000 units

Annual requirement - Procurement- 40,000 units

Order Quantity as per the current inventory policy (Quarterly) - 10,000 units

Ordering Cost- ₹125 per order

Carrying Cost- ₹ 10 per unit p.a.

EOQ - 1,000 units.

3. b. Savings from EOQ as Compared to current discount policy – ₹ 20,500

Associated Costs under EOQ:

Ordering Costs = No. of orders x Ordering cost per order

No of orders = Annual Requirement/ EOQ (or) current order quantity

Hence No of orders = 40

Therefore Ordering Cost = 40 x 125 = ₹ 5,000.

Carrying cost = Average Inventory x Carrying cost per unit per annum

Average Inventory = (EOQ/ current order quantity)/2

= 1,000/2 = 500

Carrying cost = 500 x 10 = ₹ 5,000

Associated Costs under EOQ = Ordering cost + Carrying Cost

= ₹ 10,000 ---------- A

Associated Costs under current inventory policy:

No of orders = 4 (Quarterly)

Ordering cost = 4 x 125 = ₹ 500

Average inventory = 10,000/2 = 5,000

Carrying cost = 5,000x10 = 50,000

Associated Costs = 50,000+500 = 50,500

Less: Discount = 20,000

Net cost = 30,500. ---------- B

Incremental Cost = B – A = 20,500

4. b. ₹ 6,400

Time taken under the Overtime regime 180 Hours + 20 Hours overtime = 200 Hours

Time to be taken under the Incentive regime

Units to be produced = 20,000 units

Units produced per hour under incentive scheme = 125 units

Time taken = 160 Hours

Time saved = 200 – 160 = 40 hours.

Incentive under Rowan scheme = (Time saved/Time allowed) x time taken x Rate

= (40/200) x 160x200 = ₹ 6,400.

5. b. ₹ 5,600

Cost under the Overtime scheme:

Base wage = 200 x 200 = 40,000

OT Premium = 20 x 200 = 4,000

Total Wages under Overtime scheme = 44,000

Cost under Incentive scheme:

Base Wage = 160 hours x 200 = 32,000

Incentive = 6,400

Total wages paid = 38,400

Savings in Incentive scheme over Overtime scheme = ₹ 5,600.

6. a ₹ 550

Contribution Margin per Unit = Selling Price per Unit - Variable Cost per Unit

= Variable Cost per unit = ₹ 500*+ ₹ 300**+ ₹ 100+ ₹ 50

Contribution Margin per Unit = ₹ 1,500 - ₹ 950 = ₹ 550

*Raw Material Cost Calculation

Let the cost of Plastic be x

1. The cost of Copper is ₹ 80 more than the cost of Plastic: Cost of Copper = x + 80
2. The cost of Other Materials is twice that of Plastic: Cost of Other Materials = 2x
3. The total Raw Material Cost per unit is ₹ 210 more than the combined cost of Copper & Plastic: x + (x+80) + 2x = (x + (x+80)) + 210

Solving for X = 105

Now, calculate the total cost of Raw Materials:

105 + (105+80) +210 = 500

So, the total cost of Raw Materials is ₹ 500.

** Labour Cost Calculation

1. The Labour Hour Rate is ₹ 100 per hour.
2. The total labour hours used in the last month were 36,000 hours.
3. The production units last month were 12,000 units (10000 normal units plus 2000 special order).

   Total Labour Cost = Labour Hour Rate × Total Labour Hours

   Total Labour Cost= ₹ 100 /hour × 36,000 hours = ₹ 3,600,000

   Per Unit Labour Cost = Total Labour Cost/Production Units

   Per Unit Labour Cost = ₹ 3,600,000/12000

   Per Unit Labour Cost = ₹ 300

   So, the per unit labour cost is ₹ 300.

7. c ₹ 27,27,025

- Break-even Point (Sales Revenue) = Total Fixed Costs / Contribution Margin Ratio
- Contribution Margin Ratio = Contribution Margin per Unit / Selling Price per Unit
- = ₹ 550 / ₹ 1,500 = 0.3667
- Break-even Point = ₹ 10,00,000 / 0.3667 ≈ ₹ 27,27,025

8. b 2,727 units

- Required Sales Volume (Units) = (Total Fixed Costs + Target Profit) / Contribution Margin per Unit
- = (₹ 10,00,000 + ₹ 5,00,000) / ₹ 550 ≈ 2,727.27 units ≈ 2,727 units

(rounded up)

9. b 2,198 units

- New Variable Cost per Unit = ₹ 950 + 10% of ₹ 950 = ₹ 950 + ₹ 95 = ₹ 1,045
- New Contribution Margin per Unit = ₹ 1,500 - ₹ 1,045 = ₹ 455
- New Break-even Point (Units) = Total Fixed Costs / New Contribution Margin per Unit
- = ₹ 10,00,000 / ₹ 455 ≈ 2198 units

10. c 45.05%

- Margin of Safety (Units) = Actual Sales - Break-even Sales
- = 4,000 - 2198 = 1,802 units
- Margin of Safety (%) = (Margin of Safety in Units / Actual Sales in Units) * 100
- = (1,802 / 4,000) * 100 ≈ 45.05%

11. d 9,129 units

Annual demand (D) = 50,000 units

Setup cost per batch (S) = ₹ 10,000

Carrying cost per unit per month (C) = ₹ 1

$$\text{EBQ} = \sqrt{\frac{2 \times \text{D} \times \text{S}}{\text{C}}}$$

= 9,129 units

12. a ₹ 3000(A)

Standard quantity = Standard quantity per sofa × Actual production

= 5 sq. ft x 1000 = 5,000 sq. ft.

Standard material cost = Standard quantity× Standard price per sq. ft.

= 5,000 sq. ft.×₹ 10/sq. ft.= ₹ 50,000

Actual material cost = Actual quantity used × Actual purchase price per sq. ft.

= 5,300 sq. ft.×₹ 10/sq. ft.= ₹ 53,000

Material cost variance = Standard material cost−Actual Material cost

= ₹ 50,000−₹ 53,000 = −₹ 3,000

13. b ₹ 100 per part type

Activity rate = budgeted overhead/budgeted activity level

= 4,00,000/4,000

= ₹ 100 per part type

14. a 52,000

Ton-kilometers = 10 tons x 200 kilometers x 26 days

= 52,000

15. b 83.33%

$$\text{Activity Ratio} = \frac{\text{Standard Hours}}{\text{Budgeted Hours}} \times 100$$

= 83.33%

PART-II Descriptive Questions

1. (a) Calculation of Cost of Production of Meta Ltd for the period…..

Particulars	Amount (₹)
Raw materials purchased	64,00,000
Add: Opening stock	2,88,000
Less: Closing stock	(4,46,000)
Material consumed	62,42,000
Wages paid	23,20,000
Prime cost	85,62,000
Repair and maintenance cost of plant & machinery	9,80,500
Insurance premium paid for inventories	26,000
Insurance premium paid for plant & machinery	96,000
Quality control cost	86,000
Research & development cost	92,600
Administrative overheads related with factory and production	9,00,000
	1,07,43,100
Add: Opening value of W-I-P	4,06,000
Less: Closing value of W-I-P	(6,02,100)
	1,05,47,000
Less: Amount realised by selling scrap	(9,200)
Add: Primary packing cost	10,200
Add: Expenses paid for pollution control and engineering & maintenance	22,000
Cost of Production	1,05,70,000

Notes:

(i) Other administrative overhead does not form part of cost of production.

(ii) Salary paid to Director (Technical) is an administrative cost.

(b) Memorandum Reconciliation Accounts

Dr. Cr.

Particulars	Amount (₹)	Particulars	Amount (₹)
To Net Loss as per Cost Accounts	48,700	By Administration overheads over recovered in Cost Accounts	65,000
To Factory overheads under absorbed in Cost Accounts	30,500	By Depreciation overcharged in Cost Accounts (₹ 2,70,000 –₹ 2,25,000)	45,000
To Provision for Income tax	52,400	By Transfer fees in Financial Accounts	10,200
To Obsolescence loss	20,700	By Notional Rent of own premises	49,000
To Overvaluation of closing stock in Cost Accounts**	9,500	By Overvaluation of Opening stock in Cost Accounts*	23,000
To Net Profit (as per Financial Accounts)	30,400		
	1,92,200		1,92,200

* Overvaluation of Opening Stock as per Cost Accounts

= Value in Cost Accounts – Value in Financial Accounts

= ₹ 1,38,000 – ₹ 1,15,000 = ₹ 23,000.

** Overvaluation of Closing Stock as per Cost Accounts

= Value in Cost Accounts – Value in Financial Accounts

= ₹ 1,22,000 – ₹ 1,12,500 = ₹ 9,500.

(c) Calculation of:

(i) Time saved and wages:

Workmen	A	B
Standard time (hrs.)	40	40

Actual time taken (hrs.)	32	30
Time saved (hrs.)	08	10
Wages paid @ ₹ x per hr. (₹)	32x	30x

(ii) Bonus Plan:

	Halsey	Rowan
Time saved (hrs.)	8	10
Bonus (₹)	4x	7.5x
	$\left[\frac{8 \text{ hrs} \times ₹ \text{ x}}{2}\right]$	$\left[\frac{10 \text{ hrs}}{40 \text{ hrs}} \times 30\text{hrs} \times ₹ \text{ x}\right]$

(iii) Total wages:

Workman A: 32x + 4x = ₹ 36x

Workman B: 30x + 7.5x = ₹ 37.5x

Statement of factory cost of the job

Workmen	A	B
	₹	₹
Material cost (assumed)	y	y
Wages (shown above)	36x	37.5x
Works overhead	240	225
Factory cost (given)	2,200	2,200

The above relations can be written as follows:

36x + y + 240 = 2,200 (i)

37.5x+ y+ 225 = 2,200 (ii)

Subtracting (i) from (ii) we get

1.5x – 15 = 0

or 1.5 x = 15

or x = ₹ 10 per hour

On substituting the value of x in (i) we get y = ₹ 1,600

Hence the wage rate per hour is ₹ 10 and the cost of raw material is ₹ 1,600 on the job.

2. (a) Statement of Equivalent Production

Input Details	Units	Output Particulars	Units	Equivalent Production					
				Material		Labour		Overhead	
				%	Units	%	Units	%	Units
Unit Introduced	45,000	Finished output	42,000	100	42,000	100	42,000	100	42,000
		Normal loss (2% of 45,000)	900	-	-	-	-	-	-
		Abnormal loss	300	100	300	80	240	60	180
		Closing W-I-P	1,800	100	1,800	50	900	40	720
	45,000		45,000		44,100		43,140		42,900

Statement of Cost

Particulars	Units	Rate (₹)	Amount (₹)	Amount (₹)
(i) Finished goods	42,000	17.9042		7,51,976.40
(ii) Abnormal Loss				
Material	300	11.5873	3,476.19	
Labour	240	2.1048	505.15	
Overhead	180	4.2121	758.18	4,739.52
(iii) Closing W-I-P:				
Material	1,800	11.5873	20,857.14	
Labour	900	2.1048	1,894.32	
Overhead	720	4.2121	3,032.71	25,784.17

Cost per Unit

Particulars	Amount (₹)	Units	Per Unit (₹)
(i) Direct Material :			
Unit Introduced	4,50,000		
Add: Material	65,500		
	5,15,500		
Less: Value of normal loss (900 units × ₹ 5)	(4,500)		
	5,11,000	44,100	11.5873
(ii) Labour	90,800	43,140	2.1048
(iii) Overhead	1,80,700	42,900	4.2121
			17.9042

Process – P A/c

Particulars	Units	Amount (₹)	Particulars	Units	Amount (₹)
To Input	45,000	4,50,000	By Normal loss	900	4,500
To Direct Material	-	65,500	By Abnormal loss	300	4,740
To Labour	-	90,800	By Finished goods	42,000	7,51,976
To Overhead		1,80,700	By Closing W-I-P	1,800	25,784
	45,000	7,87,000		45,000	7,87,000

Abnormal Loss A/c

Particulars	Units	Amount (₹)	Particulars	Units	Amount (₹)
To Process-B A/c	300	4,740	By Cost ledger control A/c or Bank A/c	300	600
			By Costing Profit & loss A/c	-	4,140
	300	4,740		300	4,740

(b) Treatment is as follows:

(i) **Credit for Recoveries:** The realised or realisable value of scrap or waste is deducted as it reduces the cost of production.

(ii) **Packing Cost (primary):** Packing material which is essential to hold and preserve the product for its use by the customer is added in the factory cost.

(iii) **Joint Products and By-Products:** Joint costs are allocated between/among the products on a rational and consistent basis. In case of by-products, the net realisable value of by-products is deducted from the cost of production.

(iv) **Quality Control Cost:** It is added in the factory cost as this is the cost of resources consumed towards quality control procedures.

3. (a) (i) Statement showing allocation of Joint Cost

Particulars	AB	PQ
No. of units Produced	1,800	3,000
Selling Price Per unit (₹)	40	30
Sales Value (₹)	72,000	90,000

Less:	Estimated Profit (AB -20% & PQ -30%)	(14,400)	(27,000)
	Cost of Sales	57,600	63,000
Less:	Estimated Selling Expenses (AB -15% & PQ -15%)	(10,800)	(13,500)
	Cost of Production	46,800	49,500
Less:	Cost after separation	(35,000)	(24,000)
	Joint Cost allocated	11,800	25,500

(ii) Statement of Profitability

Particulars	**MA (₹)**	**AB (₹)**	**PQ (₹)**
Sales Value (A)	4,00,000 (4,000x ₹ 100)	72,000	90,000
Less:- Joint Cost	1,75,100 (2,12,400 -11,800 - 25,500)	11,800	25,500
Cost after separation	-	35,000	24,000
Selling Expenses (MA- 30%, AB-15% & PQ-15%)	1,20,000	10,800	13,500
(B)	2,95,100	57,600	63,000
Profit (A –B)	1,04,900	14,400	27,000
Overall Profit = 1,04,900 + 14,400 + 27,000 = ₹ 1,46,300			

(b) Operating Cost Statement

	Particulars	**Total Cost Per annum (₹)**
A.	Fixed Charges:	
	Insurance	15,600
	Garage rent (₹ 2,400 × 4 quarters)	9,600
	Road Tax	5,000
	Salary of operating staff (₹ 7,200 × 12 months)	86,400
	Depreciation	68,000
	Total (A)	1,84,600
B.	Variable Charges:	
	Repairs (₹ 4,800 × 4 quarters)	19,200
	Tyres and Tubes (₹ 3,600 × 4 quarters)	14,400
	Diesel {(1,80,000 km. ÷ 5 km.) × ₹ 13}	4,68,000
	Oil and Sundries {(1,80,000 km. ÷ 100 km.) × ₹ 22}	39,600

	Total (B)	5,41,200
	Total Operating Cost (A+B)	7,25,800
	Add: Passenger tax (Refer to WN-1)	3,01,275
	Add: Profit (Refer to WN-1)	3,42,359
	Total takings	13,69,434

Calculation of Cost per passenger kilometre and one way fare per passenger:

$$\text{Cost per Passenger-Km.} = \frac{\text{Total Operating Cost}}{\text{Total Passenger - Km.}}$$

$$= \frac{₹\ 7,25,800}{40,32,000\ \text{Passenger} - \text{Km.}} = ₹\ 0.18$$

$$\text{One way fare per passenger} = \frac{\text{Total Takings}}{\text{Total Passenger} - \text{Km.}} \times 30\text{Km.}$$

$$= \frac{₹\,13,69,434}{40,32,000\ \text{Passenger - Km.}} \times 30\text{km} = ₹\ 10.20$$

Working Notes:

1. Let total taking be X then Passenger tax and profit will be as follows:

   X = ₹ 7,25,800 + 0.22 X + 0.25X

   X – 0.47 X = ₹ 7,25,800

   $X = \frac{₹7,25,800}{0.53}$ = ₹ 13,69,434

   Passenger tax = ₹ 13,69,434 × 0.22 = ₹ 3,01,275

   Profit = ₹ 13,69,434 × 0.25 = ₹ 3,42,359

2. Total Kilometres to be run during the year

   = 30 km.× 2 sides × 10 trips × 25 days × 12 months = 1,80,000 Kilometres

3. Total passenger Kilometres

   = 1,80,000 km. × 32 passengers × 70% = 40,32,000 Passenger-km.

4. (a) Working Notes:

(i) Total Productive hours = Estimated Working hours – Machine Maintenance hours

= 2,200 hours – 200 hours = 2,000 hours

(ii) $\text{Depreciation per annum} = \frac{₹\,10,000 - ₹\,1,000}{10\,\text{years}}$ = ₹ 900

(iii) Chemical solution cost per annum = ₹ 20 × 50 weeks = ₹ 1,000

(iv) Wages of attendants (per annum) = $\frac{₹\,120 \times 50\,\text{weeks}}{6\ \text{machines}}$ = ₹ 1,000

Calculation of Machine hour rate

Particulars	Amount (per annum)	Amount (per hour)
A. Standing Charge		
(i) Wages of attendants	1,000	
(ii) Departmental and general works overheads	3,000	
Total Standing Charge	4,000	
Standing Charges per hour $\left(\frac{4,000}{2,000}\right)$		2.0
B. Machine Expense		
(iii) Depreciation	900	0.45
(iv) Electricity $\left(\frac{₹\,0.09 \times 16\,\text{units} \times 1,900\,\text{hours}}{2,000\,\text{hours}}\right)$	-	1.37
(v) Chemical solution	1,000	0.50
(vi) Maintenance cost	1,800	0.90
Machine operating cost per hour (A + B)		5.22

(b) (i) Material Usage Variance = Std. Price (Std. Quantity – Actual Quantity)

= ₹ 45 (9,000 kgs. – 8,900 kgs.)

= ₹ 4,500 (Favourable)

(ii) Material Price Variance = Actual Quantity (Std. Price – Actual Price)

= 8,900 kgs. (₹ 45 – ₹ 46)

= ₹ 8,900 (Adverse)

(iii) Material Cost Variance = Std. Material Cost – Actual Material Cost

= (SQ × SP) – (AQ × AP)

= (9,000 kgs. × ₹ 45) – (8,900 kgs. × ₹ 46)

= ₹ 4,05,000 – ₹ 4,09,400

= ₹ 4,400 (Adverse)

(iv) Labour Efficiency Variance = Std. Rate (Std. Hours – Actual Hours)

= ₹ 50 ($\frac{9,000}{10} \times 8 \text{hours}$ – 7,000 hrs.)

= ₹ 50 (7,200 hrs. – 7,000 hrs.)

