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Prof. Dani Khandelwal (CA)

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COST MANAGEMENT ACCOUNTING

CA Inter Course Paper-3

Group-I

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CHAPTER-1

MATERIAL

Question - 1

The following details apply to annual budget for a manufacturing company:

Quarter	1 st	2 nd	3 rd	4 th
Working days	65	60	55	60
Production (units per working day)	100	110	120	105
Raw materials purchases				
(% by weight of annual total)	30%	50%	20%	-
Budgeted purchase price (per kg.)	Rs. 1	1.05	1.125	-

Quantity of raw material per unit production: 2 kg.

Budgeted opening stock material : 4,000 kg. (Cost Rs. 4, 000)

Budgeted closing stock of raw material: 2,000 kg.

Issues are priced of FIFO basis.

Calculate the following budgeted figures:

- a) Quarterly and annual purchases of raw material, by weight and value.
- b) Closing quarterly stock by weight and value.

Question - 2

Oil India is a bulk distributor of high octane petrol. A periodic inventory of petrol on hand is taken when the books are closed at the end of each month. The following summary of Information for the month of June 2016 was available.

	Rs.
Sales	: 9, 45,000
General Administrative Cost	: 25,000
Opening stock	: 1, 00,000 litres @ Rs. 3 per ltr.
Purchases	
June 1.	: 2, 00,000 litres @ Rs. 2.85 per ltr.
June 30.	: 1, 00,000 litres @ Rs. 3.03 per ltr.
June 30.	: 1, 30,000 litres (Cl. Stock)

Compute the following data by the first-In-first out. Weighted average and last in first out method of Inventory costing.

- a) Value of Inventory on June 30.
- b) Amount of the cost of goods sold for June.
- c) Profit or loss for June.

Question - 3

The particulars relating to the import of D Selling Ring made by AB & Co., during December, 2016 are given below:

- a) Sealing Ring-1,000 pieces invoiced @ UK £2.00 C.I.F. Bombay Port.
- b) Custom duty was paid @100% on Invoice Value (which was converted to Indian currency by adopting an exchange rate of Rs .17.20 per UK£.)
- c) Clearing charges-Rs. 1,800 for the entire consignment, and
- d) Freight charges-Rs. 1,400 for transporting the consignment from Bombay Port to factory premises.

It was found on inspection that 100 pieces of the above material were broken and, therefore rejected. There is no scarp value for the rejected part. No refund for the broken material would be admissible as per the terms of contract. The Management decided to treat 60 pieces as normal loss and the rest 40 pieces as abnormal loss. The entire quantity of 900 pieces was issued to production.

Calculate:

- a) Total cost of material, and
- b) Unit cost of material issued to production.

Also state briefly how the value of 100 pieces rejected in inspection will be treated in costs.

Question - 4

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

	<u>Rs.</u>
Chemical B: 3,000 kg. @ Rs. 3.80 per kg.	12,600
Chemical A: 5,000 kg. @ Rs. 4. per kg.	19000
Chemical C: 2,000 kg. @ Rs. 4.75 per kg.	9,500
Sales Tax	2055
Railway Freight	1,000
Total cost	44155

A Shortage of 200 kg. in chemical A, of 280 kg. in chemical B & of 100 kg. in chemical C was noticed due to breakages. At Surat, the manufacturer paid Octroi duty @Rs. 0.10 per kg. he also paid Cartage Rs. 22 for Chemical A, Rs. 63.12 for Chemical B and Rs. 31.80 for Chemical C.

Calculate the stock rate that you would suggest for pricing issue of chemical assuming a provision of 5% towards further deterioration.

Question - 5

A Manufacturer buys certain equipment from outside suppliers at Rs.30 per unit total annual needs is 800 units. The Following further data are available:

Annual return on investment 10%

Rent, Insurance, taxes per unit per year Re. 1

Cost of placing an order Rs. 100

Determine economic order quantity.

Question - 6

G Ltd. produces product which has a monthly demand of 4,000 units. The product requires a component X which is purchased at Rs 20. For every finished product, one unit of component is required. The ordering cost is Rs. 120 per order and the holding cost is 10% p.a.

You are required to calculate:

i. Economic order quantity

- ii. If the minimum lot size to be supplied is 4,000 units, what is the extra cost, the company has to incur?
- iii. What is the minimum carrying cost, the company has to incur?

Question - 7

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

	<u>Rs.</u>
Purchase Price per Component	200
Cost of an Order	100
Annual cost of Carrying one unit of 10% purchase in inventory Price	
Total Cost of carrying and Ordering Per Annum	4000

The company has been offered a discount of 2% on the price of the component provided the lot size is 2,000 components at a time.

You are required to:

- a) Compute the EOQ
- b) Advise whether the quantity discount offer can be accepted.
(Assume that the inventory carrying cost does not vary according to discount policy.)
- c) Would your advice differ if the company is offered 5% discount on single order?

Question - 8

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

<u>Price per tonne Rs.</u>	<u>Tonnes Nos.</u>
1,200	less than 500
1,180	500 and less than 1,000
1,160	1,000 and less than 2,000
1,140	2,000 and less than 3,000
1,120	3,000 and above.

The annual requirement for the material is 5,000 tonnes. The ordering cost per order is Rs. 1,200 and the stock holding is estimated to 20% of material cost per annum.

You are required to compute the most economical Purchase level

b) What will be your answer to the above question if there are no discounts offered and the price per tonne is Rs. 1,500?

Question - 9

Two components A & B are used as follows:

Normal usage	= 50 per week each
Reordering quantity	= A 300, B-500
Maximum usage	= 75 per week each
Minimum usage	= 25 per week each

Lead Time: A-4 to 6 weeks, B 2 to 4 weeks.

Calculate for each component

- Re-ordering level
- Minimum level
- Maximum level
- Average stock level

Question - 10

A company manufactures 5000 units of a product per month. The cost of placing an order is Rs. 100. The purchase price of the raw material is Rs. 10 per kg. The re-order period is 4 to 8 weeks. The consumption of raw materials varies from m 100 kg to 450 kg per week, the average consumption being 275 kg. The carrying cost of inventory is 20% per annum.

You are required to calculate:

- Re-order quantity
- Re-order level
- Maximum level
- Minimum level
- Average stock level.

Question - 11

M/s. Tubes Ltd. is the manufacturer of picture tubes for T.V. The following are the details of their operation during 2016:

Average monthly market demand	2,000 Tubes
Ordering cost	Rs. 100 per order
Inventory Carrying Cost	20% per annum
Cost of Tubes	Rs 500 per tube
Normal Usage	100 tubes per week
Minimum Usage	50 tubes per week
Maximum usage	200 tubes per week
Lead time to supply	6-8 weeks

Compute from the above:

1. Economic order Quantity, if the supplier is willing to supply quarterly 1500 units at a discount of 5%, it is worth accepting?
2. Maximum level of the stock
3. Minimum Level of the stock
4. Reorder level

Question - 12

From the details given below, calculate:

- (i) Re-ordering level
- (ii) Maximum Level
- (iii) Minimum level
- (iv) Danger level

Re-ordering quantity is to be calculated on the basis of the following information:

Cost of placing a purchase order is Rs.20.

Number of units to be purchased during the year is 5,000.

Purchase Price per Unit inclusive of transportation cost is Rs.50

Annual Cost of Storage per Unit is Rs.5.

Details of lead Time: Average 10 days, Maximum 15 days, Minimum 5 days for emergency purchases 4 Days.

Rate of Consumption: Average: 15 units per day, Maximum: 20 units per day.

CHAPTER-2

LABOUR

Question - 1

A worker takes 6 hours to complete a job under a scheme of payment by results. The standard time allowed for the job is 9 hours. His wage is Rs. 1.50 per hour. Material cost of the job is Rs. 16/- and the overheads are recovered at 150% of the total direct wages.

Calculate the factory cost of job under

Rowan System

Halsey System

Question - 2

In an engineering concern, the employees are paid incentive bonus in addition to their normal wages at hourly rates. Incentive bonus is calculated in proportion of time taken to time allowed, of the time saved. The following details are made available in respect of employees X, Y and Z for a particular week:-

	X	Y	Z
Normal Wages (Re. per hour)	4.00	5.00	6.00
Completed Units of production	6000	3000	4800
Time allowed {Per 100 units}	0.8 hr.	1.5 hr.	1. hr.
Actual time taken (hours)	42	40	48

You are required to work out for each employee:

- (i) The amount of bonus earned ;
- (ii) The total amount of wages received;
- (iii) The total wage cost per 100 units of output.

Question - 3

In a factory two workmen A and B produce the same product using the same material. Their normal wage rate is also the same. They are paid bonus according to the Rowan System. The time allotted to the product is 40 hours. A takes 25

hours and B takes 30 hours to finish the product. The factory cost of the product for A is Rs. 193.75 and B, Rs. 205. The factory overhead rate is one rupee per man-hour.

Find the normal rate of wages and the cost of materials used for the product.

Question - 4

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 Rs. 7.50 per labour hour worked. The factory cost of the job comes to Rs. 2,600 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.

Question - 5

During the first week of April 2016 the workman Mr. Kalyan manufactured 300 articles. He receives wages for a guaranteed 48 hours week at the rate of Rs.4 per hour. The estimated time to produce one article is 10 minutes and under incentive scheme the time allowed is increased by 20%. This incentive takes care of the normal idle time.

Calculate his gross wages according to-

- a) Piece work with a guaranteed weekly wage.
- b) Rowan premium bonus and
- c) Halsey premium bonus with 50% to the workman.

Question - 6

- a) Bonus paid under the Halsey Plan with bonus at 50% for the time saved equals the bonus paid under
- b) The Rowan System. When will this statement hold good? (Your answer should contain the proof).

The time allowed for a job is 8 hours. The hourly rate is Rs.8. Prepare a statement showing:

- (i) The bonus earned
- (ii) The total earnings of labour and
- (iii) Hourly earnings

Under the Halsey system and Rowan system for each hour saved progressively

Question - 7

Mr. A is working by employing 10 skilled workers. He is considering the introduction of some scheme incentive -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%. He feels that if the proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers, it could act as sufficient incentive for them to produce more and he has accordingly given this assurance to the workers.

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

Hourly rate of wages (guaranteed)	Rs. 2.00
Average time for producing 1 piece By one worker at the previous performance (This may be taken as time allowed)	2 hours
No. of working days in the month	25
No. of working hours per day for each worker	8
Actual production during the month	1250 Unit

Required:

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

Question 8

ZED Limited is working by employing 50 skilled workers. It is considered the introduction of incentive scheme either Halsey scheme (with 50% bonus) or

Rowan scheme of wage payment for increasing the labour productivity to cope up the increasing demand for the product by 40%. It is believed that proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers; it could act as sufficient incentive for them to produce more.

Because of assurance, the increase in productivity has been observed as revealed by the figures for the month of April 2016.