= ₹ 10,000 (Favourable)

(v) Labour Rate Variance = Actual Hours (Std. Rate – Actual Rate)

= 7,000 hrs. (₹ 50 – ₹ 52)

= ₹ 14,000 (Adverse)

(vi) Labour Cost Variance = Std. Labour Cost – Actual Labour Cost

= (SH × SR) – (AH × AR)

= (7,200 hrs. × ₹ 50) – (7,000 hrs. × ₹ 52)

= ₹ 3,60,000 – ₹ 3,64,000

= ₹ 4,000 (Adverse)

(vii) Variable Overhead Cost Variance = Std. Overhead for Actual Production – Actual Variable Overhead Cost

= (7,200 hrs. × ₹ 10) – ₹ 72,500

= ₹ 500 (Adverse)

(viii) Fixed Overhead Cost Variance = Absorbed Fixed Overhead – Actual Fixed Overhead

$= \frac{₹ 200}{10 \text{ kgs.}} \times 9,000 \text{kgs.} - ₹ 1,92,000$

= ₹ 1,80,000 – ₹ 1,92,000

= ₹ 12,000 (Adverse)

5. (a) Number of days in budget period = 4 weeks × 5 days = 20 days

Number of units to be produced

	Product-A (units)	**Product-B (units)**
Budgeted Sales	2,400	3,600
Add: Closing stock $\left(\frac{2,400 \text{units}}{20 \text{days}} \times 4 \text{days}\right)$ $\left(\frac{3,600 \text{units}}{20 \text{days}} \times 5 \text{days}\right)$	480	900
Less: Opening stock	400	200
Production (units)	2,480	4,300

(i) Material Purchase Budget

	Material-X (Kg.)	Material-Y (Kg.)
Material required:		
Product-A	12,400 (2,480 units × 5 kg.)	9,920 (2,480 units × 4 kg.)
Product-B	12,900 (4,300 units × 3 kg.)	25,800 (4,300 units × 6 kg.)
	25,300	35,720
Add: Closing stock $\left(\frac{25,300\text{kgs.}}{20\text{days}} \times 10\text{days}\right)$ $\left(\frac{35,720\text{kgs.}}{20\text{days}} \times 6\text{days}\right)$	12,650	10,716
Less: Opening stock	1,000	500
Quantity to be purchased	36,950	45,936
Rate per kg. of Material	₹ 4	₹ 6
Total Cost	₹ 1,47,800	₹ 2,75,616

(ii) Wages Budget

	Product-A (Hours)	Product-B (Hours)
Units to be produced	2,480 units	4,300 units
Standard hours allowed per unit	3	5
Total Standard Hours allowed	7,440	21,500
Productive hours required for production	$\frac{7,440\text{hours}}{80\%}=9,300$	$\frac{21,500\text{hours}}{80\%}=26,875$
Add: Non-Productive down time	1,860 hours. (20% of 9,300 hours)	5,375 hours. (20% of 26,875 hours)
Hours to be paid	11,160	32,250

Total Hours to be paid	= 43,410 hours (11,160 + 32,250)
Hours to be paid at normal rate	= 4 weeks × 40 hours × 180 workers = 28,800 hours
Hours to be paid at premium rate	= 43,410 hours – 28,800 hours = 14,610 hours
Total wages to be paid	= 28,800 hours × ₹ 25 + 14,610 hours × ₹ 37.5 = ₹ 7,20,000 + ₹ 5,47,875 = ₹ 12,67,875

(b) a.

1. Estimation of cost-driver rate

Activity	**Overhead cost (₹)**	**Cost driver**	**Cost driver rate (₹)**
Packaging	1,50,00,000	950 Packaging hours	15,789.47
Fridge	2,10,00,000	1,900 Fridge hours	11,052.63

2. Overhead cost for chocolate ice cream

Activity	**Overhead for a 1,000 ice cream batch**	**Amount (₹)**
Packaging	1 x ₹ 11,052.63	11,052.63
Fridge	0.5 x ₹ 15,789.47	7,894.74
Total		18,947.37

3. Operating profit for chocolate ice cream

Particulars	**Amount (₹)**
Revenue (1,000 x ₹ 75)	75,000.00
Less: Direct Material (1,000 x ₹ 15)	15,000.00
Less: Direct Labour (10,000 x ₹ 2)	20,000.00
Less: Overhead	18,947.37
Operating Profit	21,052.63

b. Overhead per direct hour

= Total Overhead / Total Direct Labour Hours

= ₹ 3,60,00,000 / 24,000 hours

= ₹ 1,500 per direct labour hour

Since it takes 10 direct labour hour per 1,000 Chocolate ice cream, the overhead is ₹ 15,000

Particulars	**Amount (₹)**
Revenue (1,000 x ₹ 75)	75,000.00
Less: Direct Material (1,000 x ₹ 15)	15,000.00
Less: Direct Labour (10,000 x ₹ 2)	20,000.00
Less: Overhead	15,000
Operating Profit	25,000

6. (a) The various types of responsibility centres are as follows:

(i) Cost Centres: The responsibility centre which is held accountable for *incurrence of costs* which are under its control. The performance of this responsibility centre is measured against pre-determined standards or budgets. The cost centres are of two types:

(a) Standard Cost Centre and (b) Discretionary Cost Centre

(a) Standard Cost Centre: Cost Centre where *output is measurable and input required for the output can be specified*. Based on a well-established study, an estimate of standard units of input to produce a unit of output is set. The actual cost for inputs is compared with the standard cost. Any deviation (variance) in cost is measured and analysed into controllable and uncontrollable cost. The manager of the cost centre is expected to comply with the standard and held responsible for adverse cost variances. The input-output ratio for a standard cost centre is clearly identifiable.

(b) Discretionary Cost Centre: The cost centre *whose output cannot be measured in financial terms, thus input-output ratio cannot be defined*. The cost of input is compared with allocated budget for the activity. Examples of discretionary cost centres are Research & Development department, Advertisement department where output of these department cannot be measured with certainty and co-related with cost incurred on inputs.

(ii) Revenue Centres: The responsibility centres which are accountable for *generation of revenue for the entity*. Sales Department for example, is responsible for achievement of sales target and revenue generation. Though, revenue centres do not have control on expenditures it incurs but sometimes expenditures related with selling activities like commission to sales person etc. are incurred by revenue centres.

(iii) Profit Centres: These are the responsibility centres which have *both responsibility of generation of revenue and incurrence of expenditures*. Since, managers of profit centres are accountable for both costs as well as revenue, profitability is the basis for measurement of performance of these responsibility centres. Examples of profit centres are decentralised branches of an organisation.

(iv) Investment Centres: These are the responsibility centres which are *not only responsible for profitability but also have the authority*

to make capital investment decisions. The performance of these responsibility centres are measured on the basis of Return on Investment (ROI) besides profit. Examples of investment centres are Maharatna, Navratna and Miniratna companies of Public Sector Undertakings of Central Government.

(b) Efficiency is usually related with performance and may be computed by comparing the time taken with the standard time allotted to perform the given job/task.

If the time taken by a worker on a job equals or less than the standard time, then he is rated efficient.

In case he takes more time than the standard time he is rated as inefficient.

$$\text{Efficiency in \%} = \frac{\text{Time allowed as per standard}}{\text{Time Taken}} \times 100$$

For efficiency rating of employees the following procedures may be followed:

1. **Determining standard time/performance standards:** The first step is to determine the standard time taken by a worker for performing a particular job/task. *The standard time can be determined by using Time & Motion study or Work study techniques*. While determining the standard time for a job/task a heterogeneous group of workers is taken and contingency allowances are added for determining standard time.
2. **Measuring Actual Performance of workers:** For computing efficiency rating it is necessary to develop a procedure for recording the actual performance of workers. The system developed should record the output of each worker along with the time taken by him.
3. **Computation of efficiency rating:** The efficiency rating of each worker can be computed by using the above mentioned Formula.

(c) The essential pre-requisites for integrated accounts include the following steps:

1. The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate up to the stage of prime cost or factory cost while other prefers full integration of the entire accounting records.
2. A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts.
3. An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts.

4. Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.

   Under this system there is no need for a separate cost ledger. Of course, there will be a number of subsidiary ledgers; in addition to the useful Customers' Ledger and the Purchase Ledger, there will be: (a) Stores Ledger; (b) Stock Ledger and (c) Job Ledger.

(d) After identification of the costs and benefits, it is now required to be quantified i.e., the cost and benefit should be measured and estimated. The estimation is done by following the two principles as discusses below:

(i) **Variability:** Variability means by how much a cost or benefit increased or decreased due to the choice of the option. Variable costs are the cost which differs under the different volume or activities. On the other hand, fixed costs remain same irrespective of volume and activities.

(ii) **Traceability:** Traceability of cost means degree of relationship between the cost and the choice of the option. Direct costs are directly assigned to the option on the other hand indirect costs needs to be apportioned to the option on some reasonable basis.

MODEL TEST PAPER 5

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. (a) Working notes:

Factory cost (33,00,000 x 0.25)	INR 8,25,000
Add: Freight (50,000 x 0.25)	INR 12,500
F.O.B. (Free On Board)	INR 8,37,500
Containers (2,00,000 x 0.25)	INR 50,000
Insurance (1,500 x 75)	INR 1,12,500
Ocean freight (2,000 x 75)	INR 1,50,000
CIF (Cost, Insurance and Freight)	= 8,37,500 + 1,12,500 + 1,50,000
	= INR 11,00,000
Custom duty	= 20% x 11,00,000 = INR 2,20,000
IGST	= 18% x (11,00,000 + 2,20,000)
	= INR 2,37,600
Penalty	= INR 15,000
Commission	
Indian	= 6% x 8,25,000 = INR 49,500
Srilankan	= 12% x 8,25,000 = INR 99,000

Particulars	Amount (INR)
Factory cost	8,25,000
Containers (50,000-38,000)	12,000
Insurance	1,12,500
Ocean freight	1,50,000
Freight inwards	12,500
Commission (49,500+99,000)	1,48,500
Custom duty non-refundable 20%* 2,20,000	44,000
TOTAL	**13,04,500**

2. (a) Good units = 8,000* (1-5%) = 7,600 UNITS

Normal loss to be absorbed in good units. No abnormal loss.

Particulars	**Product Zenga (INR)**
Factory cost	4,50,000
Other cost except commission, insurance and custom duty to be absorbed on the basis of quantity i.e. 12:8 or 3:2 (12,000+1,50,000+12,500)*2/5	69,800
Commission, insurance and custom duty to be absorbed on value basis 15:18 or 5:6 (1,48,500+1,12,500+44,000)*6/11	1,66,363.63
Total Cost	6,86,163.63
Number of good units	7,600 units
Per unit Cost	**90.28**

3. (b) Good units = 12000 * (1-5%) = 11400 units

Particulars	**Product Xendga (INR)**
Factory cost	3,75,000
Other cost (12,000+1,50,000+12,500)*3/5	1,04,700
Commission, insurance and custom duty (1,48,500+1,12,500+44,000)*5/11	1,38,636.36
Total Cost	618,336.36
Number of good units	11,400 units
Per unit Cost	**54.24**

4 (a) Custom duty 80% x 2,20,000 = 1,76,000

Add: IGST = 2,37,600

4,13,600

5. (c) Normal loss upto 8%

Abnormal loss 1%

Total cost of xendga INR 6,18,336.36

Total cost of zenga INR 6,86,163.63

Particulars	**XENGDA (INR)**	**ZENGA (INR)**	**(INR)**
Normal loss of 8%	960 units	640 units	
Good units after normal loss	11,040 units	7,360 units	
Per unit cost to be absorbed in	56 (6,18,336.36/11,040)	93.23 (6,86,163.63/7,360)	

good units (total costs/no of good units after normal loss)			
Abnormal loss in units 1%	120 units	80 units	
Loss in Profit & Loss	56 x 120 = 6,720	93.23 x 80= 7,458.4	14,178.4

6. (a) Material Mix Variance (Cotton + Polyester) = {(RSQ × SP) – (AQ × SP)}
= {7,08,570- 7,10,000}
= 1,430 (A)

Material Yield Variance (Cotton + Polyester) = {(SQ × SP) – (RSQ × SP)}
= {7,51,770 – 7,08,570}
= 43,200 (F)

7. (d) Material Price Variance (Cotton + Polyester) = {(AQ × SP) – (AQ × AP)
= {7,10,000 – 6,72,500}
= 37,500 (F)

8. (c) Material Cost Variance (Cotton + Polyester) = {(SQ × SP) – (AQ × AP)}
= {7,51,770 – 6,72,500}
= 79,270 (F)

Working Note

Material Variances:

Material	SQ (WN-1)	SP (₹)	SQ × SP (₹)	RSQ (WN-2)	RSQ × SP (₹)	AQ	AQ × SP (₹)	AP (₹)	AQ × AP (₹)
Cotton	9,397 m	50	4,69,850	8,857 m	4,42,850	9,000 m	4,50,000	48	4,32,000
Polyester	7,048 m	40	2,81,920	6,643 m	2,65,720	6,500 m	2,60,000	37	2,40,500
	16,445 m		**7,51,770**	**15,500 m**	**7,08,570**	**15,500 m**	**7,10,000**		**6,72,500**

WN-1: Standard Quantity (SQ):

Cotton - $\left(\frac{8,000m}{0.9\times14,000m}\times14,800m\right)$ = 9,396.8 or 9,397 m

Polyester- $\left(\frac{6,000m}{0.9\times14,000m}\times14,800m\right)$ = 7,047.6 or 7048 m

WN- 2: Revised Standard Quantity (RSQ):

Cotton - $\left(\frac{8,000m}{14,000m}\times15,500m\right)$ = 8,857.1 or 8857 m

Polyester - $\left(\frac{6,000m}{14,000m}\times 15,500m\right)$ = 6,642.8 or 6643 m

9. (b) Labour Efficiency Variance (Skilled + Unskilled) = {(SH × SR) – (AH × SR)}

= {61,496 – 63,920}

= 2,424 (A)

Labour Yield Variance (Skilled + Unskilled) = {(SH × SR) – (RSH × SR)}

= {61,496 – 63,052}

= 1,556 (A)

10. (a) Labour Cost Variance (Skilled + Unskilled) = {(SH × SR) – (AH × AR)}

= {61,496 – 62,380}

= 884 (A)

Working Note

Labour Variances:

Labour	SH (WN-3)	SR (₹)	SH × SR (₹)	RSH (WN-4)	RSH × SR (₹)	AH	AH × SR (₹)	AR (₹)	AH × AR (₹)
Skilled	1,116 hrs	37.50	41,850	1144	42,900	1,200	45,000	35.50	42,600
Unskilled	893 hrs	22.00	19,646	916	20,152	860	18,920	23.00	19,780
	2,009 hrs		61,496	2,060	63,052	2,060	63,920		62,380

WN- 3: Standard Hours (SH):

Skilled labour- $\left(\frac{0.95\times 1,000hr.}{0.90\times 14,000m.}\times 14,800m.\right)$ =1,115.87 or 1,116 hrs.

Unskilled labour- $\left(\frac{0.95\times 800hr.}{0.90\times 14,000m.}\times 14,800m.\right)$ = 892.69 or 893 hrs.

WN- 4: Revised Standard Hours (RSH):

Skilled labour- $\left(\frac{1,000hr.}{1,800hr.}\times 2,060hr.\right)$ = 1,144.44 or 1,144 hrs.

Unskilled labour- $\left(\frac{800hr.}{1,800hr.}\times 2,060hr.\right)$ = 915.56 or 916 hrs.

11. (d) Break-even point $= \frac{\text{Fixed Costs} + \text{Targeted Profit}}{(\text{Selling Price per Unit} - \text{Variable Cost per Unit})}$

= (5,00,000 + 2,00,000)/100 = 7,000 units

12. (d) Expected Output = Input Material−Normal Loss

Expected Output = 1,200 Kg−96 Kg=1,104 kg

Abnormal loss = 1,104 kg – 1,100 kg = 4 kg

13. (b) Overhead Rate = Total Estimated Machine Hours/Total Estimated Overhead Cost

= ₹ 6,00,000/30,000 = ₹ 20

Allocated Overhead = Overhead Rate x Machine Hours Used by the Job

= ₹ 20 x 300 hrs = ₹ 6,000

14. (c) Efficiency Ratio = Activity Ratio/Capacity Utilization Ratio

= 0.95/0.85 = 1.117 or 112%

15. (b) Total cost ₹ 20,000 + (300 units × (₹ 20 + ₹10)) = ₹ 29,000

PART-II– Descriptive Questions

1. (a) Increase in hourly rate of wages under Rowan Plan is ₹ 30 i.e. (₹180 – ₹ 150)

$$\frac{\text{Time Saved}}{\text{Time Allowed}} \times ₹150 = ₹30$$ (Please refer Working Note)

Or, $$\frac{\text{Time Saved}}{50\text{ hours}} \times ₹150 = ₹30$$

Or, Time saved = $\frac{1,500}{150}$ = 10 hours

Therefore, Time Taken is 40 hours i.e. (50 hours – 10 hours)

Effective Hourly Rate under Halsey System:

Time saved	= 10 hours	
Bonus @ 50%	= 10 hours × 50% × ₹ 150	= Rs 750
Total Wages	= (₹150 × 40 hours + ₹ 750)	= Rs 6,750
Effective Hourly Rate = ₹ 6,750 ÷ 40 hours		= ₹ 168.75

Working Note:

Effective hourly rate

$$= \frac{(\text{Time Taken} \times \text{Rate per hour}) + \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour}}{\text{Time Taken}}$$

Or, $$₹180 = \frac{\text{Time Taken} \times \text{Rate per hour}}{\text{Time Taken}} + \frac{\frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour}}{\text{Time Taken}}$$

Or, $$₹180 - \frac{\text{Time Taken} \times \text{Rate per hour}}{\text{Time Taken}} = \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour} \times \frac{1}{\text{Time Taken}}$$

Or, ₹ 180 – ₹ 150 = $\frac{\text{Time Saved}}{\text{Time Allowed}} \times ₹ 150$

(b)

	Particulars	**Amount in ₹**
A	**Operating costs:**	
	Petrol	400
	Oil	170
	Grease	90
	Wages to Driver	550
	Wages to Worker	350
	(A)	1,560
B	**Maintenance Costs:**	
	Repairs	170
	Overhead	60
	Tyres	150
	Garage Charges	100
	(B)	480
C	**Fixed Cost:**	
	Insurance	50
	License, Tax etc	80
	Interest	40
	Other Overheads	190
	Depreciation $\frac{(54,000 - 36,000)}{5 \times 12}$	300
	(C)	660
	Total Cost (A + B + C)	2,700

(i) Cost per days maintained = ₹ 2700/30 days = ₹ 90

(ii) Cost per days operated = ₹ 2700/25 days = ₹ 108

(iii) Cost per hours operated = ₹ 2700/300 hours = ₹ 9

(iv) Cost per kilometres covered = ₹ 2700/2500 kms = ₹ 1.08

(v) Cost per commercial tonne kms= ₹ 2700/5000 tonne kms = ₹ 0.54

*Commercial tonne kms = Total distance travelled x Average load

$= \frac{(4 \text{ tonnes} + 0 \text{ tonnes})}{2}$ x 2500 kms

= 5000 tonne kms

(c) (i) Calculation of most Economical Production Run

$$= \sqrt{\frac{2 \times 60,000 \times ₹\ 4,800}{12 \times 12}} = 2,000 \text{ Vaccine}$$

(ii) Calculation of Extra Cost due to processing of 15,000 vaccines in a batch

	When run size is 2,000 vaccines	When run size is 15,000 vaccines
Total set up cost	$= \frac{60,000}{2,000} \times ₹\ 4,800$ = ₹ 1,44,000	$= \frac{60,000}{15,000} \times ₹\ 4,800$ = ₹ 19,200
Total Carrying cost	½ × 2,000 × ₹ 144 = ₹ 1,44,000	½ × 15,000 × ₹ 144 = ₹ 10,80,000
Total Cost	₹ 2,88,000	₹ 10,99,200

Thus, extra cost = ₹ 10,99,200 – ₹ 2,88,000 = ₹ 8,11,200

2. (a) (i) Statement of Equivalent Production

Particulars	Input Units	Particulars	Output Units	Equivalent Production			
				Material		Labour & O.H.	
				%	Units	%	Units
Opening WIP	31,000	Completed and transferred to Process (Soldering)	5,42,500	100	5,42,500	100	5,42,500
Units introduced	5,89,000	Normal Loss (5% of 6,20,000)	31,000	--	--	--	--
		Abnormal loss (Balancing figure)	15,500	100	15,500	80	12,400
		Closing WIP	31,000	100	31,000	80	24,800
	6,20,000		6,20,000		5,89,000		5,79,700

Statement showing cost for each element

Particulars	Materials (₹)	Labour (₹)	Overhead (₹)	Total (₹)
Cost of opening work-in-process	12,40,000	2,32,500	6,97,500	21,70,000
Cost incurred during the month	2,29,40,000	55,64,500	1,66,93,500	4,51,98,000
Less: Realisable Value of normal scrap (₹ 20 × 31,000 units)	(6,20,000)	--	--	(6,20,000)
Total cost: (A)	2,35,60,000	57,97,000	1,73,91,000	4,67,48,000
Equivalent units: (B)	5,89,000	5,79,700	5,79,700	
Cost per equivalent unit: (C) = (A ÷ B)	**40.00**	**10.00**	**30.00**	**80.00**

(ii) Statement of Distribution of cost

	Amount (₹)	Amount (₹)
1. Value of units completed and transferred (5,42,500 units × ₹ 80)		4,34,00,000
2. Value of Abnormal Loss:		
- Materials (15,500 units × ₹ 40)	6,20,000	
- Labour (12,400 units × ₹ 10)	1,24,000	
- Overheads (12,400 units × ₹ 30)	3,72,000	11,16,000
3. Value of Closing W-I-P:		
- Materials (31,000 units × ₹ 40)	12,40,000	
- Labour (24,800 units × ₹ 10)	2,48,000	
- Overheads (24,800 units × ₹ 30)	7,44,000	22,32,000
Total		**4,67,48,000**

(iii) Process Account (Mounting)

Particulars	Units	(₹)	Particulars	Units	(₹)
To Opening W.I.P:			By Normal Loss (₹ 20 × 31,000 units)	31,000	6,20,000
- Materials	31,000	12,40,000	By Abnormal loss	15,500	11,16,000
- Labour	--	2,32,500	By Process A/c (Soldering)	5,42,500	4,34,00,000
- Overheads	--	6,97,500	By Closing WIP	31,000	22,32,000
To Materials introduced	5,89,000	2,29,40,000			
To Direct Labour		55,64,500			
To Overheads		1,66,93,500			
	6,20,000	4,73,68,000		6,20,000	4,73,68,000

(iv) Normal Loss A/c

Particulars	Units	(₹)	Particulars	Units	(₹)
To Process Account (Mounting)	31,000	6,20,000	By Cost Ledger Control A/c	31,000	6,20,000
	31,000	6,20,000		31,000	6,20,000

Abnormal Loss A/c

Particulars	Units	(₹)	Particulars	Units	(₹)
To Process Account (Mounting)	15,500	11,16,000	By Cost Ledger Control A/c	15,500	3,10,000

			By Costing Profit & Loss A/c		8,06,000
	15,500	11,16,000		15,500	11,16,000

(b) ABC is particularly needed by organisations for product costing in the following situations:

1. **High amount of overhead**: When production overheads are high and form significant costs, ABC is more useful than traditional costing system.
2. **Wide range of products**: ABC is most suitable, when, there is diversity in the product range or there are multiple products.
3. **Presence of non-volume related activities**: When non-volume related activities e.g. material handling, inspection set-up, are present significantly and traditional system cannot be applied, ABC is a superior and better option. ABC will identify non-value-adding activities in the production process that might be a suitable focus for attention or elimination.
4. **Stiff competition**: When the organisation is facing stiff competition and there is an urgent requirement to compute cost accurately and to fix the selling price according to the market situation, ABC is very useful. ABC can also facilitate in reducing cost by identifying non-value-adding activities in the production process that might be a suitable focus for attention or elimination.

3. (a)

Contribution *per tonne*	**(₹)**
Sales Price	185.00
Variable Cost:	
Material (W.N.-1)	90.00
Labour (W.N.-2)	13.00
Variable Overhead (W.N.-3)	40.00
Contribution	42.00
Profit Required (₹7,56,000 /1,26,000 tonnes)	6.00
Balance Contribution *per tonn*e for meeting Fixed Costs	36.00
Fixed Costs (W.N.-4)	54,72,000
Quantity Required (₹54,72,000 ÷ ₹36)	1,52,000 tonnes

Working Notes

1. Materials Cost per tonne in Year II ₹90

$$\left(\frac{₹1,29,60,000}{1,44,000 \text{tonnes}}\right)$$

2. Labour Cost per tonne in Year II ₹13

$\left(\frac{₹18,72,000}{1,44,000 tonnes}\right)$

3. Variable portion of Factory, Administration and Sell. Expenditure, etc

	₹
Total in Year II	1,12,32,000
Less: Increase otherwise than on account of increased turnover	8,10,000
	1,04,22,000
Less: Amount Spent in Year I	97,02,000
Increase	7,20,000
Increase in Quantity Sold	18,000 tonnes
Variable Expenses per tonne	₹40

$\left(\frac{₹7,20,000}{18,000 tonnes}\right)$

4. Fixed portion of Factory, Administration and Selling Expenses (Yr. 2)	₹1,12,32,000
Variable Expenses @ ₹ 40 per tonne	₹57,60,000
Fixed Portion	₹54,72,000

(b) Cost Sheet

Particulars	Units	Amount (₹)
Material		
Opening stock	10,000	5,00,00,000
Add: Purchases	4,90,000	25,20,00,000
Less: Closing stock	(17,500)	(85,00,000)
	4,82,500	**29,35,00,000**
Less: Normal wastage of materials realized @ ₹ 350 per unit	(2,000)	(7,00,000)
Material consumed		29,28,00,000
Direct employee's wages and allowances		5,50,50,000
Direct expenses- Royalty paid for production		3,10,50,000
Prime cost	4,80,500	**37,89,00,000**
Factory overheads - Consumable stores, depreciation etc.		3,42,00,000
Rearrangement design of factory machine		75,00,000
Gross Works Cost	4,80,500	**38,64,00,000**
Add: Opening WIP	20,000	1,20,00,000
Less: Closing WIP	(10,000)	(60,50,000)

Factory/Works Cost	4,90,500	**39,23,50,000**
Administration Overheads related to production		3,45,00,000
R&D expenses and Quality control cost		1,90,00,000
AMC cost of CCTV installed at factory premises		6,00,000
Guard Salaries for factory premises		14,00,000
Product Inspection		22,00,000
Add: Primary packaging cost @ ₹ 140 per unit		6,86,70,000
Cost of production	4,90,500	**51,87,20,000**
Administration Overheads		
Guard salaries for office		4,00,000
Audit and legal fees		29,00,000
Director's Salaries		60,00,000
EPF Director's Salaries @12%		7,20,000
AMC cost for CCTV installed at office.		2,00,000
Selling and Distribution Overheads		
Cost of maintaining website for online sale		60,75,000
Secondary packaging cost @ ₹ 20 per unit	4,90,500	98,10,000
Gift and snacks		30,50,000
Guard salaries for selling department		2,00,000
AMC cost for CCTV installed at selling department		2,00,000
Hiring charges of cars		25,00,000
Add: GST @5% on RCM basis		1,25,000
Television programme sponsorship cost		20,00,000
Customers' prize cost*		2,00,000
Selling expenses		3,94,50,000
Cost of sales		**58,64,75,000**
Add: Profit @ 25% on sales or 33.333% of cost		19,54,89,712
Sales value		**78,19,64,712**

***Customers' prize cost:**

	Amount (₹)
1st Prize	1,00,000
2nd Prize	50,000
3rd Prize	20,000

Consolation Prizes (3 × ₹10,000)	30,000
Total	**2,00,000**

***Customers' prize cost:**

	Amount (₹)
1st Prize	1,00,000
2nd Prize	50,000
3rd Prize	20,000
Consolation Prizes (3 × ₹10,000)	30,000
Total	**2,00,000**

4. Computation of overhead absorption rate

(as per the blanket rate)

Department	**Budgeted factory Overheads (₹)**	**Budgeted direct wages (₹)**
Operating	35,64,000	7,92,000
Assembly	9,66,000	24,15,000
Quality Control	4,20,000	10,50,000
Packing	12,37,500	6,93,000
Total	**61,87,500**	**49,50,000**

$$\text{Overhead absorption rate} = \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct wages}} \times 100$$

$$= \frac{61,87,500}{49,50,000} \times 100$$

= 125% of Direct wages

Selling Price of the Job No. 157

Particulars	**Operating (₹)**	**Assembly (₹)**	**Quality Control (₹)**	**Packing (₹)**	**Total (₹)**
Direct Materials	11,880	4,140	1,800	2,970	20,790
Direct Wages	2,376	2,484	1,080	594	6,534
Rectification cost of normal defectives			495		495
Overheads [(125% x (6,534 + 495)]					8,786.25
Total Factory Cost					**36,605.25**
Add: Mark-up (25% x ₹ 36,605.25)					9,151.31
Selling Price					**45,756.56**

(b) As the machinery is used to a varying degree in different departments, the use of **departmental rates** is to be preferred. The overhead recovery rates in different departments would be as follows:

(i) Operating Department: The use of machine hours is the predominant factor of production in Operating Department. Hence, machine hour rate should be used to recover overheads.

The overhead recovery rate based on machine hours would be calculated as follows:

$$\textbf{Machine hour rate} = \frac{\text{Budgeted factory Overheads}}{\text{Budgeted machine hours}}$$

$$= \frac{₹\ 35,64,000}{7,92,000} = ₹\ 4.50 \text{ per hour}$$

(ii) Assembly Department: Direct labour hours is the main factor of production in Assembly Department. Hence, direct labour hour rate should be used to recover overheads.

The overhead recovery rate based on direct labour hours would be calculated as follows:

$$\textbf{Direct labour hour rate} = \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct labour hours}}$$

$$= \frac{₹\ 9,66,000}{6,90,000} = ₹\ 1.40 \text{ per hour}$$

(iii) Quality Control Department: Direct labour hours is the main factor of production in Quality Control Department. Hence, direct labour hour rate should be used to recover overheads.

The overhead recovery rate based on direct labour hours would be calculated as follows:

$$\textbf{Direct labour hour rate} = \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct labour hours}}$$

$$= \frac{₹\ 4,20,000}{3,00,000} = ₹\ 1.40 \text{ per hour}$$

(iv) Packing Department: Direct labour hours is the main factor of production in Packing Department. Hence, direct labour hour rate should be used to recover overheads.

The overhead recovery rate based on direct labour hours would be calculated as follows:

$$\textbf{Direct labour hour rate} = \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct labour hours}}$$

$$= \frac{₹\ 12,37,500}{4,95,000} = ₹\ 2.50 \text{ per hour}$$

(c) Selling Price of Job No. 157

[based on the overhead rates calculated in (b) above]

Particulars	Operating (₹)	Assembly (₹)	Quality Control (₹)	Packing (₹)	Total (₹)
Direct Materials	11,880	4,140	1,800	2,970	20,790
Direct Wages	2,376	2,484	1,080	594	6,534
Rectification cost of normal defectives			495		495
Overheads (refer working note)					10,672
Total Factory Cost					**38,491**
Add: Mark-up (25% x ₹ 38,491)					9,622.75
Selling Price					**48,113.75**

Working note:

Overhead Statement

Department	Basis	Hours	Rate (₹)	Overheads (₹)
Operating	Machine hour	1,782	4.50	8,019
Assembly	Direct labour hour	828	1.40	1,159
Quality Control	Direct labour hour	360	1.40	504
Packing	Direct labour hour	396	2.50	990
			Total	**10,672**

(d) Department-wise statement of under or over recovery of overheads

(i) As per the current policy

Particulars	Operating (₹)	Assembly (₹)	Quality Control (₹)	Packing (₹)	Total (₹)
Direct wages (Actual)	9,50,400	18,63,000	8,10,000	8,91,000	45,14,400
Overheads recovered @ 125% of Direct wages: (A)	11,88,000	23,28,750	10,12,500	11,13,750	56,43,000
Actual overheads: (B)	38,61,000	5,79,600	2,52,000	13,36,500	60,29,100
(Under)/Over recovery of overheads: (A–B)	**(26,73,000)**	**17,49,150**	**7,60,500**	**(2,22,750)**	**(3,86,100)**

(ii) As per the method suggested

	Machine hours (Operating)	Direct labour hours (Assembly)	Direct labour hours (Quality Control)	Direct labour hours (Packing)	Total (₹)
Hours worked	9,50,400	6,21,000	2,70,000	5,94,000	
Rate/hour (₹)	4.50	1.40	1.40	2.50	
Overhead recovered (₹): (A)	42,76,800	8,69,400	3,78,000	14,85,000	70,09,200
Actual overheads (₹): (B)	38,61,000	5,79,600	2,52,000	13,36,500	60,29,100
(Under)/Over recovery: (A–B)	**4,15,800**	**2,89,800**	**1,26,000**	**1,48,500**	**9,80,100**

5. (a) (i) Statement of Profit as per financial records

(for the year ended March 31, 2024)

	(₹)		(₹)
To Opening stock of Finished Goods	48,250	By Sales	13,96,500
To Work-in-process	38,000	By Closing stock of finished Goods	44,500
To Raw materials consumed	5,00,000	By Work-in-Process	36,200
To Direct labour	4,20,000	By Interest received	42,000
To Factory overheads	3,56,000	By Loss	3,35,050
To Administration overheads	2,10,000		
To Selling & distribution overheads	84,000		
To Dividend paid	98,000		
To Bad debts	16,000		
To Stores adjustment	50,000		
To Income tax	34,000		
	18,54,250		**18,54,250**

Statement of Profit as per costing records

(for the year ended March 31,2024)

	(₹)
Sales revenue (A) *(14,250 units)*	13,96,500
Cost of sales:	
Opening stock *(545 units x ₹ 90)*	49,050
Add: Cost of production of 14,165 units *(Refer to working note 2)*	14,08,560

Less: Closing stock (₹ 99.44 x 460 units)	45,742
Production cost of goods sold (14,250 units)	14,11,868
Selling & distribution overheads	
(14,250 units x ₹ 6)	85,500
Cost of sales: (B)	14,97,368
Profit/Loss: {(A) – (B)}	(1,00,868)

(ii) Statement of Reconciliation

(Reconciling the profit as per costing records with the profit as per financial records)

	(₹)	*(₹)*
Loss as per Cost Accounts		(1,00,868)
Add: Administration overheads over absorbed (₹ 2,34,760 – ₹ 2,10,000)	24,760	
Opening stock overvalued (₹ 49,050 – ₹ 48,250)	800	
Interest received	42,000	
Selling & distribution overheads over recovered (₹ 85,500 – ₹ 84,000)	1,500	69,060
		(31,808)
Less: Factory overheads over recovered (₹ 3,56,000 - ₹2,52,000)	1,04,000	
Closing stock overvalued (₹ 45,742 – ₹ 44,500)	1,242	
Stores adjustment	50,000	
Income tax	34,000	
Dividend	98,000	
Bad debts	16,000	(3,03,242)
Loss as per financial accounts		(3,35,050)

Working notes:

1. Number of units produced	
	Units
Sales	14,250
Add: Closing stock	460
Total	14,710
Less: Opening stock	545
Number of units produced	14,165

2. **Cost Sheet**	
	(₹)
Raw materials consumed	5,00,000
Direct labour	4,20,000
Prime cost	9,20,000
Factory overheads	2,52,000
(60% of direct wages)	
Factory cost	11,72,000
Add: Opening work-in-process	38,000
Less: Closing work-in-process	36,200
Factory cost of goods produced	11,73,800
Administration overheads	2,34,760
(20% of factory cost)	
Cost of production of 14,165 units (Refer to working note 1)	14,08,560
Cost of production per unit: ₹ 14,08,560 / 14,165	99.44

(b) **PPP Ltd.**

Budget for 90% capacity level for the next year

Budgeted production (units)		**90,000**
	Per Unit (₹)	**Amount (₹)**
Direct Material (note 2)	22	19,80,000
Direct Labour (note 3)	12	10,80,000
Variable factory overhead (note 4)	2.10	1,89,000
Variable selling overhead (note 5)	4.40	3,96,000
Variable cost	**40.50**	**36,45,000**
Fixed factory overhead (note 4)		2,20,000
Fixed selling overhead (note 5)		1,15,000
Administrative overhead (note 6)		1,84,000
Fixed cost		**5,19,000**
Total cost		**41,64,000**
Add: Profit 25% on total cost		10,41,000
Sales		**52,05,000**
Contribution (Sales – Variable cost)		**15,60,000**

Working Notes:

1. At 80% level of capacity (current year), the production is 80,000 units.

   Thus, total level of capacity is 1,00,000 units.

   Therefore, Year 2 is at 70% capacity and Year 3 is at 60% capacity as the production is increasing by 10% of its capacity consistently.

2. Direct Material

	(₹)		(₹)
80% Capacity	16,00,000	70% Capacity	14,00,000
70% Capacity	14,00,000	60% Capacity	12,00,000
10% change in capacity	**2,00,000**	10% change in capacity	**2,00,000**

   For 10% increase in capacity, the total direct material cost regularly changes by ₹ 2,00,000

   Thus, Direct material cost (variable) = ₹ 2,00,000 ÷ 10,000 = ₹ 20

   After 10% increase in price, direct material cost per unit = ₹ 20 × 1.10 = ₹ 22

   Direct material cost at 90,000 budgeted units = 90,000 × ₹ 22 = ₹ 19,80,000

3. Direct labour:

	(₹)		(₹)
80% Capacity	8,00,000	70% Capacity	7,00,000
70% Capacity	7,00,000	60% Capacity	6,00,000
10% change in capacity	**1,00,000**	10% change in capacity	**1,00,000**

   For 10% increase in capacity, direct labour cost regularly changes by ₹ 1,00,000.

   Direct labour cost per unit = ₹ 1,00,000 ÷ 10,000 = ₹ 10

   After 20% increase in price, direct labour cost per unit = ₹ 10 × 1.20 = ₹ 12

   Direct labour for 90,000 units = 90,000 units × ₹ 12 = ₹ 10,80,000.

4. Factory overheads are semi-variable overheads:

	(₹)		(₹)
80% Capacity	3,60,000	70% Capacity	3,40,000
70% Capacity	3,40,000	60% Capacity	3,20,000
10% change in capacity	**20,000**	10% change in capacity	**20,000**

Variable factory overhead = ₹ 20,000 ÷ 10,000 units = ₹ 2

Variable factory overhead for 80,000 units = 80,000 × ₹ 2 = ₹ 1,60,000

Fixed factory overhead = ₹ 3,60,000 – ₹ 1,60,000 = ₹ 2,00,000.

Variable factory overhead after 5% increase = ₹ 2 × 1.05 = ₹ 2.10

Fixed factory overhead after 10% increase = ₹ 2,00,000 × 1.10 = ₹ 2,20,000.

5. Selling overhead is semi-variable overhead:

	(₹)		**(₹)**
80% Capacity	4,20,000	70% Capacity	3,80,000
70% Capacity	3,80,000	60% Capacity	3,40,000
10% change in capacity	**40,000**	10% change in capacity	**40,000**

Variable selling overhead = ₹ 40,000 ÷ 10,000 units = ₹ 4

Variable selling overhead for 80,000 units = 80,000 × ₹ 4 = ₹ 3,20,000.

Fixed selling overhead = ₹ 4,20,000 – ₹ 3,20,000 = ₹ 1,00,000

Variable selling overhead after 10% increase = ₹ 4 × 1.10 = ₹ 4.40

Fixed selling overhead after 15% increase = ₹ 1,00,000 × 1.15 = ₹ 1,15,000

6. Administrative overhead is fixed:

After 15% increase = ₹ 1,60,000 × 1.15 = ₹ 1,84,000

6. (a) The Practical difficulties with which a Cost Accountant is usually confronted with while installing a costing system in a manufacturing company are as follows:

(i) *Lack of top management support:* Installation of a costing system does not receive the support of top management. They consider it as interference in their work. They believe that such, a system will involve additional paperwork. They also have a misconception in their minds that the system is meant for keeping a check on their activities.

(ii) *Resistance from cost accounting departmental staff*: The staff resist because of fear of loosing their jobs and importance after the implementation of the new system.