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

Required:

- Calculate the effective rate of earnings under the Halsey scheme and the Rowan scheme.
- Calculate the savings to the ZED Limited in terms of direct labour cost per piece.
- Advise ZED Limited about the selection of the scheme to fulfill his assurance.

Question 9

What will be the earning of a worker at Rs. 2.25 per hour when he takes 130 hours to do a work for which the standard time allowed is 200 hours? He is entitled to bonus for the time saved of scale as follows:-

Within the first	10% of saving in standard time, bonus is	30% of time saved
Within the second	10% of saving in standard time, bonus is	40% of time saved
Within the third	10% of saving in standard time, bonus is	50% of time saved
Within the Fourth	10% of saving in standard time, bonus is	60% of time saved
And for the Rest		70% of time saved

Question 10

From the following particulars calculate the Group Bonus payable in each case and the amount that will be paid to each member of the group. Standard production in a week 120 units.

It is agreed that for every 10% increase in production, bonus of 5% of the total wages, payable of the week, will be paid and the same will be shared by the group consisting of 4 members in proportion to their total wages of the week.

Total production for the week 145 units.

Wages earned by the four members of the group (A,B,C & D) are respectively Rs.80/-,Rs. 78/-, Rs. 72/- and Rs. 69/-.

Question 11

Calculate the normal and overtime wages payable to a workman from the following data.

DAYS	HOURS WORKED
Monday	9 hours
Tuesday	10 hours
Wednesday	9 hours
Thursday	11 hours
Friday	9 hours
Saturday	5 hours
TOTAL	53 hours
Normal Working hours	8 hours per day
Normal rate	Rs. 0.50 per hour

Overtime rate: Up to 9 hours in a day, at single rate & over hours in a day, at double rate or up to 48 hours in a week at single rate and over 48 hours at double rate, whichever is more beneficial to the workman?

Question 12

The standard time for job X is 100 hours. The job has been completed by Amar in 60 hours, Akbar in 70 hours and Anthony in 95 hours. The rate of pay is Re. 1per hour. The bonus system applicable to job is as follows:

Percentage of time saved to time allowed	Bonus
Saving up to 10%	10% of time saved
From 11% to 20%	15% of time saved
From 21% to 40%	20% of time saved
From 41% to 100%	25% of time saved.

Calculate the total earnings of each worker and also the rate of earnings per hour.

Question 13

Following are the particulars for April, 2016 relating to four employees working in Department "M" of a factory, exclusively for job no. 120:-

<u>Name</u>	<u>Designation</u>	<u>Wages</u>	<u>Per</u>
A	Forman	800	Month
B	Mechanic	15	Day
C	Machine Operator	12	Day
D	Workman	10	Day

The normal working hours per week of six days are 48, at 8 hours per day. Sundays are paid holidays.
(There were no other holidays during the month).

Provide fund Contribution was 8% of monthly wages by employer & Employees. Employee State

Insurance contribution was 3% of monthly wages by employee & 5% of monthly wages by employer.

- Net Wages payable by the employer for the month;
- The total amount of Provident Fund Contribution to be deposited by employer.
- Employee State Insurance Contribution to be deposited by employer;
- Total labor cost to the employer for the month of April, chargeable to the job;
- The total cost of the job requiring materials valued at Rs. 6,000 and overheads at 50% of prime cost

Question 14

An article passes through five hand operations as follow:

Operation No.	Time Per article	Grade of worker	Wage rate per hour
1	15 minutes	A	0.65
2	25 minutes	B	0.5
3	10 minutes	C	0.4
4	30 minutes	D	0.35
5	20 minutes	E	0.3

The factory works 40 hours a week and the production target is 600 dozens per week.

Prepare a statement showing for each operation and in total the number of operators required, the labour cost per dozen and the total labour cost per week to produce the total targeted output.

Question 15

The management of Sunshine Ltd. wants to have an idea of the profit lost/foregone as a result of labour turnover last year.

Last year sales accounted to Rs. 66, 00,000 and P/V Ratio were 20%. The total number of actual hours worked by the direct labour force was 3.45 lakhs. As a result of the delays by the Personnel Department in filling vacancies due to labour turnover, 75,000 potentially productive hours were lost. The actual direct labour included 30,000 hours attributable to training new recruits, out of which half of the hours were unproductive. The costs incurred consequent on labour turnover revealed on analysis the following:

	Rs.
Settlement cost due to leaving	27,420
Recruitment costs	18,725
Selection costs	12,750
Training costs	16,105

Assuming that the potential production lost due to labour turnover could have been prevailing prices, ascertain the profit foregone/lost last year on account of labour turnover.

Question 16

From the following data, given by the Personnel Department, calculate the labour turnover rate

Applying:

Separation Method

Replacement Method

Flux Method

No. of workers on the payroll

At the beginning of the month 900

At the End of the month 1100

During the month 10 workers left and 40 persons were discharged while 250 workers were

Recruited Of these, 25 workers are recruited the vacancies of those leaving while rest was Announce Engaged for an expansion **Scheme ...**

CHAPTER- 3

OVERHEAD

Question 1

In a manufacturing unit, factory overhead was recovered at a pre-determined rate of Rs. 25 per man-day. The total factory overhead expenses incurred and the man-days actually worked were Rs. 41.50 lakhs and 1.5 lakhs man-days respectively. Out of the 40,000 units produced during a period, 30,000 were sold.

On analysing the reasons, it was found that 60% of the unabsorbed overheads were due to defective planning and the rest were attributable to increase in overhead costs.

How would unabsorbed overheads be treated in Cost Accounts?

Question 2

The total overhead expenses of a factory are Rs. 4, 46,380. Taking into account the normal working of the factory, overhead was recovered in production at Rs. 1.25 per hour. The actual hours worked were 2, 93,104. How would you proceed to close the books of accounts, assuming that besides 7,800 units produced of which 7,000 were sold, there were 200 equivalent units in work-in-progress?

On investigation, it was found that 50% of the unabsorbed overhead was on account of increase in the cost of indirect materials and indirect labour and the remaining 50% was due to factory inefficiency. Also give the profit implication of the method suggested.

Question 3

The following information is obtained from the costing records of a factory:

Actual Overhead incurred	Rs. 3,75,000
Actual Hours worked	Rs. 2,50,000
Budgeted Rate of a recovery of overheads is	Rs. 1-00 per hour.
Units produced	9,800
Units sold	9,000
Units in work in progress	400 (50% complete)

On verification, it was found that 25% of the unabsorbed overhead due to the increase in cost of indirect material and indirect labour and 75% was due to inefficiency in the factory. Show the effects on costs of units produced, and on stocks values.

Question 4

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

Question 5

ABC Ltd. manufactures a single product and absorbs the production overheads at a pre-determined rate of Rs. 10 per machine hour. At the end of financial year 2016-17, it has been found that actual production overheads incurred were Rs.6,00,000. It included Rs. 45,000 on account of 'written off obsolete stores and Rs. 30,000 being the wages paid for the strike period under an award.

The production and sales data for the year 2016-17 is as under:

Production:

Finished goods	20,000 units
Work-in-progress	8,000 units (50% complete in all respects)

Sales:

Finished goods	18,000 units
----------------	--------------

The actual machine hours worked during the period were 48,000. It has been found that one-third of the under-absorption of production overheads was due to lack of production planning and the rest was attributable to normal increase in costs.

You are required to:

- i) Calculate the amount of under-absorption of production over heads during the year 2016-17;
- ii) Show the accounting treatment of under-absorption of production overheads.

Question 6

Separate departmental overhead application rates based on direct labour, are being used to buy a manufacturing company. At the end of the year, the following is supplied to you.

	Dept I	Dept. II	Dept. III
Overhead absorption rate	4	3	7
Actual overhead incurred	81,900	1,20,960	79,360
Overhead absorbed	72,800	1,00,800	86,800
Direct labour hours recorded against.			
Work-in-progress	2,800	4,930	820
Finished goods	5,400	3,700	1,210

- a. Calculate the revised overhead application rates per direct labour hour (to the nearest paise) in the light of actual figures for the year supplied to you.
- b. Calculate also the total amounts by which the work-In-progress and finished goods stock in each department will have to be increased or decreased in the light of the revised overhead application rates.

Question 7

SWEET DREAMS Ltd. uses a historical cost system and absorbs overheads on the basis of predetermined rate. The following data are available for the year ended 31st March, 2016.

Manufacturing overheads -	Rs.
Amount actually spent	1, 70,000
Amount absorbed	1, 50,000
Cost of goods sold	3, 36,000
Stock of finished goods	96,000
Work-in-progress	48,000

Using two methods of disposal of under-absorbed overheads show the implication on the profits of the company under each method.

Question 8

A certain cost centre consists of ten workers using similar machines. The normal week consists of 5 days, totaling 42 hr. each worker has two week's annual holidays, together with other holiday of 5 days per annum. Each week, two hours per operator should be spent in cleaning etc., and it is estimated that illness and absenteeism will cause the loss of 1,000 hours per annum. It is not anticipated that any overtime will be worked, or that any time other than stated will be lost.

Overheads allocated and apportioned to the cost center, which are to be absorbed at a rate per direct labour hour, total Rs. 13,875 and you are required to calculate the absorption rate.

During the year, actual overheads amounted to Rs. 14,500: time occupied in cleaning etc., totalled 1,000 hours. Time lost by illness and absenteeism totalled 1,300 hours; time lost by machine breakdown totalled 200 hours. Overtime worked on production during the period amounted to 800 hours.

Present the overhead absorption account at the year-end assuming that standard costing is not in operation.

Question 9

X Ltd. having fifteen different types of automatic machines furnishes information as under for 2016-17.

- (i) Overhead expenses: Factory rent Rs. 96,000 (Floor area 80,000 sq. ft.)
Heat and gas Rs. 45,000 and supervision Rs. 1, 20,000.
- (ii) Wages of the operator are Rs. 48 per day of 8 hours. He attends to one machine when it is under set up and two machines while they are under operation.

In respect of machine B (one of the above machines) the following particulars are furnished:

- (i) Cost of machine Rs. 45,000, Life of machine - 10 years and scrap value at the end of its life Rs. 5,000.

- (ii) Annual expenses on special equipment attached to the machine are estimated at Rs. 3,000.
- (iii) Estimated operation time of the machine is 3,600 hours while set up time is 400 hours per annum.
- (iv) The machine occupies 5,000 sq. ft. of floor area.
- (v) Power costs Rs. 2 per hour while. Machine is in operation.

Find out the comprehensive machine hour rate of machine B. Also find out machine costs to be absorbed in respect of use of machine B on the following two work-orders:

	Work-order 31	Work-order 32
Machine set up time (Hours)	10	20
Machine operation time {Hours}	90	180

Question 10

A Ltd. an Engineering Company having 25 different automatic machines furnished you the following data for 2016-17 in respect of machine '8'.

- | | |
|---|---------------|
| 1. Cost of the machine life 10 years | Rs. 50,000 |
| Scarp Value | NIL |
| 2. Overhead expenses are for the factory | |
| Factory Rent | 50,000 |
| Heating and Lighting | 40,000 |
| Supervision | 1,50,000 |
| Reserve equipment for | |
| Machine 'B' | 5,000 p.a. |
| Area of the factory | 80,000sq. ft. |
| Area occupied by the machine | 3,000 sq. ft. |
| Power cost 50 paise when in operation | |

3. Wages of operator is Rs. 24 per day of 8 hours including all benefits. He attends to one machine when it is being set up and two machines while under operations.

- | | |
|-------------------------------|------------------|
| 4. Estimated production hours | 3,600 p.a |
| Estimate set-up time | 400 p.a. (hours) |

Prepare schedule of machine-hour rate and find the cost of the following jobs:

	Job 1102	Job 1308
Set-up time (hrs.)	80	40
Operation time (hrs.)	130	160

Question 11

Gemini Enterprises undertakes three different jobs A, B and C. All of them require the use of a special machine & also the use of a computer. The computer is hired and the hire charges work out to Rs. 420000 per Annum the Expenses Regarding Machine are estimated as follows :-

Rent for the quarter	17,500
Depreciation per annum	2,00,000
Indirect charges per annum	150,000

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

Number of hours the machine was used:

You are required to compute machine hour rate:

(a) For the firm as a whole month when the computer was used when the computer was not used.

(b) For the individual jobs A, B and C.

<u>Job</u>	A	B	C
Number of hours the Machine was used:			
a) Without the use of computer		600	900 --
b) Without the use of computer	400	600	1,000

Question 12

The following is a schedule of expenses allocated to three machines A, B and C Viz.

	A	B	C
Rent and Rates	75	59	120
Insurance	2	1	4
Power	128	146	273
supervision	40	30	60
Organization (wages of clerks time-keeper, foreman etc.)	10	7	15
Store service	20	29	46
Tool setters	93	78	12
Tool makers	194	145	214
Oil and sundries	8	12	7
Depreciation and repairs	69	100	200
	639	607	951

In addition to this expenses, there was the expenses of operating an overhead crane, which was necessary to bring heavy materials to the machine. These expenses were as follows:

	Rs.
Power consumed by the Crane	227
Wages of Crane driver	216
Repairs	28
Depreciation	49
Oil and sundries	5
Sundry charges allocated to the crane	45
	570

The number of hours the machine were in use during the period represented by the above expenditure

Was as follows:

	A	B	C
With use of crane	160	130	480
Without use of crane	428	577	-
	588	707	480

Calculated machine-hour rate applicable to each machine, distinguishing between the hours when the crane was used and the hours in which it was not.

Question 13

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

Total cost of production Rs.	Volume of production (units)
14,600	800
19,400	1,200

What is the best estimate of the firm's fixed costs per period?

Question 14

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

	Rs.
Insurance charges for inventory (finished)	78,000
storage costs	1,40,000
Packing and forwarding charges	7,20,000
Salesman salaries	8,50,000
Invoice Cost	4, 50,000

Other details are:	Product A	Product B
Selling price per unit (Rs.)	500	1,000
Cost per unit (exclusive of indirect		
Selling & distribution costs) (Rs.)	300	600
Annual sales in units	10,000	8,000
Average inventory (units)	1,000	800
Number of Invoices	2,500	2,000

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

Required:

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

Question 15

A Ltd. manufactures two products A and B. The manufacturing division consists of two production departments P₁ and P₂ and two service departments S₁ and S₂.

Budgeted overhead rates are used in the production departments to absorb factory overheads to the products. The rate of Department P₁ is based on direct machine hours while the rate of Department P₂ is based on direct labour hours. In applying overheads the pre-determined rates are multiplied by actual hours.

For allocating the service department cost to production departments, the basis adopted is as follows :

- (i) Cost of Department S₁ to Department P₁ and P₂ equally, and
- (ii) Cost of Department S₂ to Department P₁ and P₂ in the ratio of 2 : 1 respectively.

The following budgeted and actual data are available:

Annual profit plan data:

Factory overheads budgeted for the year:

Departments		<u>Rs.</u>		<u>Rs.</u>
	P ₁	25, 50,000	S ₁	6, 00,000
	P ₂	21, 75,000	S ₂	4, 50,000

Budgeted output in units:

Product A- 50,000 Products B -30,000.

Budgeted raw-material cost per unit:

Product A- Rs. 120; Product B-Rs. 150.

Budgeted time required for production per unit:

Department P₁:
 Product A:1.5 machine hours
 Product B:1.0 machine hour

Department P₂:
 Product A: 2 Direct labour hours
 Product B:2.5 Direct labour hours

Average wage rates budgeted in Department P₂ are:

Department	Factory Overhead Rs.	Direct labour Hours	No. of Employees	Area in sq.m.
Production				
X	1,93,000	4,000	100	3,000
Y	64,000	3,000	125	1,500
Z	83,000	4,000	85	1,500
Service :				
P	45,000	1,000	10	500
Q	75,000	5,000	50	1,500
R	105,000	6,000	40	1,000
S	30,000	3,000	50	1,000

The overhead costs of the four service departments are distributed in the same order, viz., P, Q, R and S respectively on the following basis:

Department	Basis
P	Number of Employees
Q	Direct labour Hours
R	Area in square metres
S	Direct Labour Hours

You are required to:

- Prepare a schedule showing the distribution of overhead costs of the four service departments to the three production departments; and
- Calculate the overhead recovery rate per direct labour hour for each of the three production

Question 17

A factory comprises two production Departments and three service Departments. For the month of July, the direct department expenses were as follows:

Production Department	Service Department	
A - Rs. 85,000	Power House	Rs. 47,350
B - Rs. 70,000	Store	Rs. 15,000
	Repair	Rs. 60,500

The expenses of service departments are distributed on a percentage basis as under:

Power House: 25% to Repair Shop, 25% to Dept., A and 50% to Dept. B.

Store : 10% to Power, 20% to Repair Shop, 30% to Dept. A & 40% to Dept. B.

Repair shop: 20% to Power House, 30% to Dept. A and 50% to Dept. B

Prepare a statement showing the distribution of service department expenses to production departments using simultaneous equation method.

CHAPTER- 4**COST SHEET (UNIT COSTING)****Question 1**

A factory manufactures a uniform type of article and has a capacity of 4,000 units per week. The following information shows the different element of cost for three consecutive weeks when the output has changes every week.

Units Produced	Direct material (Rs.)	Direct labour (Rs.)	Factory overheads (Partly variable & Party fixed) (Rs.)
2,000	12,000	6,000	12,500
2,800	16,800	8,400	16,500
3,700	22,200	11,100	21,000

The factory has received an order for 5000 units and it desires a profit of 16-2/3% on selling price.

Find out the price at which each unit should be sold.

Question 2

A factory can produce 60,000 units per annum at its optimum (100%) capacity. The estimated costs of production are as under:

Direct materials-	Rs. 3 per units;
Direct labor-	Rs. 2 per unit.
Indirect expenses: Fixed-	Rs. 1, 50,000 p.a.
Variable-	Rs. 5 per unit,

Semi variable Rs. 50,000 per annum up to 50% capacity and extra expenses of Rs. 10,000 for every 25% increase in capacity or part thereof.

The factory produces only against orders (and not for own stock).

If the production programme of the factory is as indicated below and the management desires to ensure a profit of Rs. 1, 00,000 for the year, work out the average selling price of which each unit should be quoted:

First 3 months of the year: 50% of the capacity.

Remaining 9 months: 80% of the capacity.

Ignore selling, distribution and administration overhead.

Question 3

The comparative profit statement of two. Quarters of a firm are as under:

	Quarter I	Quarter II
Units sold	Rs. 2500	Rs. 3750
Direct materials	87,500	?
Direct Wages	62,500	?
Fixed and variable Factory overheads	75,000	95,000
Sales	2,75,000	?
Profit	50,000	66,250

In the second quarter, the direct material price has increased by 20%. There was a saving of Rs. 5,000 in fixed overheads in the second quarter. The other costs and selling price remained the same.

Determine the quantity that should have been sold in the second quarter to maintain the same amount of profit per unit as in the first quarter.

Question 4

The accounts of a company are expected to reveal a profit of Rs. 14,00,000 after charging fixed costs of Rs. 10,00,000 for the year ended 31st March, 2016. The selling price of the product is Rs. 50 per unit and variable cost per unit is Rs. 20.

Market investigations Alternatives	Suggest the following Selling Price reduced by	Responses to the price changes: Quantity Sold increased by
I	5%	10%
II	7%	20%
III	10%	25%

Evaluate these alternatives and state which of the alternatives, on profitability consideration should be adjusted for the forthcoming year

Question 5

The following is a summary of the trading result of a Company selling on electrical application for the year ended 31st December, 2016 during which 80,000 units were sold:-

	<u>Rs.</u>	<u>(Lakhs)</u>
Sales:	--	96
Costs:		
Material	36	--
labour:		
Direct	15	--
Indirect	6	--
Other costs	18	<u>75</u>
		<u>21</u>

Taking into consideration the following matters, prepare a summary of the expected results for the following year:-

- i. The selling price is to be reduced by Rs. 7.50
- ii. Sales volume is expected to increase by 40%
- iii. Suppliers have agreed to give a discount of 5 per cent on all purchases of materials.
- iv. Direct workmen are to be paid an incentive bonus of 2 percent in order to stimulate production. Indirect labour is not expected to increase during the following year.
- v. Other cost vary directly with production except to the extent of Rs. 3 lakhs which is considered 'fixed' and an additional expenses of Rs. 1lakh will arise due to rent in respective extension to the factory.
- vi. You are to assume that there is no stock or work-in-progress as at 31st December.

Question 6

Prepare an estimated cost sheet based on the following data and consider the price that you would quote for an export order of 25,000 PCS.

Raw material : 10,000 kgs. @ 6.95 per kg.
 Direct labour : 15,000 hours normal at Rs. 2.00 per hour 25%
 overtime at double the normal rate.

Factory overheads: Normally recovered at 80% of direct wages.

Selling and Distribution cost : Normally recovered at 60% of direct wages.

Additional fixed capital investment to be made Rs. 50,000.

Normal net Return on Capital Employed Expected 25%.

Increase in working capital : 20% of the sales value.

Question 7

PH Ltd. manufactures and sells two products, namely BXE and DXE. The co. investment in fixed capital is Rs. 2 lakhs. The working capital investment is equivalent to three months cost of sales of both the products. The fixed capital has been financed by term loan lending institutions at an Interest of 11% p.a. Half of the working capital is financed through bank borrowings carrying interest at the rate of 19.4% the other half of the working capital being generated through internal resources.

The operating data anticipated for 2016-17 are as under:

	<u>Product BXE</u>	<u>Product DXE</u>
Production per annum	5000	10,000
Direct materials/Unit		
Material A (price Rs. 4 per kg.)	1kg.	0.75 kg.
Material B (price Rs. 2 per kg.)	1kg.	1 kg.
Direct labour hours	5	3
Direct wages rate	Rs. 2 per hr.	Rs. 2 per hr.