(iii) *Non co-operation from user departments:* The foremen, supervisor and other staff members may not cooperate in providing requisite data, as this would not only add to their responsibilities but will also increase paper work of the entire team as well.

(iv) *Shortage of trained staff:* Since cost accounting system's installation involves specialised work, there may be a shortage of trained staff.

To overcome these practical difficulties, necessary steps required are:

- Sell the idea to top management and convince them of the utility of the system.
- Resistance and non co-operation can be overcome by behavioural approach. To deal with the staff concerned effectively.
- Proper training should be given to the staff at each level
- Regular meetings should be held with the cost accounting staff, user departments, staff and top management to clarify their doubts/ misgivings.

(b) Buttermilk is a by-product of butter and treatment of by-product in cost accounting is as follows.

(i) When they are of small total value, the amount realized from their sale may be dealt as follows:

- Sales value of the by-product may be credited to Profit and Loss Account and no credit be given in Cost Accounting. The credit to Profit and Loss Account here is treated either as a miscellaneous income or as additional sales revenue.
- The sale proceeds of the by-product may be treated as deduction from the total costs. The sales proceeds should be deducted either from production cost or cost of sales.

(ii) When the by-products are of considerable total value: Where by-products are of considerable total value, they may be regarded as joint products rather than as by- products. To determine exact cost of by-products the costs incurred upto the point of separation, should be apportioned over by-products and joint products by using a logical basis.

(iii) When they require further processing: In this case, the net realisable value of the by-product at the split-off point may be arrived at by subtracting the further processing cost from realisable value of by-product. If the value is small, it may be treated as discussed in (i) above.

(c)

Demerits of Fixed Budget
1. It does not suite a dynamic organization and may give misleading results. A poor or good performance may remain un-noticed.
2. It is not suitable for long period.

3.	It is also found unsuitable particularly when the business conditions are changing constantly.
4.	Accurate estimates are not possible.

Demerits of Flexible Budget	
1.	The formulation of flexible budget is possible only when there is proper accounting system maintained, perfect knowledge about the factors of production and various business circumstances is available.
2.	Flexible Budget also requires the system of standard costing in business.
3.	It is very expensive and labour oriented.

OR

(c) Objectives of time keeping and time booking: Time keeping has the following two objectives:

(i) *Preparation of Payroll:* Wage bills are prepared by the payroll department on the basis of information provided by the time keeping department.

(ii) *Computation of Cost:* Labour cost of different jobs, departments or cost centers are computed by costing department on the basis of information provided by the time keeping department.

The objectives of time booking are as follows:

(i) To ascertain the labour time spent on a job and the idle labour hours.

(ii) To ascertain labour cost of various jobs and products.

(iii) To calculate the amount of wages and bonus payable under the wage incentive scheme.

(iv) To compute and determine overhead rates and absorption of overheads under the labour and machine hour method.

(v) To evaluate the performance of labour by comparing actual time booked with standard or budgeted time.

ANSWER OF MODEL TEST PAPER 6

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. (c) ₹ 1,50,000 (A)

Fixed Overhead Cost Variance = Absorbed Fixed Overheads - Actual Fixed Overheads

Absorbed Fixed Overheads = (Budgeted Fixed Overheads / Budgeted Production) x Actual Production

= (₹ 20,00,000 / 10,000 units) x 9,500 units

= ₹ 19,00,000

Adjusted Actual Fixed Overheads = ₹ 19,50,000 + ₹ 1,00,000 = ₹ 20,50,000

Fixed Overhead Cost Variance = ₹ 19,00,000 - ₹ 20,50,000 = ₹ 1,50,000 (Adverse)

2. (d) ₹ 1,00,000 (A)

Fixed Overhead Volume Variance = (Actual Production - Budgeted Production) x Standard Fixed Overhead Rate per Unit

Standard Fixed Overhead Rate per Unit = ₹ 20,00,000 / 10,000 units = ₹ 200 per unit

Fixed Overhead Volume Variance = (9,500 units - 10,000 units) x ₹ 200

= 500 units x ₹ 200

= ₹ 1,00,000 (Adverse)

3. (c) 0

Variable Overhead Efficiency Variance = (Standard Hours for Actual Production - Actual Hours Worked) x Standard Variable Overhead Rate

Standard Hours for Actual Production = 9,500 units x 1.5 hours/unit = 14,250 hours

Variable Overhead Efficiency Variance = (14,250 – 14,250) x ₹ 50 = 0

4. (b) ₹ 42,500 (A)

Variable Overhead Expenditure Variance = (Standard Rate - Actual Rate) x Actual Hours Worked

Total Variable Overhead for Actual Hours: (10,000 x ₹ 50) + (4,250 x ₹ 60) = ₹ 5,00,000 + ₹ 2,55,000 = ₹ 7,55,000

Variable Overhead Expenditure Variance = (₹ 50 x 14,250 hours) - ₹ 7,55,000

= ₹ 42,500 (Adverse)

5. (b) ₹ 50,000 (A)

Fixed Overhead Expenditure Variance = Budgeted Fixed Overheads - Actual Fixed Overheads

= ₹ 20,00,000 - ₹ 20,50,000

= ₹ 50,000 (Adverse)

6. (b) ₹ 75,47,750

Funds required for foreign order:

Costs	**Amounts**
Direct material per unit	90
Add: Direct labour per unit	60
Add: special services per unit	40
	190
Add: packaging per unit (20% x prime cost, 20% x (90 + 60 + 80))	46
Variable cost per unit	236
Total variable cost (236x30,000)	**70,80,000**
Add: freight	80,000
Add: professional fees	25,000
Add: custom charges (500kg x 80% x 80 x 6)	1,92,000
	73,77,000
Add: shipping ((500x80%/10) x 2,800)	1,12,000
Add: insurance	1,11,000
Funds required	**76,00,000**

Net amount of interest earned (interest earned in 9.25% and paid is 6.50% for 3 months) = 76,00,000 x (9.25% - 6.50%) x 3/12 = 52,250

So, net cash outflow due to export order = 76,00,000 - 52,250 = 75,47,750

7. (a) $ 4.23

Minimum price :-

Variable cost (net)	75,47,750
Add: fixed cost recovery (110 x 10,000 units)	11,00,000
Add: loss of profit (200 x 10,000 units)	20,00,000
Minimum price	1,06,47,750
Minimum price per unit 1,06,47,750/30,000	₹ 354.925
Minimum price is $ ($1 = ₹ 83.864)	$4.23

8. (c) ₹ 39,94,250

PROFIT EARNED:

SALES ($4.90 x 30,000 x RS. 86)	**₹ 1,26,42,000**
(-) Variable cost (net)	(75,47,750)
(-) allotted fixed cost (10,000 units x110)	(11,00,000)
PROFIT	₹ 39,94,250

9. (d) ₹ 50,94,250

CASH INFLOW:

SALES ($4.90 x 30,000 x RS. 86)	₹ 1,26,42,000
(-) Variable cost (net)	(75,47,750)
CASH INFLOW	**₹ 50,94,250**

10. (a) ₹ 19,94,250

Incremental benefits:

SALES ($4.90 x 30,000 x RS. 86)	₹ 1,26,42,000
(-) Variable cost (net)	(75,47,750)
(-) allotted fixed cost (10,000 units x110)	(11,00,000)
(-) loss of profit (10,000x200)	(20,00,000)
Incremental benefits	**19,94,250**

11. (c) Replaced- 30 employees, left and discharged- 18 employees and recruited & joined- 42 employees

(i) Number of employees replaced:

Employee Turnover rate (Replacement method)

$$= \left(\frac{\text{No. of Replacements}}{\text{Average number of employees on roll}} \times 100\right)$$

Or, $$\left(\frac{15}{100}\right) = \left(\frac{\text{No. of replacements}}{200}\right)$$

Or, Number of Replacements $= \left(\frac{200 \times 15}{100}\right) = 30$

(ii) Number of employees left and discharged:

Employee turnover rate (Separation method)

$$= \left(\frac{\text{No. of Separations (S)}}{\text{Average number of employees on roll}} \times 100\right)$$

Or, $\left(\frac{9}{100}\right) = \left(\frac{S}{200}\right)$

Or, $S = 18$

Hence, number of employees left and discharged = 18

(iii) Number of employees recruited and joined:

Employee turnover rate (Flux method)

$$= \left(\frac{\text{No. of Separations (S) + No. of Accessions (A)}}{\text{Average number of employees on roll}} \times 100\right)$$

Or, $\left(\frac{30}{100}\right) = \left(\frac{18 + A}{200}\right)$

Or, $A = \left(\frac{6000}{100} - 18\right) = 42$

Hence, number of employees recruited and joined = 42

12. (c) Losses on the sale of investments not treated in Financial Accounts

13. (d) 1,00,000 units

Current Year production = 60% of 2,00,000 units

= 1,20,000 units

Previous Year production $= \left(\frac{\text{1,20,000 units}}{\text{1.5 times}}\right)$

= 80,000 units

Particulars	Previous Year	Current Year	Difference
Sales (Units)	80,000	1,20,000	40,000
Total Cost (₹)	44,72,000	59,28,000	14,56,000

Variable Cost per unit $= \frac{\text{Change in Total Cost}}{\text{Change in sales volume}}$

$= \left(\frac{₹\ 14,56,000}{40,000 \text{ units}}\right)$

= ₹ 36.40 per unit

Total Fixed Cost (₹) = ₹ 59,28,000-(1,20,000 units × ₹ 36.40)

= ₹ 15,60,000

Break- even point (in units) $= \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$

$$= \left(\frac{₹\ 15,60,000}{₹\ 52 - ₹\ 36.40}\right)$$

= 1,00,000 units

14. (c) Marketing and Sales support- ₹ 28,62,01,000, Operations- ₹ 18,03,52,500, I.T. Cost- ₹ 30,71,90,000 and Support functions- ₹ 19,92,56,500

Calculation of total cost for 'Max Jivan' Insurance policy

	Particulars	Amount (₹)	Amount (₹)
a.	**Marketing and Sales support:**		
	- Policy development cost	4,86,50,000	
	- Cost of marketing	19,30,71,000	
	- Sales support expenses	4,44,80,000	28,62,01,000
b.	**Operations:**		
	- Policy issuance cost	4,10,05,000	
	- Policy servicing cost	13,40,65,500	
	- Claim management cost	52,82,000	18,03,52,500
c.	**IT Cost**		30,71,90,000
d.	**Support functions**		
	- Postage and logistics	4,50,36,000	
	- Facilities cost	6,49,82,500	
	- Employees cost	2,25,18,000	
	- Office administration cost	6,67,20,000	19,92,56,500
	Total Cost		**97,30,00,000**

15. (a) ₹ 65,00,000

Calculation of Net joint costs to be allocated:

Particulars	Amount (₹)
Joint Costs	1,30,00,000
Less: Net Realizable value of by-product R^{12} (81,250 kg. × ₹ 40)	32,50,000
Net joint costs to be allocated	97,50,000

Therefore, the amount of joint product cost to be allocated to P^2 by using the physical volume method

$$= \left(\frac{\text{Physical quantity of } P^2}{\text{Total quantity}}\right) \text{x Net joint costs to be allocated}$$

$$= \left(\frac{3,90,000 \text{ kg}}{5,85,000 \text{ kg}}\right) \text{x } ₹\ 97,50,000 = ₹\ 65,00,000$$

PART-II Descriptive Questions

1. (a) (i) Statement of Joint Cost allocation of inventories of gasoline, diesel and Heavy fuel oil (HFO)

(By using Net Realisable Value Method)

	Products			Total
	Gasoline	Diesel	Heavy fuel oil (HFO)	
	(₹)	(₹)	(₹)	(₹)
Final sales value of total production (Working Note 1)	13,17,600 (3,294 × ₹ 400)	15,84,900 (5,283 × ₹ 300)	13,69,800 (6,849 × ₹ 200)	42,72,300
Less: Additional cost	-	-	(7,44,000)	(7,44,000)
Net realisable value (at split-off point)	13,17,600	15,84,900	6,25,800	35,28,300
Joint cost allocated (Working Note 2)	**5,60,156**	**6,73,795**	**2,66,049**	**15,00,000**

(ii) Cost of goods sold

(By using Net Realisable Value Method)

	Products			Total
	Gasoline	Diesel	Heavy fuel oil (HFO)	
	(₹)	(₹)	(₹)	(₹)
Allocated joint cost (from (i))	5,60,156	6,73,795	2,66,049	15,00,000
Additional costs	--	--	7,44,000	7,44,000
Cost of goods available for sale (CGAS)	5,60,156	6,73,795	10,10,049	22,44,000
Less: Cost of ending inventory (Working Note 1)	2,75,485 (CGAS × 49.18%)	68,862 (CGAS × 10.22%)	33,231 (CGAS × 3.29%)	3,77,578
Cost of goods sold	**2,84,671**	**6,04,933**	**9,76,818**	**18,66,422**

Working Notes

1. Total production of three products for the year

Products	Quantity sold (in gallon)	Quantity of ending inventory (in gallon)	Total production	Ending inventory percentage (%)
(1)	**(2)**	**(3)**	**(4) = [(2) + (3)}**	**(5) = (3)/ (4)**
Gasoline	1,674	1,620	3,294	49.18

Diesel	4,743	540	5,283	10.22
Heavy fuel oil (HFO)	6,624	225	6,849	3.29

2. Joint cost apportioned to each product

$$\frac{\text{Total Joint cost}}{\text{Total Net Realisable Value}} \times \text{Net Realisable Value of each product}$$

Total cost of Gasoline	$\frac{₹\ 15,00,000}{₹\ 35,28,300}$ x ₹ 13,17,600	₹ 5,60,156
Total cost of Diesel	$\frac{₹\ 15,00,000}{₹\ 35,28,300}$ x ₹ 15,84,900	₹ 6,73,795
Total cost of Heavy fuel oil (HFO)	$\frac{₹\ 15,00,000}{₹\ 35,28,300}$ x ₹ 6,25,800	₹ 2,66,049

(b) Stores Ledger Control A/c

Particulars	(₹)	Particulars	(₹)
To Balance b/d	9,000	By Work in Process	48,000
To General Ledger Adjustment A/c	48,000	By Overhead Control A/c	6,000
To Work in Process A/c	24,000	By Overhead Control A/c (Deficiency)	1,800*
		By Balance c/d	25,200
	81,000		81,000

*Deficiency assumed as normal (alternatively can be treated as abnormal loss)

Work in Progress Control A/c

Particulars	(₹)	Particulars	(₹)
To Balance b/d	18,000	By Stores Ledger Control a/c	24,000
To Stores Ledger Control A/c	48,000	By Costing P/L A/c (Balancing figures being Cost of finished goods)	1,20,000
To Wages Control A/c	18,000	By Balance c/d	12,000
To Overheads Control a/c	72,000		
	1,56,000		1,56,000

Overheads Control A/c

Particulars	(₹)	Particulars	(₹)
To Stores Ledger Control A/c	6,000	By Work in Process A/c	72,000
To Stores Ledger Control A/c	1,800	By Balance c/d (Under absorption)	13,800

To Wages Control A/c (₹ 21,000- ₹18,000)	3,000		
To Gen. Ledger Adjust. A/c	75,000		
	85,800		85,800

Costing Profit & Loss A/c

Particulars	(₹)	Particulars	(₹)
To Work in progress	1,20,000	By Gen. ledger Adjust. A/c (Sales) (1,20,000 + 12,000)	1,32,000
To Gen. Ledger Adjust. A/c (Profit)	12,000		
	1,32,000		1,32,000

(c) Calculation of earnings for workers under different incentive plans:

Halsey's Premium Plan:

	Worker – A	Worker – B
Actual time taken	40 hours	40 hours
Standard time for actual Production	44 hours $(\frac{176\ Pcs \times 15\ Min.}{60\ Min.})$	35 hours $(\frac{140\ Pcs \times 15\ Min.}{60\ Min.})$
Minimum Wages	₹ 1,600 (40 hours x ₹ 40)	₹ 1,600 (40 hours x ₹ 40)
Bonus	₹ 80 {50% (44-40) x ₹40}	No bonus
Earning	₹ 1,680	₹ 1,600
Rowan's Premium Plan:		
Minimum Wages (as above)	₹ 1,600	₹ 1,600
Bonus	= ₹ 145.45 $(\frac{4\ hours}{44\ hours} \times 40\ hours \times ₹40)$	No bonus
Earning	₹ 1,745.45	₹ 1,600

2. (a) (i) Statement Showing Distribution of Overheads of Baba Ltd.

Particulars	Basis	Total	Production Departments			Service Departments	
			X1	Y2	Z3	QC	M
		(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Direct wages	Actual	13,56,000	-	-	-	12,00,000	1,56,000
Rent & rates	Area	40,00,000	8,00,000	10,00,000	12,00,000	8,00,000	2,00,000

General lighting	Light points	4,80,000	80,000	1,20,000	1,60,000	80,000	40,000
Indirect wages	Direct wages	15,51,200	4,80,000	3,20,000	4,80,000	2,40,000	31,200
Power	H.P.	12,00,000	4,80,000	2,40,000	4,00,000	80,000	–
Depreciation of machines	Value of machines	80,00,000	19,20,000	25,60,000	32,00,000	1,60,000	1,60,000
Sundries	Direct wages	77,56,000	24,00,000	16,00,000	24,00,000	12,00,000	1,56,000
		2,43,43,200	**61,60,000**	**58,40,000**	**78,40,000**	**37,60,000**	**7,43,200**

(ii) Redistribution of Service Department's Expenses over Production Departments

	X1 (₹)	**Y2 (₹)**	**Z3 (₹)**	**QC (₹)**	**M (₹)**
Total overhead distributed as above	61,60,000	58,40,000	78,40,000	37,60,000	7,43,200
Dept. QC Overheads apportioned (20:30:40:—:10)	7,52,000	11,28,000	15,04,000	-37,60,000	3,76,000
Dept. M overheads apportioned (40:20:30:10:—)	4,47,680	2,23,840	3,35,760	1,11,920	-11,19,200
Dept. QC Overheads apportioned (20:30:40:—:10)	22,384	33,576	44,768	-1,11,920	11,192
Dept. M overheads apportioned (40:20:30:10:—)	4,477	2,238	3,358	1,119	-11,192
Dept. QC Overheads apportioned (20:30:40:—:10)	224	336	448	-1,119	112
Dept. M overheads apportioned (40:20:30:10:—)	45	22	34	11	-112
Dept. QC Overheads apportioned (20:30:40:—:10)	2	3	5	-11	-
Total	**73,86,812**	**72,28,015**	**97,28,373**		
Working hours	6,140	8,950	4,838		
Rate per hour	**1,203**	**808**	**2,011**		

(iii) Determination of total cost of a bicycle:

Particulars	**(₹)**
Direct material cost	20,000
Direct labour cost	12,000
Overhead cost (See working note)	14,885
	46,885

Working Note:

Overhead cost

= (₹ 1,203 × 4 hrs.) + (₹ 808 × 5 hrs.) + (₹ 2,011 × 3 hrs.)