Factory overheads are recovered at 50% of direct wages.

Admin. Overheads are recovered at 40% of factory cost.

Selling & Distribution expenses: Rs. 2 and Rs. 3 per unit respectively for BXE and DXE.

The company expects to earn an after tax net return of 12% on capital employed.

The Income tax Rate is 50%.

Required:

- (i) Prepare a cost sheet showing the element wise cost, total cost profit and selling price per unit of both the producers.
- (ii) Prepare a statement showing the net profit of the Co. after taxes for the year 2016-17.

CHAPTER- 5

JOB COSTING & BATCH COSTING

Question 1

A factory, which utilizes job costing system, makes available the following data for the year ending 31st March, 2016.

Direct Materials	Rs.90,000
Direct Wages	Rs.75,000
Profit	Rs.60,900
Selling & Dist. Overheads	Rs.52,500
Administration Overheads	Rs.42,000
Factory Overheads	Rs.45,000

a) Prepare a job cost sheet indicating the prime cost, works cost, production cost, cost of sales and sales value.

b) In 2016-17, the factory has received an order for a number of jobs. It is estimated that direct

Material required will be Rs. 1, 20,000 and direct labour will cost Rs. 75,000. What should be the price for these jobs if the factory intends to earn the same rate of profit on sales, assuming that selling and distribution overheads will go up by 15%? The factory recovers factory overheads as percentage of direct wages and Administration and selling overheads as a percentage of works cost, based on cost rates prevailing in the previous year.

Question 2

Mayur Engineering engaged in job work has completed all jobs in hand on 30th December, 2016 except job No. 447. The cost sheet on 31st December, showed direct materials and direct labour costs of Rs. 40,000 and Rs. 30,000 respectively, as having been incurred a job No. 447.

The costs incurred by the business on 31st Dec, 2016, the last day of the accounting year were:

Direct Materials (Job 447)	Rs. 2,000
Direct labour (job 447)	Rs. 8,000
Indirect labour	Rs. 2,000

Indirect Labour:

Waiting for Material	20	10
Machine Breakdown	10	5
Idle Time	5	6
Overtime Premium	6	5
	316	101

A shop credit slip was issued in October that material under requisition No. 54 was returned back to stores as being not suitable. A material Transfer Note issued in October indicated that material issued under requisition No. 55 for Job 118 was directed to Job 124.

The hourly rate in Shop A per labour hour is Rs. 3 per hour while at Shop B it is Rs. 2 per hour. The factory overhead is applied at the same rate as in September. Jobs 115, 118 and 120 were completed in October

You are asked to compute the factory cost of the completed jobs. It is the practice of the management to put 10% on the factory cost to cover administration and selling overheads and invoice the job to the customer on a total cost-plus 20% basis. What would be the invoice price of these three jobs?

Question 4

In an engineering company, the factory overheads are recovered on a fixed percentage basis on direct wages and the administrative overheads are absorbed on a fixed percentage basis on factory cost.

The company has furnished the following data relating to two jobs undertaken by it in a period:

	Job 101	Job 102
	Rs.	Rs.
Direct Materials	54,000	37,500
Direct Wages	42,000	30,000
Selling Price	1, 66,650	1, 28,250
Profit Percentage on Total Cost	10%	20%

Required:

(i) Computation of percentage recovery rates of factory overheads and administrative overheads.

(ii) Calculation of the amount of factory overheads, administrative overheads and profit for each of the two jobs.

(iii) Using the above recovery rates fix the selling price of job 103. The additional data being :

Direct Materials	Rs. 24,000
Direct Wages	Rs. 20,000
Profit Percentage on Selling Price	12.5%.

Question 5

In factory, the expenses of factory are charged on a fixed percentage basis of wages and office overhead expenses are calculated on the basis of percentage of works cost.

The following information is supplied.

	Order I	Order II
Material	12,500	18,000
Wages	10,000	14,000
Selling Price	42,900	61,880
% of profit on cost	10%	12%

Find out % for factory overhead and office overhead.

Question 6

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

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

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

Job No. CW 7803:

Department	Direct Materials Rs.	Direct Wages Rs.	Direct Labour Hours	Machine Hours
Machining	1,200	240	60	180
Assembly	600	360	120	30
Packing	300	60	40	--

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

Required:

- i. Calculate the overhead absorption rate as per the current policy of the company and determine the selling price of the Job No. CW 7803.
- ii. Suggest any suitable alternative method(s) of absorption of the factory overheads and calculate the overhead recovery rates based on the method(s) so recommended by you.
- iii. Determine the selling price of Job CW 7803 based on the overhead application rates calculated in above.
- iv. Calculate the department wise and total under or over recovery of overheads based on the company's current policy and the method(s) recommended by you.

CHAPTER- 6

PROCESS COSTING

Question 1

The product of a company passes through three distinct process to completion. From past experience, it is ascertained that normal wastage, in each process, is as under:

Process	Wastage	Sale value of wastage
A	2%	25 paise per unit
B	4%	50 paise per unit
C	2.50%	60 paise per unit

The expenses are as follows:

	<u>Process A</u>	<u>Process B</u>	<u>Process C</u>
Materials	12,000	10,000	9,000
Direct Labour	16,000	5,000	4,900
Manufacturing expts.	2,000	3,400	3,590
Other factory Exps.	3,500	2,005	2,004

4000 units were initially process A' at a cost of Rs.13,560. The output of each process was as under:

<u>Output</u>	<u>Process</u>
A	3,850
B	3,600
C	3,500

From the above information Show the Necessary Accounts.

Question 2

A product through two distinct processes A and B & thereafter, it is transferred to finished stock. Prepare process accounts from the following information:

	Process A	Process B
Material Consumed	Rs. 20,000	
No.of units input	10,000	
Direct labour	4,000	14,000
Manufacturing overheads	8,000	20,000
Output (units) .	8,500	8,000
Normal loss	10%	15%
Value of scrap	0.50	0.8

Question 3

A product passes through three process A, B & C 10,000, units at a cost of Rs.1 were issued to process A.

The other direct expenses were:

	Process A	Process B	Process C
Sundry Materials	1,000	1,500	1,480
Direct labour	5,000	8,000	6,500
Direct Expenses	1,050	1,188	1,605

The wastage of process A was 5% and process B 4%. The wastage of process A was sold at Re. 0.25 per unit and that of B at Re. 0.50 per unit and that of C at Re. 1 per unit. The overhead charges were 168% of direct labour. The final product was sold at Rs. 10 per unit, fetching a profit of 20% on sales.

Find the % of wastage in process C.

CHAPTER-7

PROCESS COSTING -CONCEPT OF EQUIVALENT PRODUCTION

Question 1

During a month 40,000 units were introduced into process A. The process cost was:

	<u>Rs.</u>
Direct Materials	3, 02,000
Direct Wages	2, 07,000
Factory overhead	50% of direct wages

The normal loss was estimated at 10% on input. At the end of the month, 32,000 units have been produced and transferred to process B. 5,000 units have been scrapped (scrapped units had been completely processed and realized Rs. 5/- per unit) and 3000 units were incomplete and the stage of completion in respect of these units was estimated to be :

Material	75%
Labour	50%
Overhead	50%

Find out (a) Equivalent production, (b) Cost per unit, (c) value of output to be transferred and show the necessary accounts.

Question 2

During a month 8,000 units were introduced into Process

1. The process costs for the month amounted to:

	<u>Rs.</u>
Direct Materials	76,000
Direct Labour	42,900
Production overhead other particulars were:	26,400
Normal Loss: 10% of input Units processed and Transferred to process 2	5,000
Units Scrapped (Completely processed)	600

2,400 units were incomplete and the stage of completion these units were estimated to be:

Materials	100%
Labour & Overheads	75%

Units scrapped have a realisable market value of Rs. 5.00 per unit.

Find out equivalent production average cost per unit & re-prepare the necessary accounts.

Question 3

Following information is available regarding process A for the month of February, 2016:

Production Record	
Units in process as on 1.2.2016 (All materials used, 25% complete for labour and overhead)	4,000
New units introduced	16,000
Units completed	14,000
Units in process as on 28-2-2016 (All materials used, $33\frac{1}{3}$ % complete for Labour and overhead)	6,000
Cost Records	
Work-in-process as on 1.2.2016	Rs.
Materials	6,000
Labour	1,000
Overhead	1,000
Cost during the month	
Materials	25,600
Overhead	15,000
Labour	15,000
	55,600

Presuming that average method of inventory is used, prepare:

- i. Statement of equivalent production
- ii. Statement showing cost for each element.
- iii. Statement of appointment of cost.
- iv. Process cost account for process A.

Question 4

From the following particulars extracted from the books of New Colour Ltd. for the month of FEB 2016 prepare

- (a) Statement of equivalent production,
- (b) Statement of apportionment of cost and
- (c) Process Account.

1. Opening Stock as on 1st March @ Rs. 4 per unit 200 units

Degree of completion:

Labour & Overhead 40 percent	Material 100 %
2. Introduced during March	1050 units
3. Transfer to next process	1100 units
4. Closing Stock as on 31st March	150 units
5. Degree of completion Material	100 percent
6. Labour & Overhead	70 percent.

Other relevant information regarding the Process Account is:

Material cost	3,150
labour cost	4,500
Production Overhead	2,250
Total	9,900

Question 5

Opening work-in-progress	2,000 units
Material (100% complete)	5,000
Labour (60% complete)	3,000
Overhead (60% complete)	<u>1,500</u>
	<u>9,500</u>

Units introduced into this process; 8,000

There are 2,000 units in process, and stage of completion is estimated to be :

Material	100%
Labour	50%
Overhead	50%

8,000 units are transferred to next process.

The process costs for the period are:

	<u>Rs.</u>
Material	95,000
labour	60,000
Overhead	30,000

Find the value of:

- a) Output transferred and
- b) Closing work-in-progress using average cost method.

Question 6

The following data pertains to process 1 for March 2016 of Beta limited:

Opening work in progress 1,500 units at Rs. 15,000

Degree of completion:-

Material 100% Labour and overheads 33 1/3%

Input of Materials 18,500 Units at Rs. 52,000

Direct Labour Rs. 14,000

Overheads Rs. 28,000

Closing Work in Progress 5000 units

Degree of Completion Materials 90%

& labour and Overheads 30%

Normal Process Loss is 10% of total input (opening work in progress units + units put in)

Scrap value Rs. 2.00 per unit.

Units transferred to the next process 15,000 units.

You are required to:-

- (a) Compute equivalent units of production.
- (b) Compute cost per equivalent unit for each cost element i.e. Materials, labour and overheads.

(c) Compute the cost of finished output and closing work in progress.

(d) Prepare the process and other accounts.

Assume

(i) FIFO Method is used by the company.

(ii) The cost of opening work in progress is fully transferred to the next.

Question 7

The following data are available in respect of process 1 for February, 2016:

1. Opening stock of work in process 800 units at a total cost of Rs. 4,000.
2. Degree of completion of opening work in process:

Materials	100%
Labour	80%
Overheads	80%

Input of materials at a total cost of Rs. 36,800 for 9,200 units.

3. Direct wages incurred Rs. 16,740.
4. Production overhead Rs. 8,370.
5. Units scrapped 1,200 units. The stage of completion of these units was:

Materials	100%
Labour	80 %
Overheads	80%

(7) Closing work in process 900 units. The stage of completion of these units was:

Materials	100%
Labour	60%
Overheads	60%

6. 7,900 units were completed and transferred to the next process.
7. Normal loss is 8% of the total input (opening stock plus units put in)
8. Scrap value is Rs. 4 per unit

You are required to:

- a) Compute equivalent production.

- b) Calculate the cost per equivalent unit for each element.
- c) Calculate the cost of abnormal loss (or gain), closing work in process and the units transferred to the next process using the FIFO method.
- d) Show the process Account for February, 2016.

Question 8

The following data relate to Process Q:

- 1 **Opening Work-in-process** 4,000 units
Degree of completion :

Materials	100%	Rs. 24,000
Labour	60%	Rs. 14,400
Overheads	60%	Rs. 7,200

- 2 **Received during the month of April, 2016 from Process P :**

40,000 units	Rs. 1,71,000
--------------	-----------------

- 3 **Expenses incurred in Process Q during the month :**

Materials	Rs. 79,000
Labour	Rs. 1,38,230
Overheads	Rs. 69,120

- 4 **Closing work-in-process** 3,000 units
Degree of completion :

Materials	100%
Labour and overheads	50%
- 5 **Units scrapped** 4,000 units
Degree of completion :

Materials	100%
Labour and overheads	80%
- 6 Normal loss: 5% current input.
- 7 Spoiled goods realized Rs. 1.50 each on sale.
- 8 Completed units are transferred to warehouse

Required:**Prepare:**

- 1 Equivalent units statement
Statement of cost per equivalent unit ar
- 2 costs.
- 3 Process Q Account
- 4 Any other account necessary.

CHAPTER- 8

CONTRACT COSTING

Question 1

A contractor commenced the work on a particular contract on 1.3.2016. He usually closed his books of accounts for the year on 31st Dec. each on which day the following data is available:-

	<u>Rs.</u>
Materials sent to site	43,000
Foreman's charges	12,620
Labour	1, 00,220

A machine costing Rs. 30,000 remained in use on site for 1/5th of the year. Its working life was estimated at 5 years and scrap value is Rs. 2,000/-. A supervisor is paid Rs. 2, 000/- per month and hand devoted one half of his time on the contract.

All other expenses were Rs.14, 000/- the materials on site were of Rs. 2,500/-. The contract price was

Rs. 4, 00,000/- on 31.12.2016, 2/3 of the contract was completed, however, the architect certified only Rs. 2, 00,000 of which 90% was cash received. Prepare the Contract Account.

Question 2

A firm of contractors obtained a contract build a house for Rs. 6,00,000/-.

The work commenced on 1st April, 2015, and the following expenditure was incurred during the year ended 31st March, 2016.

	<u>Rs.</u>
Plants and Tools	20,000
Stores and Materials	80,000
Wages	80,000
Sundry Expenses	7,000
Establishment charges	18,000

Some of the materials were found in excess and was, ultimately sold for Rs. 17,000 while their cost price was Rs. 14,000 portion of the plant was scrapped and sold as scrap for Rs. 5,000.

The value of the plant and tools on site on 31st March 2016 was Rs. 8,000/- and the value of the stores and materials site was Rs. 5,000/-.

90% of the work done was certified for Rs. 3, 20,000 which 80% was received in cash. Prepare contract account for the year ended on 31st March, 2016.

Question 3

The Hindustan Construction Co. Ltd. undertook a contract for Rs. 4, 00,000 on 1st July, 2016.

The following expenses were incurred up to 31st December, 2016:-

	<u>Rs.</u>
Materials issued from Stores	35,000
Materials charged direct	5,000
Direct Charges	2,000
Wages	20,000

The amount of work certified was Rs.80, 000 of which the contractors received 75% cash.

The transaction for the year 2017 was as follows:-

Materials issued from stores	90,000
Wages	40,000
Direct charges	4,000

The cost of a special Plant and Machinery issued on 1st January, 2017 for the contract was Rs.80, 000.

Further work certified during the year amounted to Rs. 2, 00,000, 75% of which was received for in cash. Work done not certified as on 31st December, 2017 was valued at Rs. 15,000/-. Special plant is to be depreciated at 25% per annum on the original cost.

Materials on site valued at Rs. 10,000.

The contract was completed on 30th April, 2018 upto which date the following further expenses were incurred:-

	<u>Rs.</u>
Materials issued from stores	40,000
Materials charged	7,000
Direct Direct Charges	1,350
Wages	15,000

The General exp. each year is to be taken at 5% of the amount of materials consumed and wages paid during the year. On 30th April, 2018 the plant was value at Rs. 50,000. The materials at site were sold for Rs. 7,000 and those returned to stores amounted to Rs. 13,000.

Prepare contract accounts for 2016, 2017 and 2018.

Question 4

Deluxe Limited undertook a contract for Rs. 5, 00,000 on 30st June, 2016 when the accounts were enclosed the following details about the contract was gathered:

	<u>Rs.</u>
Materials Purchased	1,00,000
Wages paid	45,000
General Expenses	10,000
Plant purchased	50,000
Material on Hand 30.6.2005	25,000
Wages Accrued 30.6.2005	5,000
Work Certified	2,00,000
Cash Received	1,50,000
Work Uncertified	15,000
Dep. of plant	5,000

The above contract contained an escalator clause which read as follows:-

"In the event of prices of materials and rates of wages increased by more than 5% the contract price would be increased accordingly by 25% of the rise in the case of materials and wages beyond 5% in each case".

It was found that since the date of signing the agreement the prices of materials and wage rates increased by 25%. The value of the work certified does not take into account the effect of the above clause. Prepare the contract account. Workings should form part of the answer.

Question 5

A Contractor commenced a building contract on October 1, 2016. The price is Rs. 4, 40,000. The following data pertaining to the contract for the year 2017-18 has been compiled from his books and is as under:

April1, 2017		<u>Rs.</u>
	Work-in-progress not certified	55,000
2017-18	Materials at site	2000
	Expenses incurred:	
	Material issued	1,12,000
	Wages paid	1,08,000
	Hire of plant	20,000
31-03-18	Other expenses	34,000
	Material at site	4,000
	Work-in-progress: Not certified	8,000
	Work-in-progress: Certified	4,05,000

The cash received represents 80% of work certified. It has been estimated that further costs to complete the contract will be Rs.23, 000 including the materials at site as on March 31, 2018.

Required:

Determine the profit on the contract for the year 2017-18 on prudent basis, which has to be credited to P/L A/c.

Question 6

MNP Construction Ltd. commenced a contract on April 1, 2016. The total contract was for Rs. 17, 50,000. It was decided to estimate the total profit and to take to the credit of P/L A/c. The proportion of estimated profit on cash basis, which work completed bore to the total contract. Actual expenditure in 2016-17 and estimated expenditure in 2017-18 are given below:

		<u>2016-17</u> <u>(Actuals)</u> <u>Rs.</u>	<u>2017-18</u> <u>(Estimated)</u> <u>Rs.</u>
Material issued		3,00,000	5,50,000
labour	Paid	2,00,000	2,50,000
	Outstanding at end	20,000	30,000
Plant purchased		1,50,000	--
Expenses	: Paid	75,000	1,50,000
	: Prepaid at end	15,000	
Plant returned to store (historical cost)		50,000	1,00,000
		(on Dec.31, 2017)	
Material at site		20,000	50,000
Work certified		8,00,000	Full

Work uncertified	25,000	--
Cash received	6,00,000	Full

The plant is subject to annual depreciation @25% of WDV Cost. The contract is likely to be completed on Dec. 31, 2017. Prepare the Contract A/c. Determine the profit on the contract for the year 2016-17 on prudent basis, which has to be credited to P/L A/c.

Question 7

Brock Construction Ltd. commenced a contract on November 1, 2017. The total contract was for Rs. 39, 37,500. It was decided to estimate the total profit on the contract and to take to the credit of P/L A/c that proportion of estimated profit on cash basis, which work completed bore to the total contract. Annual expenditure for the period November 1, 2017 to October 31, 2018 and estimated expenditure for November 1, 2018 to March 31, 2019 are given below:

	11/1/2017 to 31/10/2018 (Actuals) <u>Rs.</u>	11/1/2018 to 31/3/2019 (Estimated) <u>Rs.</u>
Materials issued	6,75,000	12,37,500
Labour :Paid	4,50,000	5,62,500
Prepaid	25,000	
Outstanding	--	2,500
Plant purchased	3,75,000	--
Expenses: Paid	2,00,000	3,50,000
Outstanding	50,000	25,000
Plant return to store (historical cost)	75,000 (on March 31, 2018)	3,00,000 (on March, 2019)
Work certified	20,00,000	Full
Work uncertified	75,000	--
Cash received	17,50,000	--
Material at site	75,000	37,500

The plant is subject to annual depreciation @33 1/3% on written down value method. The contract is likely to be completed on March 31, 2019.

Required:

Prepare the contract A/c. Determine the profit on the contract for the year November, 2017 to October, 2018 on prudent basis, which has to be credited to P/L A/C.

Question 8

A construction company undertook a contract at an estimated price of Rs. 108 lacs, which includes a budgeted profit of Rs. 18 lacs. The relevant data for the year ended 31.3.2017 are as under:

Materials issued to site	5.000
Direct wages paid	3.800
Plant hired	700
Site office costs	270
Materials returned from site	100
Direct expenses	500
Work certified	10.000
Proaress pavyment received	7.200

A special plant was purchased specifically for this contract at Rs. 8, 00,000 and after use on this contract till the end of 31.3.2017; it was valued at Rs. 5, 00,000. The cost of materials at site at the end of the year was estimated at Rs.18, 00,000. Direct wages accrued as on 31.3.2017 was Rs. 1, 10,000.

Required:

Prepare the Contract Account for the year ended 31.3.2017 and compute the profit to be taken to the Profit and loss Account.

Question 9

Paramount Engineers are engaged in construction and erection of a bridge under a long-term contract. The cost incurred up to 31.3.2017 was as under:

Fabrication	Rs. in lakhs
Direct Materials	280
Direct Labour	100
Overheads	<u>60</u>
	440
Erection cost to date	<u>110</u>
	550

The contract price is Rs. 11 crores and the cash received on account till 31.3.2017 was Rs. 6 crores.

A technical estimate of the contract indicates the following degree of completion of work:

Fabrication -Direct Material- 70 Direct Labour and Overheads 60%, Erection-40%.

You are required to estimate the profit that could be taken to profit and loss account against this partly completed contract as at 31.3.2017.