= ₹ 4,812 + ₹ 4,040 + ₹ 6,033 = ₹ 14,885

(b) Determination of total sales value of Luxury pens

Particulars	**Amount per Batch (₹)**	**Amount for 2,400 units or 20 batches (₹)**
Direct materials	57,375	11,47,500
Direct wages	6,750	1,35,000
Batch set-up cost	18,900	3,78,000
Production overheads (20% of direct wages)	1,350	27,000
Total Production Cost	84,375	**16,87,500**
Selling, distribution and administration cost (15% of Total Production cost)	12,656	2,53,125
Total Cost	97,031	**19,40,625**
Add: Profit (25% of Sales value or 1/3rd of Total cost)	32,344	6,46,875
Total Sales value	1,29,375	**25,87,500**

3. (a) Statement of Cost of YSPP Ltd. for the year ended 31st March:

S. NO.	**PARTICULARS**	**(₹)**	**(₹)**
(I)	Material consumed:		
	Raw materials purchased	35,00,00,000	
	Freight inwards	39,22,100	
	Add: opening stock of raw materials	63,00,000	
	Less: closing stock of raw materials	(33,60,000)	35,68,62,100
(II)	Direct employee (labour) cost:		
	Wages paid to factory workers	1,02,20,000	
	Contribution made towards employees' PF & ESIS	12,60,000	1,14,80,000
(III)	Direct expenses:		

	Hire charges paid for hiring specific equipment	8,40,000	
	Amount paid for power & fuel	16,17,000	
	Amortised cost of moulds and patterns	7,84,000	
	Job charges paid to job workers	28,42,000	60,83,000
	Prime cost		**37,44,25,100**
(IV)	Works/ factory overheads:		
	Lease rent paid for production assets	3,92,000	
	Depreciation on factory building	2,94,000	
	Depreciation on plant & machinery	4,41,000	
	Repairs & maintenance paid for plant & machinery	1,68,000	
	Insurance premium paid for plant & machinery	1,09,200	
	Insurance premium paid for factory building	63,350	
	Insurance premium paid for stock of raw materials & WIP	1,26,000	
	Salary paid to supervisors	4,41,000	20,34,550
	Gross factory cost		37,64,59,650
	Add: opening value of w-i-p		32,20,000
	Less: closing value of w-i-p		(30,45,000)
	Factory cost		**37,66,34,650**
(V)	Quality control cost:		
	Expenses paid for quality control check activities	68,600	
	Salary paid to quality control staffs	3,36,700	4,05,300
(VI)	Research & development cost paid for improvement in production process		63,700
(VII)	Administration cost related with production:		
	-Expenses paid for administration of factory work	4,15,100	

	-Salary paid to production control manager	33,60,000	37,75,100
(VIII)	Add: primary packing cost		3,36,000
	Cost of production		**38,12,14,750**
	Add: opening stock of finished goods		38,50,000
	Less: closing stock of finished goods		(63,00,000)
	Cost of goods sold		37,87,64,750
(IX)	Administrative overheads:		
	Depreciation on office building	1,96,000	
	Salary paid to manager-finance & accounts	32,13,000	
	Salary paid to general manager	43,96,000	
	Fee paid to auditors	6,30,000	
	Fee paid to independent directors	7,70,000	92,05,000
(X)	Selling overheads:		
	Repairs & maintenance paid for sales office building	63,000	
	Salary paid to manager- sales & marketing	35,42,000	36,05,000
(XI)	Distribution overheads:		
	Depreciation on delivery vehicles	3,01,000	
(XII)	Packing cost paid for re-distribution of finished goods	3,92,000	6,93,000
	Cost of sales		**39,22,67,750**

Note: Demurrage is a type of penalty, thus will not form part of cost.

(b) Basic Data:

A (Number of units to be purchased annually) = 10,000 units

O (Ordering cost per order) = ₹ 40

C (Annual cost of storage per unit) = ₹ 5

Purchase price per unit = ₹ 80 + ₹ 20 (Insurance charges)

= ₹ 100

(Note: Cash discount is treated as an interest and finance item and thus, it is ignored.)

Computations:

(i) Re-ordering level = Maximum usage per period × Maximum lead time

(ROL) = 40 units per day × 30 days

= **1,200 units**

(ii) Maximum level = ROL + ROQ – [Min. rate of consumption × Min. lead time] (Refer to working notes 1 and 2)

= 1200 units + 400 units – [20 units per day × 10 days]

= **1,400 units**

(iii) Minimum level = ROL – [Average rate of consumption × Average re-order-period]

= 1,200 units – (30 units per day × 20 days)

= **600 units**

(iv) Danger level = Average consumption × Lead time for emergency purchases

= 30 units per day × 8 days

= **240 units**

Working Notes:

1. Minimum rate of consumption per day (X)

$$\text{Av. rate of consumption} = \frac{\text{Minimum rate of consumption} + \text{Maximum rate of consumption}}{2}$$

$$30 \text{ units per day} = \frac{X \text{ units/day} + 40 \text{ units per day}}{2}$$

Or, X = 20 units per day.

2. Re-order Quantity (ROQ) or Economic Order Quantity (EOQ)

$$= \sqrt{\frac{2x10{,}000 units x Rs.40}{Rs.5}}$$

= 400 units

4. (a) (i) Statement Showing "Cost per unit - Traditional Method"

Particulars of Costs	Hand towels (₹)	Kitchen towels (₹)	Gym towels (₹)
Direct Materials	450	400	600

Direct Labour [(4, 12, 8 hours) × ₹ 100]	400	1,200	800
Production Overheads [(10, 18, 14 hours) × ₹ 30]	300	540	420
Cost per unit	**1,150**	**2,140**	**1,820**

(ii) Statement Showing "Cost per unit - Activity Based Costing"

Products	Hand towels	Kitchen towels	Gym towels
Production (units)	9,000	15,000	60,000
	(₹)	(₹)	(₹)
Direct Materials	40,50,000 (9,000 units x ₹ 450)	60,00,000 (15,000 units x ₹ 400)	3,60,00,000 (60,000 units x ₹ 600)
Direct Labour (refer Part (i) above)	36,00,000 (9,000 units x ₹ 400)	1,80,00,000 (15,000 units x ₹ 1,200)	4,80,00,000 (60,000 units x ₹ 800)
Setup Costs @ ₹ 1,44,000 per setup	28,80,000 (20 setups x ₹ 1,44,000)	14,40,000 (10 setups x ₹ 1,44,000)	28,80,000 (20 setups x ₹ 1,44,000)
Inspection Costs @ ₹ 63,000 per inspection	63,00,000 (100 inspections x ₹ 63,000)	25,20,000 (40 inspections x ₹ 63,000)	37,80,000 (60 inspections x ₹ 63,000)
Purchase Related Costs @ ₹ 11,250 per purchase order	6,75,000 (60 purchase orders x ₹ 11,250)	11,25,000 (100 purchase orders x ₹ 11,250)	18,00,000 (160 purchase orders x ₹ 11,250)
Store delivery costs @ ₹ 14,400 per store delivery	6,48,000 (45 store delivery x ₹ 14,400)	11,52,000 (80 store delivery x ₹ 14,400)	18,00,000 (125 store delivery x ₹ 14,400)
Machine Related Costs @ ₹ 7.5 per hour	6,75,000 (90,000 hours x ₹ 7.5)	20,25,000 (2,70,000 hours x ₹ 7.5)	63,00,000 (8,40,000 hours x ₹ 7.5)
Total Costs	**1,88,28,000**	**3,22,62,000**	**10,05,60,000**
Cost per unit (Total Cost ÷ no. of Units)	**2,092**	**2,151**	**1,676**

Working Notes:

A. Number of Batches, Purchase Orders, Inspections and Store Deliveries-

	Particulars	Hand towels	Kitchen towels	Gym towels	Total
A.	Production (units)	9,000	15,000	60,000	
B.	Batch Size (units)	450	1,500	3,000	
C.	Number of Batches (A÷B)	20	10	20	50
D.	Number of Purchase Order per batch	3	10	8	

E.	Total Purchase Orders [C × D]	60	100	160	320
F.	Number of Inspections per batch	5	4	3	
G.	Total Inspections [C × F]	100	40	60	200
H.	Total Store Deliveries	45	80	125	250

B. Total Machine Hours-

	Particulars	Hand towels	Kitchen towels	Gym towels
A.	Machine Hours per unit	10	18	14
B.	Production (units)	9,000	15,000	60,000
C.	Total Machine Hours [A × B]	90,000	2,70,000	8,40,000

Total Machine Hours = 12,00,000

Total Production Overheads-

= 12,00,000 hrs. × ₹ 30 = ₹ 3,60,00,000

C. Cost Driver Rates-

Cost Pool	%	Overheads (₹)	Cost Driver Basis	Cost Driver (Units)	Cost Driver Rate (₹)
Setup	20%	72,00,000	Number of batches	50	1,44,000 per Setup
Inspection	35%	1,26,00,000	Number of inspections	200	63,000 per Inspection
Purchases	10%	36,00,000	Number of purchase order	320	11,250 per Purchase order
Store delivery	10%	36,00,000	Number of store deliveries	250	14,400 per store delivery
Machine Operation	25%	90,00,000	Machine Hours	12,00,000	7.5 per Machine Hour

(b) Workings:

1. Sale receipts

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Forecast sales (S)	1,000	1,000	1,000	1,250	1,500	2,000	1,900	2,200
	₹	₹	₹	₹	₹	₹	₹	₹
S×3000	30,00,000	30,00,000	30,00,000	37,50,000	45,00,000	60,00,000	57,00,000	66,00,000
Debtors pay:								
1 month 50%		15,00,000	15,00,000	15,00,000	18,75,000	22,50,000	30,00,000	28,50,000
2nd month 50%		-	15,00,000	15,00,000	15,00,000	18,75,000	22,50,000	30,00,000
	-	15,00,000	30,00,000	30,00,000	33,75,000	41,25,000	52,50,000	58,50,000

2. Variable overheads

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,000	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹	₹
Var. overhead (Q×400)	4,00,000	5,00,000	6,00,000	8,00,000	7,60,000			
Var. overhead (Q×500)						11,00,000	11,00,000	11,50,000
Paid one month later		4,00,000	5,00,000	6,00,000	8,00,000	7,60,000	11,00,000	11,00,000

3. Wages payments

Month	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹
Wages (Q × 800)	10,00,000	12,00,000	16,00,000				
Wages (Q × 1,000)				19,00,000	22,00,000	22,00,000	23,00,000
75% this month	7,50,000	9,00,000	12,00,000	14,25,000	16,50,000	16,50,000	17,25,000
25% next month		2,50,000	3,00,000	4,00,000	4,75,000	5,50,000	5,50,000
	7,50,000	11,50,000	15,00,000	18,25,000	21,25,000	22,00,000	22,75,000

CASH BUDGET – SIX MONTHS ENDED JUNE

	Jan	Feb	Mar	Apr	May	Jun
	₹	₹	₹	₹	₹	₹
Receipts:						
Sales receipts	30,00,000	30,00,000	33,75,000	41,25,000	52,50,000	58,50,000
Freehold property	-	-	-	-	-	20,00,000
	30,00,000	**30,00,000**	**33,75,000**	**41,25,000**	**52,50,000**	**78,50,000**
Payments:						
Materials	10,00,000	12,50,000	15,00,000	20,00,000	19,00,000	22,00,000
Var. overheads	5,00,000	6,00,000	8,00,000	7,60,000	11,00,000	11,00,000
Wages	11,50,000	15,00,000	18,25,000	21,25,000	22,00,000	22,75,000
Machine	-	-	-	-	-	5,00,000
Tax	-	-	1,00,000	-	-	-
	26,50,000	**33,50,000**	**42,25,000**	**48,85,000**	**52,00,000**	**60,75,000**
Net cash flow	3,50,000	(3,50,000)	(8,50,000)	(7,60,000)	50,000	17,75,000
Balance b/f	50,000	4,00,000	50,000	(8,00,000)	(15,60,000)	(15,10,000)
Cumulative cash flow	4,00,000	50,000	(8,00,000)	(15,60,000)	(15,10,000)	2,65,000

5. (a) (i) Process I – Statement of Equivalent Production

Particulars	Completed Units	Closing stock of WIP			Equivalent Production units
		Units	% of Completion	Equivalent Units	
	(1)			(2)	(1) + (2)
Material	90,000	30,000	100%	30,000	1,20,000
Wages	90,000	30,000	50%	15,000	1,05,000
Overhead	90,000	30,000	50%	15,000	1,05,000

Process I

Particulars	Process Cost (₹)	Equivalent Production (units)	Process Cost p.u. (₹) (2)/(3)	WIP stock Equivalent units	Cost of WIP Stock (₹) (4) x (5)	Transfer to Process II (₹) (2)-(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Material	22,50,000	1,20,000	18.750	30,000	5,62,500	16,87,500
Wages	27,00,000	1,05,000	25.714	15,000	3,85,714	23,14,286
Overhead	18,00,000	1,05,000	17.143	15,000	2,57,143	15,42,857
	67,50,000				12,05,357	55,44,643

Process I A/c

	Particulars	Unit	(₹)		Particulars	Units	(₹)
To	Direct material	1,20,000	22,50,000	By	Process II A/c	90,000	55,44,643
To	Direct wages	--	27,00,000	By	Closing W-I-P	30,000	12,05,357
To	Factory overhead	--	18,00,000				
		1,20,000	67,50,000			1,20,000	67,50,000

(ii) Process II – Statement of Equivalent Production

Particulars	Completed Units	Closing stock of WIP			Equivalent Production units
		Units	% of Completion	Equivalent Units	
	(1)			(2)	(1) + (2)
Material	84,000	5,400*	100%	5,400	89,400
Wages	84,000	5,400	25%	1,350	85,350
Overhead	84,000	5,400	25%	1,350	85,350

*(90,000 - 84,000 - 600) units = 5,400 units

Process II

Particulars	Process Cost (₹)	Equivalent Production (units)	Process Cost p.u. (₹) (2)/(3)	WIP stock Equivalent units	Cost of WIP Stock (₹) (4) x (5)	Transfer to Finished Stock (₹) (2)-(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Material	55,44,643	89,400	62.021	5,400	3,34,911	52,09,732

Wages	5,25,000	85,350	6.151	1,350	8,304	5,16,696
Overhead	6,75,000	85,350	7.909	1,350	10,677	6,64,323
	67,44,643				3,53,892	63,90,751
Add: Packing Material Cost						6,00,000
Cost of Finished Stock						69,90,751

Process II A/c

	Particulars	Units	(₹)		Particulars	Units	(₹)
To	Process I	90,000	55,44,643	By	Finished Stock	84,000	69,90,751
To	Direct wages	--	5,25,000	By	Normal loss	600	--
To	Factory overhead	--	6,75,000	By	WIP stock	5,400	3,53,892
To	Packing charges	--	6,00,000				
		90,000	73,44,643			90,000	73,44,643

(b) ABC is particularly needed by organisations for product costing in the following situations:

1. High amount of overhead: When production overheads are high and form significant costs, ABC is more useful than traditional costing system.
2. Wide range of products: ABC is most suitable, when, there is diversity in the product range or there are multiple products.
3. Presence of non-volume related activities: When non-volume related activities e.g. material handling, inspection set-up, are present significantly and traditional system cannot be applied, ABC is a superior and better option. ABC will identify non-value-adding activities in the production process that might be a suitable focus for attention or elimination.
4. Stiff competition: When the organisation is facing stiff competition and there is an urgent requirement to compute cost accurately and to fix the selling price according to the market situation, ABC is very useful. ABC can also facilitate in reducing cost by identifying non-value-adding activities in the production process that might be a suitable focus for attention or elimination.

6. (a) Internal Users

Internal users, who use the Cost and Management Accounting information may include the followings:

(a) Policy Makers- The policy makers are those who formulate strategies

(i) to achieve the goals (short & long term both) to fulfil the objectives of the organisation.

(ii) to position the organisation into the competitive market environment.

(iii) to design the organisational structure to get the policy and strategies implemented. etc.

(b) Managers- The managers use the information

(i) to know the cost of a cost object and cost centre

(ii) to know the price for the product or service

(iii) to measure and evaluate performance of responsibility centres

(iv) to the know the profitability-product-wise, department-wise, customer-wise etc.

(v) to evaluate the strategic options and to make decisions

(c) Operational level staff- The operational level staff like supervisors, foreman, team leaders require information

(i) to know the objectives and performance goals for them

(ii) to know product and service specifications like volume, quality and process etc.

(iii) to know the performance parameters against which their performance is measured and evaluated.

(iv) to know divisional (responsibility centre) profitability etc.

(d) Employees- Employees are concerned with the information related with time and attendance, incentives for work, performance standards etc.

External Users

External users, who use the Cost and Management Accounting information may include the followings:

(a) Regulatory Authorities- Regulatory Authorities are concerned with cost accounting data and information for different purpose which includes tariff determination, providing subsidies, rate fixation etc. To do this the regulatory bodies require information on the basis of some standards and format in this regard.

(b) Auditors- The auditors while conducting audit of financial accounts or for some other special purpose audit like cost audit etc. require information related with costing and reports reviewed by management etc.

(c) Shareholders- Shareholders are concerned with information that effect their investment in the entity. Management communicates to the shareholders through periodic communique, annual reports etc. regarding new orders received, product expansion, market share for products etc.

(d) Creditors and Lenders- Creditors and lenders are concerned with data and information which affects an entity's ability to serve lenders or creditors. For example, any financial institutions which provides loan to an entity against book debts and inventories are more concerned with regular reporting on net debt position and stock balances.

(b) Methods for ascertaining Service Cost Unit

Composite Cost Unit

Sometime two measurement units are combined together to know the cost of service or operation. These are called composite cost units. For example, a public transportation undertaking would measure the operating cost per passenger per kilometer.

Examples of Composite units are Tonne- km., Quintal- km, Passenger-km., Patient-day etc. **Composite unit may be computed in two ways**.

(i) Absolute (Weighted Average) basis.

(ii) Commercial (Simple Average) basis.

In both bases of computation of service cost unit, weightage is also given to qualitative factors rather quantitative (which are directly related with variable cost elements) factors alone.

(i) Weighted Average or Absolute basis – It is a summation of the products of qualitative and quantitative factors. For example, to calculate absolute Tonne-Km for a goods transport is calculated as follows.:

$$\sum(\text{Weight Carried} \times \text{Distance})_1 + (\text{Weight Carried} \times \text{Distance})_2 + \ldots + (\text{Weight Carried} \times \text{Distance})_n$$

Similarly, in case of Cinema theatres, price for various classes of seats is fixed differently. For example–

First class seat may be provided with higher quality service and hence charged at a higher rate, whereas Second Class seat may be priced less. In this case, appropriate weight to be given effect for First Class seat and Second Class seat – to ensure proper cost per composite unit.

(ii) Simple Average or Commercial Basis – It is the product of average qualitative and total quantitative factors. For example, in case of goods transport, Commercial Tonne-Km is arrived at by multiplying total distance km., by average load quantity.

$$\sum(\text{Distance}_1 + \text{Distance}_2 + \ldots\ldots\ldots + \text{Distance}_n) \times \left(\frac{W_1 + W_2 + \ldots. + W_n}{n}\right)$$

In both the example, variable cost is dependent of distance and is a quantitative factor. Since, the weight carried does not affect the variable cost hence and is a qualitative factor.

Equivalent Cost Unit/ Equivalent Service Unit:

To calculate cost or pricing of two more different grade of services which uses common resources, **each grade of service is assigned a weight and converted into equivalent units**. Converting services into equivalent units make different grade of services equivalent and comparable.

(c)

	Points	**Description**
1.	Based on Estimates	Budgets are based on a series of estimates, which are based on the conditions prevalent or expected at the time budget is established. It requires revision in plan if conditions change.
2.	Time factor	Budgets cannot be executed automatically. Some preliminary steps are required to be accomplished before budgets are implemented. It requires proper attention and time of management. Management must not expect too much during the initial development period.
3.	Co-operation Required	Staff co-operation is usually not available during the initial budgetary control exercise. In a decentralised organisation, each unit has its own objective and these units enjoy some degree of discretion. In this type of organisation structure, coordination among different units is required. The success of the budgetary control depends upon willing co-operation and teamwork,
4.	Expensive	The implementation of budget is somewhat expensive. For successful implementation of the budgetary control, proper organisation structure with responsibility is prerequisite. Budgeting process start from the collection of information to for preparing the budget and performance analysis. It consumes valuable resources (in terms of qualified manpower, equipment, etc.) for this purpose; hence, it is an expensive process.
5.	Not a substitute for management	Budget is only a managerial tool and must be intelligently applied for management to get

		benefited. Budgets are not a substitute for good management.
6.	Rigid document	Budgets are sometime considered as rigid documents. But in reality, an organisation is exposed to various uncertain internal and external factors. Budget should be flexible enough to incorporate ongoing developments in the internal and external factors affecting the very purpose of the budget.