Question 10

Compute a conservative estimate of profit on a contract (which has been 80% complete) from the following particulars. Illustrate four methods of computing the profit:

Total expenditure to date

Estimated further expenditure to complete 1, 70,000

The contract (including contingencies)

34,000

Contract Price 3, 06,000

Work Certified 2, 00,000

Work Not Certified 17,000

Cash Received 1, 63,200

CHAPTER- 9**OPERATING COSTING****Question 1**

A transport service company is running five buses between two towns which are 50 kms. apart. Seating capacity of each bus is 50 passengers. The following particulars were obtained from their books for April, 2016.

Wages of drivers, conductors & cleaners	24,000
Salaries of office staff	10,000
Diesel oil and other oil	35,000
Repairs and maintenance	8,000
Taxation, insurance etc.	16,000
Depreciation	26,000
Interest and other expenses	<u>20,000</u>
	<u>1, 39,000</u>

Actually, passengers carried were 75 percent of seating capacity. All buses ran of all days of the month. Each bus made one round trip per day.

Find out the cost per passenger km.

Question 2

Mr. X owns a bus which runs according to the following schedule:

- Delhi to Chandigarh and back, the same day.
Distance covered: 150 kms.one way.
Number of days runs each month 8
Seating capacities occupied 90%
- Delhi to Agra and back, the same day.
Distance covered: 120 kms one way.
Number of days runs each month: 10
Seating capacity occupied 85%
- Distance covered: 270 kms. One way.
Number of days runs each month: 6
Seating capacity occupied 100%

4. Following are the other details :

Cost of the bus	Rs.6, 00,000
Salary of the driver	Rs. 2,800 p.m.
Salary of the Conductor	Rs. 2,200 p.m.
Salary of the part-time accountant	Rs. 200 p.m
Insurance of the bus	Rs. 4,800 p.a.
Diesel consumption	4 kms
per litre at	Rs. 6 per litre
Road tax	Rs. 1,500 p.a.
Lubricant oil	Rs. 10 per 100 kms.
Permit fee	Rs. 315 p.m.
Repairs & maintenance	Rs. 1,000 p.m.
Depreciation of the bus	@20% p.a.
Seating capacity of the bus	50 persons.

Passenger tax is 20% of the total takings.

Calculate the bus fare to be charged from each passenger to earn a profit of 30% on total takings. The fares are to be indicated per passenger for the journeys:

1. Delhi to Chandigarh
2. Delhi to Agra
3. Delhi to Jaipur.

Question 3

Janta Transport Co. has been given a route 20 kms. Long for running buses. The company has a fleet of 10 buses, each costing Rs. 50,000 and having a life of 5 years without any scrap value.

From the following estimated expenditure and ther details calculate the bus fare to be charged from each passenger:-

Insurance charges	3% per annum
Annual tax	Rs.1,000 per bus
Total garages charges	Rs.1,000 per month
Annual repairs	Rs.1,000 per bus
Driver's salary	Rs.150 per month per bus

Conductor's salary	Rs.100 per month per bus
Commission to be shared equally between driver & conductor	10% of the takings
Cost of the stationery	Rs. 500 per month
Manager's salary	Rs. 2,000 per month
Accountant's salary	Rs.1,500 per month
Petrol and oil	Rs. 25 per 100 kms.

Each bus will make 3 round trips carrying on an average 40 passengers on each trip. The bus will run on an average 25 days a month.

Assuming 15% profit on takings, calculate the bus fare to be charged from each passenger.

Question 4

Mr. Jaika owns a fleet of taxies and the following information was available from the records maintained by him:-

1. Number of taxies	10
2. Cost of each taxi	Rs.20,000
3. Salary of manager	Rs.600
4. Salary of accountant	Rs.500
5. Salary of cleaner	Rs.200
6. Salary of mechanic	Rs.400
7. Garage Rent	Rs.600
8. Insurance premium	5% PM
9. Annual Tax	Rs.600
10. Driver's Salary	Rs.200 Per Taxi p.m
11. Annual Repairs	Rs.1000 Per p.m

Total life of a taxi about Rs. 2, 00, 000 kms. A taxi runs, in all 3,000 kms.in a month of which it is empty 30% of the time. Petrol consumption is one litre for 10 Kms. @ Rs. 1.80 per litre. Oil and other sundries are Rs. 5 per 100 kms from the above information find out the effective cost per km.

Question 5

Shanker has been promised a contract to run a tourist car on a 20 kms. Long route for the chief executive of a multinational firm. He buys a car costing Rs. 1, 50,000. The annual cost of insurance and taxes are Rs. 4,500 and 900

respectively. He has to pay Rs. 500 per month for a garage, where he keeps the car when it is not in use. The annual costs are estimated at Rs. 4,000/-. The car is estimated to have a life of 10 years, at the end of which the scrap value is like to be Rs. 50,000.

He hires a driver who is to be paid Rs. 300 per month plus 10% of takings as commission. Other incidental expenses are estimated at Rs. 200 per month.

Petrol and oil will cost Rs. 10 per km. The car will make 4 round trips each day. Assuming that a profit of 15% on taking is desired and that the car will be on the road for 25 days on an average per month, what should be the charge per round trip?

Question 6

SMC is a public school having 5 buses each plying in different directions for the transport of its school students. In view of a large number of students availing of the buses, the buses work 2 shifts daily both in the morning and in the afternoon, the buses are garaged in the school. The work load of the buses has been so arranged that in the morning the first trip picks up the senior students and the second trip plying an hour later picks up the junior students and similarly in the afternoon the first trip drops junior students and an hour later the second trip takes the senior students home.

The distance travelled by each bus one way is 8 kms. The school works 25 days in a month and remains closed for vacation in May, June & December. Bus fee is payable for all 12 months.

The details of expenses are as under:-

Cost of the one Bus	Rs. 1, 50,000 (Life 12 Years)
Driver's salary.	Rs. 450 p.m. per driver
Cleaner's salary	Rs. 350 p.m.
Salary payable for all 12 months	
One cleaner employed for all 5 buses	
License fees, taxes etc	Rs. 860 per bus p.a
Insurance.	Rs. 1,000 per bus p.a.
Scrap value	Rs. 30,000 each
Diesel cost	Rs. 2 per litre
Kms. per litre	4
Repairers Manintaience	Rs. 3500 Per Bus P.a

Seating capacity of each bus is 50 students. The seating capacity is fully occupied during the whole year. Students picked up and dropped within the range of 4 kms. of distance from school are charged half fare and 50% of the students are in this category. Ignore interest. Since the charges are based on average costs, you are required to:-

- i) Prepare a statement showing the expenses of operating a single bus and the fleet of 5 buses for a year.
- ii) Work out the average cost per student in respect of per month.
 - a) Students falling within the range of 4 kms. from school,
 - b) Students falling outside the above range.

Question 7

EPS is a Public School having 25 buses each plying in different directions for the transport of its school students. In view of large number of students availing of the bus service, the buses work two shifts daily both in the morning and in the afternoon. The buses are garaged in the school. The workload of the students has been so arranged that in the morning the first trip picks up senior students and second trip plying an hour later picks up junior students. Similarly, in the afternoon, the first trip takes the junior students and an hour later the second trip takes the senior students home. The distance travelled by each bus, one way is 16 kms. The school works 24 days in a month and remains closed for vacation in May and June. The bus fee however, is payable by the students for all the 12 months in a year.

The details of expenses for the year 2016-17 are as under:

Driver's salary- payable for all the 12 months	Rs. 5,000 per month per driver
Cleaner's salary payable for all the 12 months (One cleaner has been employed for every 5 buses)	Rs. 3,000 per month per cleaner
Licence Fees, Taxes etc	Rs. 2,300 per bus per annum
Insurance Premium	Rs. 15,600 per bus per annum
Repairs and Maintenance	Rs. 16,400 per bus per annum
Purchase price of the bus	Rs. 16, 50,000 each
Life of the bus	16 years
Scarp value	Rs. 1, 50,000
Diesel Cost	Rs.18.50 per litre

Each bus gives an average of 10 kms per litre of diesel. The seating capacity of each bus is 60 students. The acting capacity is fully occupied during the whole year.

Students picked up & dropped within the range of distance from the School	Bus Fee	Percentage of Students Available this facility
4 kms	25% of Full	15%
8 kms	50% of Full	30%
16 kms	Full	55%

Ignore interest. Since the bus fees has to be based on average cost, you are required to :

- (i) Prepare a statement showing the expenses of operating a single bus and the fleet of 25 buses for a year
- (ii) Work out average cost per student per month in respect of:
 - a) Students coming from a distance of upto 4 kms from the School;
 - b) Students coming from a distance of upto 8 kms from the School, and
 - c) Students coming from a distance of upto 16 kms from the School.

Question 8

A lorry starts with a load of 20 tonnes of goods from station A. It unloads 8 tonnes at station B and rest of goods at station C. It reaches back directly to station A after getting reloaded with 16 tonnes of goods at Station C. The distance between A to B, B to C and then from C to A are 80 kms., 120 kms and 160 kms respectively. Compute 'Absolute tonnes-kms' and 'Commercial tonnes-kms'.

Question 9

Global Transport Ltd. charges Rs .90 per ton for its 6 ton truck lorry load from city 'A' to city 'B'. The charges for the return journey are Rs. 84 per ton. No concession or reduction in these rates is made for any delivery of goods at intermediate station 'C'. In January, 2016 the truck made 12 outward journeys for city 'B' with full load out of which 2 tons were unloaded twice in the way at city 'C'. The truck carried a load of 8 tons in its return journey for 5 times but once caught by police and Rs. 1,200 was paid as fine. For the remaining trips the truck carried full load out of which all the goods on load were unloaded once at city 'C'.

The distance from city 'A' to city 'C' and city 'B' are 140 kms. & 300 kms. Respectively.

Annual fixed costs and maintenance charges are Rs. 60,000 and Rs. 12,000 respectively. Running charges spent during January, 2016 are Rs. 2,944.

You are required to find out the cost per absolute ton-kilo-metre and the profit for January, 2016.

Question 10

Maharaja Hotel has three types of suites for its customer's viz. single room, double room and three rooms respectively. State the rent to be charged for each type of suite on the basis of the following data:-

i. The number of suites of each type is:-

- a) Three-room suites 20
- b) Double room suites 30
- c) Single-room suites 100

ii. The occupancy of each type of suite is as follows:-

	Summer	winter
a) 3 room suites	60%	20%
b) 2 room suites	80%	20%
c) 1 room suites	90%	50%

iii. The annual expenses are as follows:-

a) Staff salaries Rs. 2, 20,000

b) Room attendant's wages when occupied:

	Summer	winter
	Rs.	Rs.
a) 3 room suites	4	6
b) 2 room suites	3	4.50
c) 1 room suites	2	3

c) **Lighting heating and power for full month when occupied both for summer and winter**

	Lighting	Power
	Rs.	Rs.
a) 3 room suites	80	40
b) 2 room suites	60	30
c) 1 room suites	40	20

	Rs.
d) Repairs and renovation 42,000	
Linen etc.	45,000
Interior Decoration	50,000
Sundries	31,550

e) Depreciation:

Building @5% on	Rs. 14,00,000
Furniture & fixture @ 10% on	Rs. 1,00,000
Air conditioner @ 10% on	Rs. 2,00,000

- (i) Summer may be assumed for 7 months and winter to be 5 months in a year; A month may be taken as 30 days.
- (ii) Profit including interest on investment @ 25% on cost.
- (iii) The rent of the double-room suites is to be fixed $1\frac{1}{2}$ times the single-room suites and that of 3 room suites as twice the single room suite.

Question 11

Public Health Centre runs an Intensive Medical care unit. For this purpose, it has hired a building at a rent of Rs. 5,000 per month with the understanding that it would bear the repairs and maintenance charges also. The unit consists of 25 beds and 5 more beds can be comfortably accommodated when the occasion demands. The permanent staff attached to the unit is as follows:

2 supervisors each at salary of Rs. 500/- per month

4 nurses each at salary of Rs. 300/- per month

2 ward boys, each at salary of Rs.150/- pre month.

Though the unit was open for the patients all the 365 days in a year. Scrutiny of accounts in 2016 revealed that only for 120 days in the year, the unit had the full capacity of 25 patients per day and for another 80 days, it had on an average 20 beds only occupied per day. But there were occasions when the beds

were full, extra beds were hired at a charge of Rs: 5/- per bed per day and this did not come to more than 5 beds extra then the normal capacity on any one day. The total hire charged for extra beds incurred for the whole year amount to Rs. 2,000.

The unit engaged expert doctors from outside to attend on the patients and the fees were paid on the basis of the number of patients. Attended and time spent by them and on an average it worked out to Rs. 10,000 per month in 2016."

The other expenses for the year were as under:-

	Rs.
Repair & Maintenance	3,600
Food Supplied to patients	44,000
janitor and other services for them	12,500
laundry charges for their bed linen	28,000
medicine supplied	35,000
cost of oxygen , X Ray etc. other than Directly borne for treatment of patients	54,000
General administration charges allocated to the unit	49,500

i. if unit recovered an overall amount of Rs.100/- per day on an average from each patient, what is the profit per patient per day made by the unit in 2016.

ii. The unit wants to work on a budget for 2017, but the number of patient requiring intensive medical is very uncertain Factor assuming that same revenue and expenses will prevail in 2017, in the first instance, work out the number of patient days required by the unit to breakeven.

CHAPTER- 10

JOINT PRODUCTS & BY PRODUCTS

Question 1

A factory is engaged in the production of a chemical BOMEX and in the course of its manufacture, a by- Product BRUCIL is produced, which after further processing has a commercial value. For the month of April 2016, the following are the summarised cost data:-

	Joint Expenses <u>Rs.</u>	Separate BOMEX <u>Rs.</u>	Expenses BRUCIL <u>Rs.</u>
Materials	1 00 000	6 000	4 000
labour	50 000	20 000	18 000
Overheads	30 000	10 000	6 000
Selling Price per unit		98	34
Estimated profit per unit on sale of BRUCIL			4
No. of units produced		Units 2,000	Units 2,000

The factory uses reverse cost method of accounting for by-products whereby the sales value of by-products after deduction of the estimated profit, post separation costs and selling and distribution expenses relating to the by-products is credited to the joint process cost account.

You are required to prepare statements showing:

- (i) The joint cost allocate to BOMEX.
- (ii) The product-wise and overall profitability of the factory for April 2016.

Question 2

XV Ltd. manufactures three products- A, B and C. The actual joint expenses of manufacture for a period were 8,000. It was estimated that the profit on each product as a percentage of sales would be 30%, 25% and 15% respectively. Subsequent expenses were as follows:

	A	B	C
Material	100	75	25
Direct Wages	200	125	50
Overheads	150	125	75

	450	325	150
Sales were	6000	4000	2400

Prepare statement showing the apportionment of re-joint expenses of manufacture over different products.

Question 3

In the course of manufacture of the main product 'P' by-products 'A' and 'B' also emerge. The joint

Expenses of manufacture amount to Rs. 1, 19,550. All the three products are processed further after separation and sold as per details given below :

Main product	'P'	'A'	By-products 'B'
Sales	Rs. 90,000	60,000	40,000
costs incurred after Separation	Rs. 6,000	5,000	4,000
Profit as percentage on sales	25	20	15

Total fixed selling expenses are 10% of total cost of sales which apportioned to the three products in the ratio of 20:40:40.

(i) Prepare a statement showing the apportion of joints cost to the main-products and the two by- Products.

(ii) If the by-product 'A' is not subjected to further processing and is sold at the points of separation, for which there is a market at Rs. 58,500 without incurring any selling expenses, would you advise its disposal at this stage ?

Show the workings.

Question 4

Pre-separation costs:	
Material	Rs. 10,000
Wages	Rs. 5,000
Production O.H.	Rs. 5,000
Production:	
Product X	1000 units
Product Y	6000 units
Product Z	4000 units

Apportion the joint costs to the products if the value assigned for X, Y and Z are Rs. 8, Rs. 5 and Rs. 3 per unit respectively.

Question 5

A company's plant processes 1, 50,000 kgs of raw material in a month to produce two products viz., 'P' and 'Q' The cost of raw material is Rs. 12 per kg. The process costs per month are:

	Rs.
Direct Materials	90,000
Direct Wages	1,20,000
Variable Overheads	1,00,000
Fixed Overheads	1,00,000

The loss in process is 5% of input and the output ration of P and Q which emerge simultaneously is 1:2. The selling prices of the two products at the point of split off are: P Rs. 12. per kg. and Q Rs. 20 per kg. A proposal is available to process P further by mixing it with other purchased materials. The entire current output of the plant can be so processed further to obtain a new product 'S'. The price per kg. of S is Rs. 15 and each kg. of output of S will require one kilogram of input P. The cost of processing of P into S (including other materials) is Rs. 1, 85,000 per month.

You are required to prepare a statement showing the monthly profitability based both on the existing manufacturing operations and on further processing.

Will you recommend further processing?

Question 6

The Sunshine Oil Company purchases crude vegetable oil. It does refining. Of the same. The refining process results in four products at the split off point: M.N.Q and P. Product O is fully processed at the split off point. Product M.N. and P can be individually further refined into 'Super M', 'Super N' and 'Super P'. In the most recent month (October, 2016), the output at split off point was:

Product M	3,00,000	gallons
Product N	1,00,000	gallons

Product O	50,000	gallons
Product P	50,000	gallons

The joint cost of purchasing the crude vegetable oil and processing it were Rs. 40,00,000.

Sunshine had no beginning or ending inventories. Sales of Product O in October were Rs.20,00,000. Total output of products M, N and P was further refined and then sold. Data related to October, 2016 are as follows:

	Further Processing Cost to Make Super Products	Sales
Super M'	Rs. 80,00,000	Rs. 1,20,00,000
Super N'	Rs. 32,00,000	Rs. 40,00,000
Super P'	Rs. 36,00,000	Rs. 48,00,000

Sunshine had the option of selling products M, N and P at the split off point. This alternative would have yielded the following sales for the October, 2016 production:

Product M	Rs. 20,00,000
Product N	Rs. 12,00,000
Product P	Rs. 28,00,000

Question 7

A chemical manufacturing company, three products A, B and C emerge at a single split off stage in department P. Product A is further processed in department Q product B in department R and product C in department S. There is no loss in further Processing of any of the three products. The cost data for a month are as under:

	Rs.
Cost of raw materials introduced in department P	12,68,800
Direct Wages department	
p	3,84,000
Q	96,000
R	64,000
s	36,000

Factory overheads of Rs. 4,64,000 are to be apportioned to the departments on direct wages basis.

During the month under reference, the company sold all three products after processing them further as under:

You are required to answer:

i. How the joint cost of Rs. 40, 00,00 would be allocated between each product under each of the following method

- (a) Sales value at split off;
- (b) Physical output (gallon); and
- (c) Estimated net realizable Value?

ii. Could Sunshine have increased in October, 2016 operating profit by making different Decisions about the further refining of product M, N, or P? Show the effect of any change you recommend on operating profits.

Question 8

Application of closing stock in joint product & by-product. A company processes a raw material in its Department 1 to produce three products, viz. A, B and X at the same split-off stage. During a period

1,80,000 kgs of raw materials were processed in department I at a total cost of Rs. 12,88,000 and the resultant output of A, B and X were 18,000 kgs, 10,000 kgs and 54,000 kgs respectively. and B were further processed in Department 2 at a cost of Rs. 1,80,000 and Rs. 1,50,000 respectively.

X was further processed in Department 3 at a cost of Rs. 1, 08,000. There is no waste in further processing.

The details of sales affected during the period were as under:

	A	B	X
Quantity Sold (kgs.)	17,000	5,000	44,000
Sales Value	12,24,000	2,50,000	7,92,000

There were no opening stocks. If these products were sold at split-off stage, the selling prices of A, B and X would have been Rs. 50, Rs. 40 and Rs. 10 per kg respectively.

Required:

- (i) Prepare a statement showing the apportionment of joint costs to A, B and X.
- (ii) Present a statement showing the cost per kg of each product indicating joint cost, further processing cost and total cost separately.

- (iii) Prepare a statement showing the product-wise and total profit for the period.
- (iv) State with supporting calculations as to whether any or all the products should be further processed or not.

Question 9

Inorganic Chemicals purchases salt and processes it into more-refined products such as caustic soda, chlorine and PVC (Polyvinyl chloride). During the month of April, 2016, Inorganic Chemicals purchased salt for Rs. 10, 00,000. Conversion cost of Rs. 15, 00,000 were incurred up to the split-off point, at which time two saleable products were produced: Caustic Soda and Chlorine. Chlorine can be further processed into PVC. The April production and sales information are as follows:

	Production	Sales	Sales Price Per Ton
Caustic Soda	1,200 tons	1,200 tons	Rs. 1,250
Chlorine	800 tons		
PVC	500 tons	500 tons	Rs. 5,000

All 800 tons of chlorine were further processed, at an incremental cost of Rs. 5, 00,000 to yield 500 tons of PVC. There were no by-products or scrap from this further processing of chlorine. There was no beginning trending inventories of caustic soda, chlorine or PVC in April.

There is an active market for chlorine. Inorganic Chemicals could have sold all its April production of Chlorine at Rs.1,875 a ton.

Required:

- i) Calculate, how the joint costs of Rs. 25,00,000 would be allocated between Caustic soda and Chlorine under each of the following methods:
- (1) Sales value at split off;
 - (2) Physical measure (tons); and
 - (3) Estimated net realizable value.
- ii) What is the gross margin percentage of Caustic soda and PVC under the three methods cited in requirement (i)
- iii) Lifetime Swimming Pool Products offer to purchase 800 tons of Chlorine in May, 2016 at Rs. 1,875 a ton. This sale would mean that no PVC would be produced in May. How would accepting the offer affect May Operating Income?