(d)

S. No.	Method of costing	Example of industry where this method is followed
(i)	Job Costing	Printing press
(ii)	Process Costing	Paper and Pulp
(iii)	Batch Costing	Bakery
(iv)	Multiple Costing	Bicycles

ANSWER OF MODEL TEST PAPER 7

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. C Profit if no minimum charges are there, on absolute tonne basis, but he will charge for diesel petrol when running empty

Absolute tonne-kms: (250 kms x 4 tonnes + 150 kms x 3 tonnes) x 90 days

= 1,30,500 tonne-kms

Vacant moving (Chandigarh to Ludhiana) = 100kms x 90 days = 9,000 kms

Charges for vacant running:

	(₹)
June (80.30 x 16 x 100)/8	16,060
July (80.50 x 31 x 100) /8	31,194
August (81.25 x 29 x 100) /8	29,453
September (80.90 x 14 x 100) /8	14,158
Total Charges	**90,864**

	(₹)
Total revenue (1,30,500 x 10)	13,05,000
Add: diesel recovery for vacant running	90,864
Less: service & maintenance (80,000 x 3)	(2,40,000)
Less: salary (15,000 x 3)	(45,000)
Less: diesel cost	(4,54,323)
Less: interest	(22,578)
Less: depreciation	(36,986)
Profit	**5,96,977**

Bifurcation of principal and interest

Years	Calculation of interest (₹)	Interest (₹)	Principal repayment (₹)	Loan balance (₹)
0	-	-	-	20,00,000
1	20,00,000 x 10%	2,00,000	3,27,595	16,72,405
2	16,72,405 x 10%	1,67,241	3,60,354	13,12,051
3	13,12,051 x 10%	1,31,205	3,96,390	9,15,661
4	9,15,661 x 10%	91,566	4,36,029	4,79,632
5	4,79,632 x 10%	47,963	4,79,632	-

Interest allocated to this job = 91,566 x 90 / 365 = 22,578

Depreciation = $\frac{20,00,000-5,00,000}{10} x \frac{90}{365}$ = 36,986

Diesel expenses:

	(₹)
June (80.30 x 16 x 500)/8	80,300
July (80.50 x 31 x 500)/8	1,55,969
August (81.25 x 29 x 500)/8	1,47,266
September (80.90 x 14 x 500)/8	70,788
Total diesel expenses	**4,54,322**

2. A

	With minimum limit (₹)	Without minimum limit (₹)
Commercial tonne kms	3.75 x 500 x 90 = 1,68,750	((4+0+3)/3) x 500 x 90 = 1,05,000
revenue	1,68,750 x 10 = 16,87,500	1,05,000 x 10 = 10,50,000
Less: costs	(7,98,887)	(7,98,887)
Profit/(loss)	8,88,613	2,51,113

Loss arising due to no minimum limit = 8,88,613-2,51,113 = 6,37,500

3. B **Total Revenue = Cost + Profit =** 7,98,887+ 2,70,000 = ₹ 10,68,887

Absolute Tonne-Kms = 1,74,375

Rate = 10,68,887/1,74,375 = ₹ 6.13

4. B

5. B Profit at current rate (based on minimum charges of 75%)

Absolute tonne-kms: (250 kms x 4 tonnes + 100 kms x 3.75 tonnes + 150 kms x 3.75 tonnes) x 90 days = 1,74,375 tonne-kms

	(₹)
Total revenue (1,74,375 x 10)	17,43,750
Less: service & maintenance (80,000 x 3)	(2,40,000)
Less: salary (15,000 x 3)	(45,000)
Less: diesel cost	(4,54,323)
Less: interest	(22,578)
Less: depreciation	(36,986)
Profit	**9,44,863**

6. C

Particulars	**Base Material**	**Conversion cost**
Previous year cost (₹)	5,34,000	8,01,000
Increased by	2 times	-
Increased to		3 times
Current year cost (₹)	5,34,000 + (5,34,000 x 2) = 16,02,000	8,01,000 x 3 = 24,03,000

7. D

Products	**Production/ Sales(in tonne)**	**Joint Cost Apportioned (₹)**
Sodium hydroxide	24,030	24,03,000
Halogen	16,020	16,02,000
Total	**40,050**	**40,05,000**

Joint cost = base material + conversion cost

= 16,02,000 + 24,03,000

= 40,05,000

Apportioned joint cost = $\frac{\text{Total joint cost}}{\text{Total physical value}}$ x Physical units of each product

For Sodium hydroxide = $\frac{₹\ 40,05,000}{40,050 \text{ tonnes}}$ x 24,030 tonnes

= ₹ 24,03,000

For Halogen = $\frac{₹\ 40,05,000}{40,050 \text{ tonnes}}$ x 16,020 tonnes

= ₹ 16,02,000

8. A

Products	Sales (in Tonne)	Selling Price per Tonne (₹)	Sales Revenue (₹)	Joint Cost Apportioned (₹)
Sodium hydroxide	24,030	100	24,03,000	20,02,500
Halogen	16,020	150	24,03,000	20,02,500
Total	**40,050**		**48,06,000**	**40,05,000**

Apportioned joint cost = $\frac{\text{Total joint cost}}{\text{Total sale revenue}}$ x Sale revenue of each product

For Sodium hydroxide = $\frac{₹\ 40,05,000}{₹\ 48,06,000}$ x 24,03,000 = ₹ 20,02,500

For Halogen = $\frac{₹\ 40,05,000}{₹\ 48,06,000}$ x 24,03,000 = ₹ 20,02,500

9. B

Products	Sales (in Tonne)	Selling Price per Tonne (₹)	Sales Value (₹)	Post split-off cost (₹)	Net Realisable Value (₹)	Joint Cost Apportioned (₹)
Sodium hydroxide	24,030	100	24,03,000	-	24,03,000	17,16,429
Halogen (Vinyl after further processing)	10,012.50	150 + 250 = 400	40,05,000	8,01,000	32,04,000	22,88,571
Total					**56,07,000**	**40,05,000**

Apportioned joint cost = $\frac{\text{Total joint cost}}{\text{Total Net Realisable Value}}$ x Net Realisable Value of each product

For Sodium hydroxide = $\frac{₹\ 40,05,000}{₹\ 56,07,000}$ x 24,03,000

= ₹ 17,16,429

For Halogen = $\frac{₹\ 40,05,000}{₹\ 56,07,000}$ x 32,04,000

= ₹ 22,88,571

10. C

Particulars	Amount (in ₹)
Revenue from sales of Vinyl if Halogen further processed (10,012.50 tonnes × ₹ 400) (A)	40,05,000
Revenue from sales of Halogen if no further processing done (16,020 tonnes × ₹ 150)(B)	24,03,000
Incremental revenue from further processing of Halogen into Vinyl (A-B)	**16,02,000**
Incremental cost of further processing Halogen into Vinyl	8,01,000
Incremental operating income from further processing	**8,01,000**

Incremental revenue would be ₹ 8,01,000, thus the decision relating to further processing Halogen needs to be approved.

11. C Let X be the cost of material and Y be the normal rate of wages per hour.

Factory Cost of Mr. Akon (Rowan System) = X + 45Y + $\frac{45}{75}$ x (75 - 45) Y + (45 x ₹ 120)

₹ 1,25,640 = X + 63Y + ₹ 5,400

X + 63Y = ₹ 1,20,240 … (i)

Factory Cost of Mr. Ben (Halsey System) = X + 60Y + 50% (75 - 60) Y + (60 x ₹ 120)

₹ 1,29,600 = X + 67.5Y + ₹ 7,200

X + 67.5Y = ₹ 1,22,400 … (ii)

From subtracting (i) from (ii), we get,

4.5Y = ₹ 2,160

Y = ₹ 480 per hour

Or, **normal wage rate = ₹ 480 per hour**

Therefore, X = ₹ 1,20,240 - 63Y

X = ₹ 1,20,240 - (63 x ₹ 480)

X = ₹ 90,000

Or, **cost of material = ₹ 90,000**

12. C

13. D Sales for current year $= 3 \times \left(\frac{62,00,000 + 50,00,000 + 52,00,000 + 44,00,000}{4}\right)$

$= ₹\ 1,56,00,000$

P/V ratio $= \frac{\text{Sales - Variable Cost}}{\text{Sales}}$

$= \frac{₹\ 1,56,00,000 - 93,60,000}{₹\ 1,56,00,000}$

$= 40\%$

Now, Break even point $= \frac{\text{Fixed Cost}}{\text{P/V ratio}}$

Therefore, **Fixed Cost** = Break even point x P/V ratio

$= ₹\ 1,17,00,000 \times 40\%$

= ₹ 46,80,000

14. C Annual demand = 9,000 x 12 = 1,08,000

Economic Batch Quantity (EBQ):

$$EBQ = \sqrt{\frac{2DS}{C}}$$

$$= \sqrt{\frac{2 \times 1,08,000 \times 16,002.25}{60}}$$

= 7,590 bushings

Number of runs $= \frac{1,08,000}{7,590} = 14.23 =$ **15 runs**

15. C Fixed Overhead Cost Variance = Absorbed Fixed Overheads - Actual Fixed Overheads

$0 = \left(\frac{₹\ 75,00,000}{15,000} \times 15,600\right)$ - Actual Fixed Overheads

Actual Fixed Overheads = ₹ 78,00,000

PART-II Descriptive Questions

1. (a) (i) Variable overhead absorption rate: $= \frac{\text{Difference in Total Overheads}}{\text{Difference in levels in terms of machine hours}}$

$= \frac{₹3,47,625 - ₹3,38,875}{15,500\ \text{hours} - 14,500\ \text{hours}} = ₹\ 8.75$ per machine hour.

(ii) Calculation of Total fixed overheads:

	(₹)
Total overheads at 14,500 hours	3,38,875
Variable overheads = ₹ 8.75 × 14,500	1,26,875
Total fixed overheads	2,12,000

(iii) Calculation of Budgeted level of activity in machine hours:

Let budgeted level of activity = X

Then, $\frac{(₹\,8.75\,X + ₹\,2,12,000)}{X} = ₹\ 22$

8.75X + ₹ 2,12,000 = 22X

13.25X = 2,12,000

X =16,000

Thus, budgeted level of activity = 16,000 machine hours.

(iv) Calculation of Under / Over absorption of overheads:

	(₹)
Actual overheads	3,22,000
Absorbed overheads = 14,970 hours × ₹ 22 per hour	3,29,340
Over-absorption (3,29,340 – 3,22,000)	7,340

(v) Departmental absorption rates provide costs which are more precise than those provided by the use of blanket absorption rates. Departmental absorption rates facilitate variance analysis and cost control. The application of these rates makes the task of stock and work-in-process (WIP) valuation easier and more precise. However, the setting up and monitoring of these rates can be time-consuming and expensive.

(b) For Material Cost Variances:

	SQ × SP	**AQ × AP**	**AQ × SP**
X	12,000 x 4 x ₹ 8 = ₹ 3,84,000	50,000 x ₹ 8.80 = ₹ 4,40,000	50,000 x ₹ 8 = ₹ 4,00,000
Y	12,000 x 6 x ₹ 6 = ₹ 4,32,000	72,000 x ₹ 5.60 = ₹ 4,03,200	72,000 x ₹ 6 = ₹ 4,32,000
Z	12,000 x 30 x ₹ 2 = ₹ 7,20,000	3,54,000 x ₹ 2.40 = ₹ 8,49,600	3,54,000 x ₹ 2 = ₹ 7,08,000
Total	₹ 15,36,000	₹ 16,92,800	₹ 15,40,000

Material Price Variance = Actual quantity (Std. price – Actual price)

= (AQ x SP) – (AQ x AP)

= ₹ 15,40,000 – ₹ 16,92,800

= ₹ 1,52,800 (A)

Material Usage Variance = Standard Price (Std. Quantity – Actual Quantity)

= (SP x SQ) – (SP x AQ)

= ₹ 15,36,000 – ₹ 15,40,000

= ₹ 4,000 (A)

For Labour Cost Variance:

	SH × SR	AH × AR	AH × SR
Labour	(12,000 x 6) x ₹ 16 = ₹ 11,52,000	10,000 x ₹ 24 = ₹ 2,40,000 60,000 x ₹ 16 = ₹ 9,60,000	70,000 x ₹ 16 = ₹ 11,20,000
Total	₹ 11,52,000	₹ 12,00,000	₹ 11,20,000

Labour Rate Variance = Actual Hours (Std. Rate – Actual Rate)

= (AH x SR) – (AH x AR)

= ₹ 11,20,000 – ₹ 12,00,000

= ₹ 80,000 (A)

Labour Efficiency Variance = Standard Rate (Std. Hours – Actual Hours)

= (SR x SH) – (SR x AH)

= ₹ 11,52,000 – ₹ 11,20,000

= ₹ 32,000 (F)

(c) Production during the month 1,250 units

Time allowed for 1,250 units @ 2 hours per unit (1,250 x 2 hours) 2,500 hours

Actual time taken 25 days x 8 hours x 10 workers 2,000 hours

Time saved 500 hours

Labour cost per piece under time rate scheme: 2 hours x ₹ 2 = ₹ 4

Calculation of effective hourly rate under:

Halsey Scheme:

(₹)

Basic wages of 10 workers: 2,000 hours @ ₹ 2 per hour	4,000
Bonus 50% x (500 hours x ₹ 2)	500
Total wages for 2,000 hours	4,500

Effective hourly rate of earning = $\frac{₹\ 4,500}{2,000\ \text{hours}}$ = ₹ 2.25

Labour cost per piece = $\frac{₹\ 4,500}{1,250\ \text{units}}$ = ₹ 3.60

Saving in terms of direct labour cost per piece (₹ 4.00 – ₹ 3.60) = ₹ 0.40

Rowan Scheme:

	(₹)
Basic wages (as calculated under Halsey scheme)	4,000
Bonus: $500\ \text{hours} \times \frac{2,000\ \text{hours}}{2,500\ \text{hours}} \times ₹\ 2$	800
Total wages for 2,000 hours	4,800

Effective hourly rate of earnings $\frac{₹\ 4,800}{2,000\ \text{hours}}$ = ₹ 2.40

Labour cost per piece $\frac{₹\ 4,800}{1,250\ \text{units}}$ = ₹ 3.84

Saving in terms of direct labour cost per piece (₹ 4.00 – ₹ 3.84) = ₹ 0.16

Advise: Shivi should introduce Halsey incentive scheme, as it gives more saving than the Rowan incentive scheme.

2. (a) (a) Cost and Quoted Price Using Labour Hours to Absorb Overheads

		RBC (₹ in lakhs)	IPC (₹ in lakhs)
Materials		5.00	12.00
Labour	1200 x ₹ 100; 2500 x ₹ 100	1.20	2.50
Overheads	1200 x ₹ 1200; 2500 x ₹ 1200	14.40	30.00
Total cost		20.60	44.50
Add: Profit	50% of Total Cost	10.30	22.25
Quoted Price		**30.90**	**66.75**

(b) Cost and Quoted Price Using ABC

Step 1: Calculate Overhead Rates for Each Activity

Overhead Category	Total Overhead (₹ Lakhs)	Activity Driver	Activity Rate
Site Engineers	₹120	Site Visits	₹ 120 / 600 = ₹ 20,000 per site visit
Project Planners	₹80	Planning Documents	₹ 80 / 300 = ₹ 26,667 per planning document
Equipment Depreciation	₹400	Labour Hours	₹ 400 / 50,000 = ₹ 800 per labour hour

Step 2: Allocate Overheads Using ABC

		RBC (in lakhs)	IPC (in lakhs)
Materials		5.00	12.00
Labour	1200 x ₹100; 2500 x ₹100	1.20	2.50
Overheads			
Site Engineers	2 x ₹ 20,000; 10 x ₹ 20,000	0.40	2.00
Project Planners	2 x ₹ 26,667; 8 x ₹ 26,667	0.53	2.13
Equipment Depreciation	1200 x ₹ 800; 2500 x ₹ 800	9.60	20.00
Total cost		16.73	38.63
Add: Profit	50% of Total Cost	8.37	19.32
Quoted Price		**25.10**	**57.95**

(c) Possible pricing strategies for the two services offered by XYZ Constructions

- The pricing policy is a matter for XYZ Constructions to decide. They could elect to maintain the current 50% mark-up on cost and if they did the price of the RBC would fall by around 7% in line with the costs. This should make them more competitive in the market.
- They could also reduce the prices by a little less than 7% (say 5%) in order to increase internal margins a little.

Reasons other than high prices for the current poor sales of RBC:

- If the quality of work or the reputation and reliability of the builder are questionable, lowering prices is unlikely to boost sales.

While it is possible that XYZ Constructions has a strong reputation for IPC but not for RBC, it is more likely that a poor reputation would impact all their products. Poor service or inflexibility in meeting customer needs may also hurt sales and can't be fixed by lowering prices.

- Poor marketing strategies also discourage customers from selecting XYZ Constructions.
- XYZ Constructions faces competition and may need to adopt a more competitive pricing strategy, such as 'going rate pricing,' instead of simply adding a markup to costs.
- XYZ Constructions could enter the market by pricing some projects competitively to establish a foothold. Completed projects could then be leveraged to attract new customers.

(b) The crux of standard costing lies in variance analysis. Standard costing is the technique whereby standard costs are predetermined and subsequently compared with the recorded actual costs. It is a technique of cost ascertainment and cost control. It establishes predetermined estimates of the cost of products and services based on management's standards of efficient operation. It thus lays emphasis on "what the cost should be". These should be costs are when compared with the actual costs. The difference between standard cost and actual cost of actual output is defined as the variance.

The variance in other words in the difference between the actual performance and the standard performance. The calculations of variances are simple. A variance may be favourable or unfavourable. If the actual cost is less than the standard cost, the variance is favourable but if the actual cost is more than the standard cost, the variance will be unfavourable. They are easily expressible and do not provide detailed analysis to enable management of exercise control over them. It is not enough to know the figures of these variances from month to month. We in fact are required to trace their origin and causes of occurrence for taking necessary remedial steps to reduce / eliminate them.

A detailed probe into the variance particularly the controllable variances helps the management to ascertain:

(i) the amount of variance

(ii) the factors or causes of their occurrence

(iii) the responsibility to be laid on executives and departments and

(iv) corrective actions which should be taken to obviate or reduce the variances.

Mere calculation and analysis of variances is of no use. The success of variance analysis depends upon how quickly and effectively the corrective actions can be taken on the analysed variances. In fact variance gives information. The manager needs to act on the information provided for taking corrective action. Information is the means and action taken on it is the end. In other words, the calculation of variances in standard costing is not an end in itself, but a means to an end.

3. (a) Dr. **Process A Account** Cr.

	₹		₹
To Materials	40,000	By Transfer to Process B A/c	1,20,000
To Labour	40,000		
To Overheads	16,000		
	96,000		
To Profit (20% of transfer price, i.e., 25% of cost)	24,000		
	1,20,000		1,20,000

Dr. **Process B Account** Cr.

	₹		₹
To Transferred from Process A A/c	1,20,000	By Transfer to Finished Stock A/c	2,88,000
To Labour	56,000		
To Overhead	40,000		
	2,16,000		
To Profit (25% of transfer price i.e., 33.33% of cost)	72,000		
	2,88,000		2,88,000

Statement of Total Profit

	₹
Profit from Process A	24,000
Profit from Process B	72,000
Profit on Sales (₹ 4,00,000 – ₹ 2,88,000)	1,12,000
Total Profit	2,08,000

(b) (i) Calculation of Administration cost:

Particulars	Amount (₹)
Salary paid to office staffs	8,20,000
Fees paid to auditors	92,000
Vehicle hire charges paid for directors attending general meeting	10,200
Fees paid to independent directors	1,02,000
	10,24,200

(ii) Calculation of Selling cost:

Particulars	Amount (₹)
Salary paid to sales manager	8,00,000
Wages paid to workers engaged in storing goods at sales depot	7,200
Travelling allowance paid to sales staffs	9,600
Electricity bill paid for sales office	1,800
Bonus paid to sales staffs for achieving targets	96,000
	9,14,600

(iii) Calculation of Distribution cost:

Particulars	Amount (₹)
Cost paid for secondary packing	8,200
Depreciation on goods delivery vehicles	13,000
	21,200

(c) Statement showing computation of the cost of processing an education loan application

Particulars	(₹)
Salary paid to the education loan processors	21,60,000
Legal advice cost relating to education loan	11,000
Overhead cost (30% of (₹ 16,40,000 - ₹ 11,000)]	4,88,700
Total processing cost per month	26,59,700
No. of applications processed per month	500
Total processing cost per education loan application	**5,319.40**

4. (a) (i) Re-ordering level = Maximum usage per period × Maximum lead time

(ROL) = 2,000 units per day × 20 days

= 40,000 units

(ii) Maximum level= ROL+ROQ–[Min. rate of consumption× Min. lead time] (Refer to working notes 1 and 2)

= 40,000 units + 20,000 units – [1,000 units per day x 10 days]

= 50,000 units

(iii) Minimum level = ROL – Average rate of consumption × Average re-order-period

= 40,000 units – (1,500 units per day × 15 days)

= 17,500 units

(iv) Danger level = Average consumption × Lead time for emergency purchases

= 1,500 units per day × 3 days

= 4,500 units

Working Notes:

1. Minimum rate of consumption per day

Average rate of consumption = $\left(\frac{\text{Minimum rate of consumption + Maximum rate of consumption}}{2}\right)$

1,500 units per day = $\left(\frac{\text{X units per day + 2,000 units per day}}{2}\right)$

Or, X = 1,000 units per day

2. Re-order Quantity (ROQ) = $\sqrt{\frac{2 \times 12,50,000 \text{units} \times ₹10,000}{62.50}}$

= 20,000 units

(b) Causes/examples of normal idle time:

1. The time lost between factory gate and the place of work.
2. The interval between one job and another.
3. The setting up time for the machine.
4. Normal rest time, **break for lunch etc.**

Causes/examples of abnormal idle time:

1. Lack of coordination.
2. Power failure, Breakdown of machines.
3. Non-availability of raw materials, strikes, lockouts, poor supervision, fire, flood etc.

(c) Statement of Reconciliation

(to ascertain Profit as per Financial Accounts)

Particulars	**(₹)**	**(₹)**
Profit as per Cost Account		7,77,150
Add: Income from interest and dividends		2,35,500
		10,12,650
Less: Factory expenses under-charged in Cost Accounts	2,35,500	
Administrative expenses under-charged in Cost Accounts	1,17,750	
Selling & distribution expenses under-charged in Cost Accounts	31,400	(3,84,650)
Profit as per Financial Accounts		**6,28,000**

5. (a) (i) Computation of Sale Price *Per Bottle*

Output: 40,000 Bottles

	(₹)
Variable Cost:	
Material	3,15,000
Labour (₹ 1,40,000 × 75%)	1,05,000
Factory Overheads (₹ 1,35,000 × 50%)	67,500
Administrative Overheads (₹ 50,000 × 35%)	17,500
Commission (10% on ₹ 8,00,000) (W.N.-1)	80,000
Fixed Cost:	
Labour (₹ 1,40,000 × 25%)	35,000
Factory Overheads (₹ 1,35,000 × 50%)	67,500
Administrative Overheads (₹ 50,000 × 65%)	32,500
Total Cost	7,20,000
Profit (W.N.-1)	80,000
Sales Proceeds (W.N.-1)	8,00,000
Sales Price per bottle $\left(\frac{₹\ 8,00,000}{40,000 \text{Bottles}}\right)$	20

(ii) Calculation of Break-even Point

Sales Price per Bottle = ₹19

Variable Cost per Bottle = $\frac{`\ 5,85,000\ (W.N.-2)}{40,000\ Bottles}$

= ₹ 14.625

Contribution per Bottle = ₹ 19 − ₹14.625

= ₹ 4.375

Break -even Point

(in number of Bottles) = $\frac{\text{Fixed Costs}}{\text{Contribution per Bottle}}$

= $\frac{₹1,35,000}{₹\ 4.375}$ = 30,857 Bottles

Break- even Point

(in Sales Value) = 30,857 Bottles × ₹ 19

= ₹ 5,86,285/-

Working Note

W.N.-1

Let the Sales Price be 'x'

Commission = $\frac{10x}{100}$

Profit = $\frac{10x}{100}$

x = 6,40,000 + $\frac{10x}{100} + \frac{10x}{100}$

100x - 10x - 10x = 6,40,00,000

80x = 6,40,00,000

x = 6,40,00,000 / 80

= ₹ 8,00,000

W.N.-2

Total Variable Cost

	(₹)
Material	3,15,000
Labour	1,05,000
Factory Overheads	67,500
Administrative Overheads	17,500
Commission [(40,000 Bottles x ₹20) x 10%]	80,000
Total	5,85,000

(b) Number of days in budget period = 4 weeks × 5 days = 20 days

Number of units to be produced

	Product-A (units)	Product-B (units)
Budgeted Sales	2,400	3,600
Add: Closing stock	480 $\left(\frac{2,400 \text{ units}}{20 \text{ days}} \times 4 \text{ days}\right)$	900 $\left(\frac{3,600 \text{ units}}{20 \text{ days}} \times 5 \text{ days}\right)$
Less: Opening stock	(400)	(200)
	2,480	4,300

(i) Material Purchase Budget

	Material-X (Kg.)	Material-Y (Kg.)
Material required:		
- Product-A	12,400 (2,480 units × 5 kg.)	9,920 (2,480 units × 4 kg.)
- Product-B	12,900 (4,300 units × 3 kg.)	25,800 (4,300 units × 6 kg.)
	25,300	35,720
Add: Closing stock	12,650 $\left(\frac{25,300\text{kgs.}}{20\text{days}} \times 10\text{days}\right)$	10,716 $\left(\frac{35,720\text{kgs.}}{20\text{days}} \times 6\text{days}\right)$
Less: Opening stock	(1,000)	(500)
Quantity to be purchased	36,950	45,936
Rate per kg. of Material	₹ 4	₹ 6
Total Cost	₹ 1,47,800	₹ 2,75,616

(ii) Wages Budget

	Product-A (Hours)	Product-B (Hours)
Units to be produced	2,480 units	4,300 units
Standard hours allowed per unit	3	5
Total Standard Hours allowed	7,440	21,500
Productive hours required for production	$\frac{7,440\text{hours}}{80\%} = 9,300$	$\frac{21,500\text{hours}}{80\%} = 26,875$
Add: Non-Productive down time	1,860 hours. (20% of 9,300 hours)	5,375 hours. (20% of 26,875 hours)
Hours to be paid	11,160	32,250

Total Hours to be paid	= 43,410 hours (11,160 + 32,250)
Hours to be paid at normal rate	= 4 weeks × 40 hours × 180 workers = 28,800 hours
Hours to be paid at premium rate	= 43,410 hours – 28,800 hours = 14,610 hours
Total wages to be paid	= 28,800 hours × ₹ 25 + 14,610 hours × ₹ 37.5 = ₹ 7,20,000 + ₹ 5,47,875 = ₹ 12,67,875

6. (a) Before installation of a system of cost accounting in a manufacturing organisation the under mentioned factors should be studied:

(a) Objective: The objective of costing system, for example whether it is being introduced for fixing prices or for insisting a system of cost control.

(b) Nature of Business or Industry: The Industry in which business is operating. Every business industry has its own peculiar feature and costing objectives. According to its cost information requirement cost accounting methods are followed. For example Indian Oil Corporation Ltd. has to maintain process wise cost accounts to find out cost incurred on a particular process say in crude refinement process etc.

(c) Organisational Hierarchy: Costing system should fulfill the requirement of different level of management. Top management is concerned with the corporate strategy, strategic level management is concerned with marketing strategy, product diversification, product pricing etc. Operational level management needs the information on standard quantity to be consumed, report on idle time etc.

(d) Knowing the product: Nature of product determines the type of costing system to be implemented. The product which has by-products requires costing system which account for by-products as well. In case of perishable or short self- life, marginal costing method is required to know the contribution and minimum price at which it can be sold.

(e) Knowing the production process: A good costing system can never be established without the complete knowledge of the production process. Cost apportionment can be done on the most appropriate and scientific basis if a cost accountant can identify degree of effort or resources consumed in a particular process. This also includes some basic technical know-how and process peculiarity.

(f) Information synchronisation: Establishment of a department or a system requires substantial amount of organisational resources. While drafting a costing system, information needs of various other departments should be taken into account. For example in a typical business organisation accounts department needs to submit monthly stock statement to its lender bank, quantity wise stock details at the time filing returns to tax authorities etc.

(g) Method of maintenance of cost records: The manner in which Cost and Financial accounts could be inter-locked into a single integral accounting system and in which results of separate sets of accounts, cost and financial, could be reconciled by means of control accounts.

(h) Statutory compliances and audit: Records are to be maintained to comply with statutory requirements, standards to be followed (Cost Accounting Standards and Accounting Standards).

(i) Information Attributes: Information generated from the Costing system should be possess all the attributes of an information i.e. complete, accurate, timeliness, confidentiality etc. This also meets the requirements of management information system.

(b) The following steps are necessary for establishing a good budgetary control system:

1. Determining the objectives to be achieved, over the budget period, and the policy or policies that might be adopted for the achievement of these objectives.
2. Determining the activities that should be undertaken for the achievement of the objectives.
3. Drawing up a plan or a scheme of operation in respect of each class of activity, in quantitative as well as monetary terms for the budget period.
4. Laying out a system of comparison of actual performance by each person, or department with the relevant budget and determination of causes for the variation, if any.
5. Ensuring that corrective action will be taken where the plan has not been achieved and, if that is not possible, for the revision of the plan.

(c) Detection of slow moving and non-moving item of stores:

The existence of slow moving and non-moving item of stores can be detected in the following ways.

(i) By preparing and *perusing periodic reports* showing the status of different items or stores.

(ii) By calculating the *inventory turnover period* of various items in terms of number of days/ months of consumption.

(iii) By computing *inventory turnover ratio* periodically, relating to the issues as a percentage of average stock held.

(iv) 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 deteriorate in value.

(ii) Diversify production to use up such materials.

(iii) Use these materials as substitute, in place of other materials.

OR

(c) The three main methods of allocating support departments costs to operating departments are:

(i) ***Direct re-distribution method:*** Under this method, support department costs are directly apportioned to various production departments only. This method does not consider the service provided by one support department to another support department.

(ii) ***Step method:*** Under this method the cost of the support departments that serves the maximum numbers of departments is first apportioned to other support departments and production departments. After this the cost of support department serving the next largest number of departments is apportioned. In this manner we finally arrive on the cost of production departments only.

(iii) ***Reciprocal service method:*** This method recognises the fact that where there are two or more support departments they may render services to each other and, therefore, these inter-departmental services are to be given due weight while re-distributing the expenses of the support departments. The methods available for dealing with reciprocal services are:

(a) Simultaneous equation method

(b) Repeated distribution method

(c) Trial and error method.

ANSWERS OF MODEL TEST PAPER 8

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. (i) (d) Monthly Production of X = 30,000 kgs.

Raw Material Required = $\frac{30,000}{3} \times 5$ = 50,000 kgs.

Material A = $\frac{50,000}{5} \times 3$ = 30,000 kg.

Material B = $\frac{50,000}{5} \times 2$ = 20,000 kg.

(ii) (a) Calculation of Economic Order Quantity (EOQ):

Material A = $\sqrt{\frac{2 \times \text{Annual consumption} \times \text{Order cost}}{\text{Carrying cost per unit p.a.}}}$

= $\sqrt{\frac{2 \times (30,000 \times 12) \times 1,200}{15\% \; of \; 30}}$ = 13,856 kg.

Material B = $\sqrt{\frac{2 \times (20,000 \times 12) \times 1,200}{5\% \; of \; 44}}$ = 16,181 kg.

(iii) (b) Calculation of Maximum Stock level: Since, the Material A is perishable in nature and it required to be used within 10 days, hence, the Maximum Stock Level shall be lower of two:

(a) Stock equal to 10 days consumption

$= \frac{30000}{25} \times 10 \; days$ = 12,000 kg.

(b) Maximum Stock Level for Material A:

Re-order Quantity + Re-order level – (Min consumption* × Min. lead time)

Where, Re-order Quantity = 15,000 kg.

Re-order level = Max. Consumption* × Max. Lead time

= 30,000/25×2 days=2,400 kg.

Maximum stock Level = 15,000 kg. + 2,400 kg. - (30,000/25 × 1 day)

= 17,400 – 1,200 = 16,200 kg.

Stock required for 10 days consumption is lower than the maximum stock level calculated through the formula. Therefore, Maximum Stock Level will be 12,000 kg.

(*Since, production is processed evenly throughout the month hence material consumption will also be even.)

(iv) (b) Calculation of Savings/ loss in Material A if purchase quantity equals to EOQ.

	Purchase Quantity = 15,000 kg.	**Purchase Quantity = EOQ i.e. 13,856 kg.**
Annual consumption	3,60,000 kg. (30,000 × 12 months)	3,60,000 kg. (30,000 × 12 months)
No. of orders [Note- (i)]	30 (3,60,000 ÷ 12,000)	30 (3,60,000 ÷ 12,000)
Ordering Cost (a)	₹ 36,000 (₹ 1200 × 30)	₹ 36,000 (₹ 1200 × 30)
Carrying Cost (b) [Note- (ii)]	₹30,375 (15% of ₹ 27 × 7,500)	₹31,176 (15% of ₹ 30 × 6,928)
Purchase Cost (c) (for good portion)	₹ 97,20,000 (₹ 27 × 3,60,000)	₹ 1,08,00,000 (₹ 30 × 3,60,000)
Loss due to obsolescence (d) [Note- (iii)]	₹ 24,30,000 [₹ 27 × (30 × 3,000)]	₹16,70,400 [₹ 30 × (30 × 1,856)]
Total Cost [(a) + (b) + (c) + (d)]	₹ 1,22,16,375	₹ 1,25,37,576

Purchasing of material - A at present policy of 15,000 kg. saves ₹ 3,21,201.

Notes: (i) Since, material gets obsolete after 10 days, the quantity in excess of 10 days consumption i.e. 12,000 kg. are wasted. Hence, after 12,000 kg. a fresh order needs to be given.

(ii) Carrying cost is incurred on average stock of Materials purchased.

(iii) the excess quantity of material gets obsolete and loss has to be incurred.

(v) (c) Minimum Stock Level for Material A

= Re-order level – (Average Consumption Rate x Average Re-order Period)

= 2400 – (1200 x 1.5) = 600 kgs

Re-order level = Max. Consumption* × Max. Lead time

= 30,000/25 × 2 days = 2,400 kg.

2. (i) (d) Budgeted Machine hour rate (Blanket rate) $= \frac{₹\ 50,40,000}{6,000\ \text{hours}} = ₹840\ \text{per hour}$

(ii) (a)

(iii) (a)

	Amount (₹)	Amount (₹)
Total production overheads actually incurred during the period		34,08,000
Less: Amount paid to worker as per court order	4,50,000	
Expenses of previous year booked in the current year	1,00,000	
Wages paid for the strike period under an award	4,20,000	
Obsolete stores written off	36,000	10,06,000
		24,02,000
Less: Production overheads absorbed as per machine hour rate (3,000 hours × ₹840*)		25,20,000
Amount of over absorbed production overheads		1,18,000

* Budgeted Machine hour rate (Blanket rate) calculated in part (i)

(iv) (b) Accounting treatment of over absorbed production overheads: As, 40% of the over absorbed overheads were due to defective production policies, this being abnormal, hence should be credited to Costing Profit and Loss Account.

Amount to be credited to Costing Profit and Loss Account

= ₹1,18,000× 40% = ₹47,200.

Balance of over absorbed production overheads should be distributed over Works in progress, Finished goods and Cost of sales by applying supplementary rate*.

Amount to be distributed = ₹1,18,000× 60% = ₹70,800

Supplementary rate =

(v) (c) Apportionment of over absorbed production overheads over WIP, Finished goods and Cost of sales:

	Equivalent completed units	Amount (₹)
Work-in-Progress (80,000 units × 50% × 0.472)	40,000	18,880
Finished goods (20,000 units × 0.472)	20,000	9,440
Cost of sales (90,000 units × 0.472)	90,000	42,480
Total	1,50,000	70,800

3. **(b)** Let the wages be 'X'

Therefore:

Material	2,40,000
Wages	'X'
Prime cost	2,40,000 + X
Factory overheads	0.75X
Factory cost	2,40,000 + 1.75X
Quality control cost and research and development cost	20% (2,40,000 + 1.75X)
Cost of Production	75,000
288000 + 2.1X	= 7,50,000
X	= 2,20,000

4. **(b)** Rooms days

Summer	200 x 80% x 30 x 4	=19,200
Winter	200 x 25% x 30 x 4	= 6,000
Autumn	200 x 60% x 30 x 4	= 14,400
Total room days:		39,600

5. **(a)** Variable overhead cost variance: Standard Variable overheads - Actual variable overheads

8,000/2,500 x 3,000 – 10,000 = 400A

Fixed overhead cost variance: Standard fixed overheads - Actual fixed overheads

12,000/2,500 x 3,000 – 11,800 = 2,600F

6. **(c)** Equivalent Units:

Units transferred: 24,000 x 100%	=	24,000
Closing WIP: 2,500 x 60%	=	1,560
Total Equivalent units		25,560

7. **(a)** If final sales are ₹ 50,000 and separable costs are ₹ 35,000, then net realizable value will be ₹15,000.

PART-II – Descriptive Questions

1. (a) Calculation of Total Cost and Selling Price

		Job XYZ (₹)		Job MNO (₹)
Direct material		15,400		10,800
Direct labour				
Department A	(20 x ₹76)	1,520	(16 x₹ 76)	1,216
Department B	(12 x ₹70)	840	(10 x ₹70)	700
Department C	(10 x ₹ 68)	680	(14 x ₹68)	952
Total Direct cost		18,440		13,668
Overhead:				
Department A	(20 x ₹12.86)	257.20	(16 x ₹12.86)	205.76
Department B	(12 x ₹12.40)	148.80	(10 x ₹12.40)	124.00
Department C	(10 x ₹ 14.03)	140.30	(14 x ₹ 14.03)	196.42
Total cost		18,986.30		14,194.18
Profit (note)		6,328.77		4,731.39
Quoted selling price		25,315.07		18,925.57

Note: If profit is 25% on selling price this is the same as 33 1/3 % (25/75) on cost.

	(₹)
Selling price	100
Cost	75
Profit	25

(b) (i) Calculation of Administration cost:

Particulars	Amount (₹)
Salary paid to office staffs	8,20,000
Fees paid to auditors	92,000
Vehicle hire charges paid for directors attending general meeting	10,200
Fees paid to independent directors	1,02,000
	10,24,200

(ii) Calculation of Selling cost:

Particulars	Amount (₹)
Salary paid to sales manager	8,00,000
Wages paid to workers engaged in storing goods at sales depot	7,200
Travelling allowance paid to sales staffs	9,600
Electricity bill paid for sales office	1,800

Bonus paid to sales staffs for achieving targets	96,000
	9,14,600

(iii) Calculation of Distribution cost:

Particulars	Amount (₹)
Cost paid for secondary packing	8,200
Depreciation on goods delivery vehicles	13,000
	21,200

(c) (i) Separation method

$$= \frac{\text{Number of workers separated during the year}}{\text{Average number of workers on roll during the year}} \times 100$$

$$= \frac{29+85}{(1900+2250)/2} \times 100 = 5.49\%$$

(ii) Replacement method

$$= \frac{\text{Number of workers replaced during the year}}{\text{Average number of workers on roll during the year}} \times 100$$

$$= \frac{480}{(1900+2250)/2} \times 100 = 23.13\%$$

(iii) Flux method

$$= \frac{\text{Number of workers separated+ Number of workers replaced during the year}}{\text{Average number of workers on roll during the year}} \times 100$$

$$= \frac{114+480}{(1900+2250)/2} \times 100 = 28.63\%$$

2. (a) Process Account

Particulars		*Units*	*Amount*	*Particulars*		*Units*	*Amount*
			₹				₹
To	Units introduced	50,000	1,47,000	By	Normal loss @ ₹ 1	1,500	1,500
To	Direct material		1,38,300	By	Abnormal loss*	1,200	6,960
To	Direct wages		65,550	By	Finished production*	39,300	3,65,490
To	Production overhead		74,700	By	Closing WIP*	8,000	51,600
		50,000	4,25,550			50,000	4,25,550

Abnormal Loss Account

Particulars		*Amount*	*Particulars*		*Amount*
		₹			₹
To	Process A/c	6,960	By	Scrap (120 × ₹ 1)	1,200
			By	Profit and Loss A/c	5,760
		6,960			6,960

*See working notes.

Working Notes:

This is a peculiar question of normal / abnormal loss involving use of equivalent concept. For valuation of abnormal loss, finished production and WIP, first of all equivalent units for them will have to be found out as under:

Statement showing equivalent units

Particulars	Input Materials			Direct wages		P. overheads	
		%	Units	%	Units	%	Units
Abnormal loss	1,200	66.67	800	33.33	400	16.67	200
Finished units	39,300	100.00	39,300	100.00	39,300	100.00	39,300
Clg. WIP	8,000	75.00	6,000	50.00	4,000	25.00	2,000
Total	48,500		46,100		43,700		41,500

Statement of Cost per Equivalent unit for each element

Particulars		Cost	Equivalent Unit	Cost per unit
		₹	₹	₹
Input material	1,47,000			
Less: Scrap realization	1,500	1,45,500	48,500	3.00
Materials added		1,38,300	46,100	3.00
Direct wages		65,550	43,700	1.50
Production overhead		74,700	41,500	1.80

Statement showing cost of Abnormal Loss, finished production and WIP

Particulars	**Cost per unit**	**Equivalent units**	**Total cost**
Abnormal Loss			
Input	1,200	3.00	3,600
Material added	800	3.00	2,400
Direct wages	400	1.50	600
Production overheads	200	1.80	360
			6,960
Finished Production			
Input	39,300	3.00	1,17,900
Material added	39,300	3.00	1,17,900
Direct wages	39,300	1.50	58,950
Production overheads	39,300	1.80	70,740
			3,65,490
Closing WIP			
Input	8,000	3.00	24,000

Material added	6,000	3.00	18,000
Direct wages	4,000	1.50	6,000
Production overheads	2,000	1.80	3,600
			51,600

(b) Standard Quantity of Materials for Actual Output:

P	6,000 × 2	12,000 units
Q	6,000 × 3	18,000 units
R	6,000 × 15	90,000 units
Standard hours for Actual Output:		
	6,000 × 3	18,000 units

Material price Variance:

(Standard Price – Actual Price) × Actual Quantity		₹
P	(₹ 4.00 – ₹ 4.40) × 12,500	5,000 A
Q	(₹ 3.00 – ₹ 2.80) × 18,000	3,600 F
R	(₹ 1.00 – ₹ 1.20) × 88,500	17,700 A
		19,100 A

Material Usage Variance:

(Standard Usage – Actual Usage) × Standard Price

P	(12,000 – 12,500) × ₹ 4.00	2,000 A
Q	(18,000 – 18,000) × ₹ 3.00	Nil
R	(90,000 – 88,500) × ₹ 1.00	1,500 F
		500 A

Labour Rate Variance:

(Standard Rate – Actual Rate) × Actual hours

(₹ 8.00 – ₹ 12.00) × 2,500	10,000 A
(₹ 8.00 – ₹ 8.00) × 15,000	Nil
	10,000 A

Labour Efficiency Variance:

(Standard hours – Actual hours) × Standard Rate

(18,000 – 17,500) × ₹ 8.00	4,000 F

3. (a) Income Statement (under Marginal Costing)

	May	June
	₹ ('000)	*₹ ('000)*
(A) Sales	12,095	15,340
Variable manufacturing cost	9,600	10,400
Add: opening inventory @ ₹40,000 per unit	–	1,400
Cost of Goods available for sale	9,600	11,800
Less: Closing inventory @ ₹40,000 per Unit	1,400	1,400
Variable cost of goods sold	8,200	10,400
Variable distribution cost	820	1,040
(B) Total variable cost	9,020	11,440
(C) Contribution (A-B)	3,075	3,900
Fixed cost:-Manufacturing	3,200	3,200
Marketing	600	600
(D) Total fixed cost	3,800	3,800
Net Income (C-D)	(725)	100

Income Statement (under Absorption Costing)

	May	June
(A) Sales	12,095	15,340
Variable manufacturing	9,600	10,400
Fixed manufacturing cost	3,200	3,200
	12,800	13,600
Add: opening inventory*	–	1,867
Cost of goods available for sales	12,800	15,467
Less: Closing inventory*	1,867	1,831
Cost of goods sold	10,933	13,636
Add: Distribution cost-variable	820	1,040
Add: Marketing cost-fixed	600	600
(B) Total Cost	12353	15276
Net Income (A-B)	(258)	64

Comments Marginal costing rewards sales while absorption costing rewards production. This means that when sales are more than production, marginal costing produces higher profit and vice versa, when production is more than sales, absorption costing shows higher profit.

In August, absorption costing shows higher profit by ₹6,60,000 (i.e., 19,10,000 – 12,50,000) than marginal costing because production is more than sales . In September marginal costing shows higher profit than absorption costing by ₹ 4,35,000.

Sales are more than production. Difference in profit is exactly equal to difference in inventory values in the two months.

***Working Notes:**

In marginal costing inventory is valued at variable manufacturing cost while in absorption costing inventory valuation is done as follows:

For June closing inventory of 35 Units:

	₹
Variable manufacturing cost (35 units @ ₹40,000)	14,00,000
Fixed manufacturing cost (35 units @ ₹12,308)	4,30,780
	18,30,780

Fixed manufacturing cost per unit is calculated as under:

$$\frac{₹\ 32,00,000}{260 \text{ units of production}} = ₹\ 12,308 \text{ per unit}$$

For May, inventory of 35 units:

	₹
Variable manufacturing cost (35 units @ ₹40,000)	14,00,000
Fixed manufacturing cost (35 units @ ₹13,333)	4,66,667
	18,66,667

$$\text{Fixed manufacturing cost per unit} = \frac{₹\ 32,00,000}{240 \text{ units of production}} = ₹\ 13,333 \text{ per unit}$$

(b) The two approaches will compute the different profit because of the difference in the stock valuation. This difference is explained as follows in different circumstances.

1. **No opening and closing stock:** In this case, profit / loss under absorption and marginal costing will be equal.
2. **When opening stock is equal to closing stock:** In this case, profit / loss under two approaches will be equal provided the fixed cost element in both the stocks is same amount.
3. **When closing stock is more than opening stock:** In other words, when production during a period is more than sales, then **profit as per absorption approach will be more** than that by marginal approach. The reason behind this difference is that a part of fixed overhead included in closing stock value is carried forward to next accounting period.
4. **When opening stock is more than the closing stock:** In other words, when production is less than the sales, **profit shown by marginal costing will be more** than that shown by absorption costing. This is because a part of fixed cost from the preceding period is added to the current year's cost of goods sold in the form of opening stock.

(c) Financial expenses which are not included in cost accounting are as follows:

- Interest on debentures and deposit
- Gratuity
- Pension
- Bonus of Employee,
- Income Tax,
- Preliminary Expenses
- Discount on issue of Share
- Underwriting Commissions.

4. (a) Journal entries are as follows:

			Dr.	*Cr.*
			₹	₹
1.	Finished stock ledger Control A/c	Dr.	2,10,000	
	To Work-in-Progress Control A/c			2,10,000
2.	Manufacturing Overhead Control A/c	Dr.	90,000	
	To Cost Ledger Control A/c			90,000
3.	Stores Ledger Control A/c	Dr.	1,23,000	
	To Cost Ledger Control A/c			1,23,000
4.	(*i*) Wage Control A/c	Dr.	71,000	
	To Cost Ledger Control A/c			71,000
	(*ii*) Work-in-progress Control A/c	Dr.	50,000	
	To Wage Control A/c			50,000
	(*iii*) Manufacturing Overhead Control A/c	Dr.	21,000	
	To Wage Control A/c			21,000
5.	Cost of Sales A/c	Dr.	1,85,000	
	To Finished Stock Ledger A/c			1,85,000
6.	Work-in-Progress Control A/c	Dr.	1,27,000	
	To Stores Ledger Control A/c			1,27,000
7.	Finished Stock Ledger Control A/c	Dr.	5,000	
	To Cost of Sales A/c			5,000
8.	Cost Ledger Control A/c	Dr.	3,000	
	To Stores Ledger Control A/c			3,000
9.	Work-in-Progress Control A/c	Dr.	77,000	
	To Manufacturing Overhead Control A/c			77,000

(b) (i) Traditional Absorption Costing

	BABY SOFT-Gold	BABY SOFT-Pearl	BABY SOFT-Diamond	*Total*
(a) Production of soaps (Units)	4,000	3,000	2,000	9,000
(b) Direct labour (minutes)	30	40	60	-
(c) Direct labour hours (a × b)/60 minutes	2,000	2,000	2,000	6,000

Overhead rate per direct labour hour:

= Budgeted overheads ÷ Budgeted labour hours

= ₹ 1,98,000 ÷ 6,000 hours

= ₹ 33 per direct labour hour

Unit Costs:

	BABYSOFT- Gold (₹)	BABYSOFT-Pearl (₹)	BABYSOFT-Diamond (₹)
Direct Costs:			
- Direct Labour	5.00 $\left(\frac{10 \times 30}{60}\right)$	6.67 $\left(\frac{10 \times 40}{60}\right)$	10.00 $\left(\frac{10 \times 60}{60}\right)$
- Direct Material	167.50 $\left(60 \times \frac{200}{100}\right) + \left(20 \times \frac{200}{100}\right) + \left(30 \times \frac{15}{100}\right) + \left(10 \times \frac{30}{100}\right)$	215.50 $\left(55 \times \frac{300}{100}\right) + \left(20 \times \frac{200}{100}\right) + \left(30 \times \frac{15}{100}\right) + \left(12 \times \frac{50}{100}\right)$	248.50 $\left(65 \times \frac{300}{100}\right) + \left(20 \times \frac{200}{100}\right) + \left(30 \times \frac{15}{100}\right) + \left(15 \times \frac{60}{100}\right)$
Production Overhead:	16.50 $\left(33 \times \frac{30}{60}\right)$	22.00 $\left(33 \times \frac{40}{60}\right)$	33.00 $\left(33 \times \frac{60}{60}\right)$
Total unit costs	189.00	244.17	291.50
Number of units	4,000	3,000	2,000
Total costs	**7,56,000**	**7,32,510**	**5,83,000**

(ii) Activity Based Costing

	BABYSOFT- Gold	BABYSOFT- Pearl	BABYSOFT-Diamond	Total
Quantity (units)	4,000	3,000	2,000	-
Weight per unit (grams)	102 $((60 \times .8) + 20 + (30 \times .8) + 10))$	100 $((55 \times .8) + 20 + (30 \times .8) + 12))$	111 $((65 \times .8) + 20 + (30 \times .8) + 15))$	-
Total weight (grams)	4,08,000	3,00,000	2,22,000	9,30,000
Direct labour (minutes)	30	40	60	-

Direct labour hours	2,000 $\left(4{,}000 \times \frac{30}{60}\right)$	2,000 $\left(3{,}000 \times \frac{40}{60}\right)$	2,000 $\left(2{,}000 \times \frac{60}{60}\right)$	6,000
Machine operations per unit	5	5	6	-
Total operations	20,000	15,000	12,000	47,000

Forklifting rate per gram = ₹ 58,000 ÷ 9,30,000 grams = ₹ 0.06 per gram

Supervising rate per direct labour hour = ₹ 60,000 ÷ 6,000 hours
= ₹ 10 per labour hour

Utilities rate per machine operations = ₹ 80,000 ÷ 47,000 machine operations
= ₹ 1.70 per machine operations

Unit Costs:

	BABYSOFT-Gold (₹)	**BABYSOFT-Pearl (₹)**	**BABYSOFT-Diamond (₹)**
Direct Costs:			
- Direct Labour	5.00	6.67	10.00
- Direct material	167.50	215.50	248.50
Production Overheads:			
Forklifting cost	6.12 (0.06 × 102)	6.00 (0.06 × 100)	6.66 (0.06 × 111)
Supervising cost	5.00 $\left(\frac{10 \times 30}{60}\right)$	6.67 $\left(\frac{10 \times 40}{60}\right)$	10.00 $\left(\frac{10 \times 60}{60}\right)$
Utilities	8.50 (1.70 × 5)	8.50 (1.70 × 5)	10.20 (1.70 × 6)
Total unit costs	192.12	243.34	285.36
Number of units	4,000	3,000	2,000
Total costs	**7,68,480**	**7,30,020**	**5,70,720**

5. (a) Flexible Budget for the period ….

	80% ₹	*90%* ₹	*100%* ₹	*110%* ₹
Sales	9,60,000	10,80,000	12,00,000	13,20,000
Administration Costs:				
Office Salaries (fixed)	1,10,000	1,10,000	1,10,000	1,10,000
General expenses (2% of Sales)	19,200	21,600	24,000	26,400
Depreciation (fixed)	6,200	6,200	6,200	6,200
Rent and rates (fixed)	9,750	9,750	9,750	9,750
(A) Total Adm. Costs	1,45,150	1,47,550	1,49,950	1,52,350

Selling Costs :				
Salaries (6% of sales)	57,600	64,800	72,000	79,200
Travelling expenses (5% of sales)	48,000	54,000	60,000	66,000
Sales office (2% of sales)	19,200	21,600	24,000	26,400
General expenses (1% of sales)	9,600	10,800	12,000	13,200
(B) Total Selling Costs	1,34,400	1,51,200	1,68,000	1,84,800
Distribution Costs :				
Wages (2% of sales)	19,200	21,600	24,000	26,400
Rent (1% of sales)	9,600	10,800	12,000	13,200
Other expenses (6% of sales)	57,600	64,800	72,000	79,200
(C) Total Distribution Costs	86,400	97,200	1,08,000	1,18,800
Total Costs (A + B + C)	3,65,950	3,95,950	4,25,950	4,55,950

Note : All fixed costs have been assumed to remain unchanged even at 110% capacity. However, in practice, fixed costs may change when capacity utilisation exceeds 100%.

(b) Statement showing cost per patient day

Particulars	Amount (₹)
A. *Variable Cost*	
Food Supplied to patients (₹ 72 × 5,600*)	4,03,200
Laundry charges (₹ 30 × 5,600)	1,68,000
Medicines (₹ 60 × 5,600)	3,36,000
Expert doctors fee (₹ 250 × 5,600)	14,00,000
	23,07,200
B. *Fixed Cost*	
Rent of the premises (₹ 15,000 × 12)	1,80,000
Repairs & Maintenance	10,000
Administrative expenses	72,000
Salary expenses:	
- Supervisors (2 × ₹ 2,000 × 12)	48,000
- Nurses (4 × ₹ 1,500 × 12)	72,000
- Ward Boys (2 × ₹ 1,200 × 12)	28,800
	4,10,800
C Total Cost (A + B)	27,18,000

* Refer to working note -1

(i) Fee should have been charged to earn 75% profit on fees received

Let fee charged is 'X', then profit will be 0.75 X

Total fee: X – 0.75 X = ₹ 27,18,000

Or, X = 1,08,72,000

Fee should have been charged for per patient-day

$= \frac{₹1,08,72,000}{5,600} = ₹1941.43$

6. (a) Difference between fixed and flexible budgets

S. No.	Fixed Budget	Flexible Budget
1.	It does not change with actual volume of activity achieved. Thus it is rigid	It can be recasted on the basis of activity level to be achieved. Thus it is not rigid.
2	It operates on one level of activity and under one set of conditions	It consists of various budgets for different level of activity.
3	If the budgeted and actual activity levels differ significantly, then cost ascertainment and price fixation do not give a correct picture.	It facilitates the cost ascertainment and price fixation at different levels of activity.
4.	Comparisons of actual and budgeted targets are meaningless particularly when there is difference between two levels.	It provided meaningful basis of comparison of actual and budgeted targets.

(b) Scope of Cost Reduction: Cost reduction is attainable in almost all areas of business activities. There is perhaps no situation which cannot be improved. It covers a wide range like new layout, product design, production methods, materials and machines in factories as well as in offices, innovation in marketing, etc. It also extends to specified activities like purchasing, handling, packaging, shipping, warehousing, marketing, use of administrative facilities and even utilisation of financial resources.

Excessive cost may result in every organisation from:

(a) Lack of information about raw materials, processes, products, components etc.

(b) Lack of utilisation of ideas generated from performance and economic analysis.

(c) Honest but wrong beliefs that certain things are impossible for achievement.

(d) Temporary circumstances like features developed under pressure or modifications made to meet certain circumstances.

(e) Habits and attitudes of confining to one conventional method.

It is not necessary for management to proceed in any specific sequence in considering the various aspects of cost reduction and it may be

necessary to start the campaign in more than one direction at the same time.

(c) Job Costing and Batch Costing : According to Job Costing, costs are collected and accumulated according to jobs. Each job or unit of production is treated as a separate entity for the purpose of costing. Job Costing may be employed when jobs are executed for different customers according to their specifications.

Batch Costing is a form of Job Costing, a lot of similar units which comprises the batch may be used as a cost unit for ascertaining job. Such a method of costing is used in case of pharmaceutical industry readymade garments industries, manufacturing parts of TV, radio sets etc.

OR

(d) ***Time and motions study:*** It is the study of time taken and motions (movements) performed by workers while performing their jobs at the place of their work. Time and motion study has played a significant role in controlling and reducing labour cost.

Time Study is concerned with the determination of standard time required by a person of average ability to perform a job. Motion study, on the other hand, is concerned with determining the proper method of performing a job so that there are no wasteful movements, hiring the worker unnecessarily. However, both the studies are conducted simultaneously. Since materials, tools, equipment and general arrangement of work, all have vital bearing on the method and time required for its completion. Therefore, their study would be incomplete and would not yield its full benefit without a proper consideration of these factors.

Time and motion study is important to management because of the following features:

1. Improved methods, layout, and design of work ensure effective use of men, material and resources.
2. Unnecessary and wasteful methods are pin-pointed with a view to either improving them or eliminating them altogether. This leads to reduction in the work content of an operation, economy in human efforts and reduction of fatigue.
3. Highest possible level of efficiency is achieved in all respect.
4. Provides information for setting labour standards - a step towards labour cost control and cost reduction.
5. Useful for fixing wage rates and introducing effective incentive scheme.