CHAPTER- 11
COST CONTROL ACCOUNTS

(INTEGRATED & NON-INTEGRATED ACCOUNTS)

Question 1

Pass journal entries in the cost books, maintained on non-integrated system for the following:

- | | | |
|-------------------------------------|---|-------------|
| (i) Issue of materials | Direct Rs. 5,50,000; Indirect Rs.1,50,000 | |
| (ii) Allocation of wages | Direct Rs. 2,00,000; Indirect Rs. 40,000 | |
| (iii) Under/over absorbed overheads | Factory (over} | Rs. 20,000; |
| (iv) Administration (under} | | Rs.10,000 |

Question 2

Journalise the following transactions assuming that cost and financial transactions are integrated:

	Rs.
Raw materials purchased	2,00,000
Direct materials issued to production	1,50,000
Wages paid (30% indirect)	1,20,000
Wages charged to production	84,000
Manufacturing expenses incurred	84,000
Manufacturing overhead charged to production	92,000
Selling and distribution costs	20,000
Finished products (at cost)	2,00,000
Sales	2,90,000
Closing stock	Nil
Receipts from debtors	69,000
Payments to creditors	1,10,000

Question 3

Dutta Enterprises operates an integral system of accounting. You are required to pass the journal Entries for the following transactions that took place for the year ended 30th June, 2016.

(Narrations are not required)

Raw materials purchased (50% on Credit) 6,00,000

materials issued to production	4,00,000
Wages paid (50% indirect)	2,00,000
Wages charged to production	1,00,000
Factory overheads incurred	80,000
Factory overhead charged to production	1,00,000
Selling and distribution overheads incurred	40,000
Finished products (at cost)	5,00,000
Sales (50% Credit)	7,50,000
Closing stock	Nil
Receipts from debtors	2,00,000
Payments to creditors	69,000

Question 4

On 31st March, 2016 the following balances were extracted from the books of the SUPREME MANUFACTURING COMPANY:-

	Dr.	Cr.
	Rs.	Rs.
Stores Ledger Control A/c.	35,000	
Work in Progress Control A/c.	38,000	
Finished Goods Control A/c.	25,000	
Cost Ledger Control A/c.		98,000
	<u>98,000</u>	<u>98,000</u>

The following transactions took place in April, 2016 :

Raw Materials :	<u>Rs.</u>
Purchased	95,000
Returned to suppliers	3,000
Issued to production	98,000
Returned to stores	3,000
Productive wages	40,000
Indirect labour	25,000
Factory overhead expenses incurred	50,000
Selling and Administrative expenses	40,000
Cost of finished goods transferred to warehouse	2,13,000
Cost of Goods sold	2,10,000
Sales	3,00,000

Factory overheads are applied to production at 150% of direct wages, any under absorbed overhead being carried forward for adjustment in the subsequent months. All administrative and selling expenses are treated as period costs and charged off to the Profit and Loss Account of the month in which they are incurred.

- a) Show the following Accounts:-
- b) Cost Ledger Control A/c.
- c) Stores Ledger Control A/c.
- d) Work in Progress Control A/c.
- e) Finished Goods Stock Control A/c;
- f) Factory Overhead Control A/c.
- g) Costing Profit and loss A/c.
- h) Trial Balance as at 30th April, 2016.

Question 5

In the absence of the Chief Accountant, you have been asked to prepare a month's cost accounts for a Company which operates a batch costing system fully integrated with the financial accounts.

The following relevant information is provided to you:

	<u>Rs.</u>	
Balances at the beginning of the month :		
Stores ledger Control Account		25,000
Work in Progress Control Account		20,000
Finished Goods Control Account		35,000
Prepaid Production Overheads brought forward from previous month		3,000
Transaction during the month :		
Materials Purchased		75,000
Materials Issued :	<u>Rs.</u>	
To Production	30,000	
To Factory Maintenance	4,000	34,000
Materials transferred between batches		
Total wages paid :	<u>Rs.</u>	
To Direct workers	25,000	
To Indirect workers	5,000	30,000
Direct wages charged to batches		20,000
Recorded non-productive time of direct workers		5,000

Selling and Distribution Overheads incurred	6,000
Other Production Overheads incurred	12,000
Sales	1,00,000
Cost of Finished Goods Sold	80,000
Cost of Goods completed and transferred into finished goods during the month	65,000
Physical value of work in progress at the end of the month	40,000

The production overhead absorption rate is 150% of direct wages charged to work in progress

Required:

Prepare the following accounts for the month:

- A. Stores Ledger Control Account
- B. Work in Progress Control Account
- C. Finished Goods Control Accounts
- D. Production Overheads Control Account
- E. Profit and Loss Account.

Question 6

From the following details show the necessary accounts in the Cost Ledger

	Materials	Work- in- Progress	Finished Stock
	<u>Rs.</u>	<u>Rs.</u>	<u>Rs.</u>
Opening Balance	8,000	5,000	10,000
Closing Balance	11,000	9,000	12,000
Transactions during the period	<u>Rs.</u>		
Materials purchased	25,000		
<u>Wages paid</u>	10,000		
(including Rs. 2,000 indirect)			
Overheads incurred	8,000		
Overheads absorbed	9,000		
Sales	50,000		

CHAPTER 12

RECONCILIATION OF COST & FINANCIAL ACCOUNTS

Question 1

The financial records of Modern Manufacturers Ltd. Reveal the following for the year ended 30-6-2016.

	<u>Rs.</u>	
Sales(20,000 units)	4,000	
Materials	1,600	
Wages	800	
Factory Overheads	720	
Office & Administrative Overheads	416	
Selling & Distribution Overheads	288	
Finished Goods (1,230 units)	240	
Work-in-progress:		
Materials	48	
Labour	32	
Overheads(Factory)	32	112
Goodwill written off	320	
Interest on Capital	32	

In costing records factory overhead is charged at 100% wages, administration overhead 10% of factory cost & selling & distribution overhead at the rate of Rs. 16 per unit sold.

Prepare a statement reconciling the profit as per costs records with the profit as per financial records of the company.

Question 2

The following figures have been extracted from the financial accounts of the manufacturing firm for the first year of its operation:

Direct Material Consumption	50,00,000	
Direct Wages	30,00,000	
Factory Overheads	16,00,000	
Administrative Overheads	7,00,000	
Selling & Distribution Overheads	9,60,000	

Bad Debts	80,000
Preliminary Expenses Written Off	40,000
Legal Charges	10,000
Dividends Received	1,00,000
Interest Received on Deposits	20,000
Sales (1,20,000 units)	1,20,00,000
Closing Stocks:	
Finished Goods(4,000 units)	3,20,000
Work in Progress	2,40,000

The cost accounts for the same period reveal that the direct material consumption was Rs. 56, 00,000. Factory Overheads is recovered at 20% on prime cost. Administration Overheads is recovered at Rs.6/- per unit of production. Selling & Distribution Overheads are recovered at Rs. 8 per unit sold.

Prepare the Profit & Loss Account both as per financial record & as per cost records. Reconcile the profits as per the two records.

Question 3

Given below is the Trading & Profit & Loss Account of a Company for the year ended 31st March, 2016.

	Rs.		Rs.
To Materials	27,40,000	By Sales(60,000 units)	60,00,000
To Wages	15,10,000	By Stock(2,000 units)	1,60,000
To Factory Expenses	8,30,000	By Work-in-progress:	Rs.
To Administrative Expenses	382,400	Materials	64,000
To Selling Expenses	4,50,000	Wages	3 000
To Preliminary Expenses		Factory Expenses	20,000
Written off	60,000	By Dividend received	18,000
To Net Profit	3,25,600		
	62,98,000		62,98,000

The company manufacturer's standard units in the Cost Accounts:

(i) Factory expenses have been allocated to production at 20% of Prime Cost;

- (ii) Administrative expenses at Rs. 6 per unit produced &
 (iii) Selling expenses at Rs. 8 per unit sold.

Question 4

Niting Engineering Co manufactures two sizes of machine components, Size A & Size B.

Prepare the cost sheet of the company & reconcile the same with the profit disclosed by the financial Accounts.

The following data refer to the year ended 31st December, 2016.

	Size A	Size B
Production	125 Units	400 Units
Sales	120 Units	360 Units
	Rs.	Rs.
Wages Cost per unit	40	30
Material Cost per unit	15	12
Selling Cost per unit	125	90

All expenses other than, ages & materials are analysed under works overheads which during the year

Amounted to Rs. 9,000 & office overhead which amounted to Rs. 10,000. In fixing the selling price it was estimated that works overheads should be taken at 50% on wages & office overhead expenses at 33 1/3 on works cost. You are required to compute the following:

- (a) Total cost of each unit on the basis of the above overhead percentages;
- (b) The net profit for the year shown by the financial accounts valuing unsold stocks at actual material & wages cost plus works overhead at 50% on wages;
&
- (c) The reconciliation of net profit in (b) above with the estimated total net profit based on cost figures.

Question 5

The net profit-shown by Financial Accounts of a company amounted to Rs. 2,85,000 while the Profits as per Cost Accounts for that period was Rs. 3,88,600. On reconciliation, the following differences were noticed:-

I. The following items were included in the financial books:-

Directors Fees (Dr.)	Rs. 6500
Bank interest (Cr.)	300
Income Tax (Dr.)	83,000

I. Bad & Doubtful debts for Rs. 5,700 were written off in financial books.

II. Overheads in Cost Accounts absorbed were Rs.85,000 while the actuals were Rs.83,200.

III. A net loss of Rs.10,000 on sale of old machinery was dealt with in financial books.

Reconcile the Profit between the cost & financial accounts.

Question 6

A manufacturing company disclosed a net loss of Rs. 3,47,000 as per their cost accounts for the year ended March 31,2016. The financial accounts however disclosed a net loss of Rs. 5,10,000 for the same period. The following information was revealed as a result of scrutiny of the figures of both the sets of accounts:

(i) Factory Overheads under absorbed	40,000
(ii) Administration Overheads over-absorbed	60,000
(iii) Depreciation Charged in Financial Accounts	3,25,000
(iv) Depreciation Charged in Cost Accounts	2,75,000
(v) Interest on investments not included in cost accounts	96,000
(vi) Income Tax provided	54,000
(vii) Interest on loan funds in Financial Accounts	2,45,000
(viii) Transfer Fees (credit in financial books)	24,000
(ix) Stores Adjustment (credit in financial books)	14,000
(x) Dividend Received	32,000

Prepare a Memorandum Reconciliation Statement.

CHAPTER 13**STANDARD COSTING****Question 1**

Compute the Sales & Sales Margin Variances from the data given below:

Product	Budgeted Quantity Units	Actual Quantity Units	Budgeted Sale Price Per	Actual Sale Price Per Unit	Standard cost per unit Rs.
X	240	400	50	45	30
y	160	200	25	20	15

Question 2

From the following information about sales, calculate necessary sales variances:

Product	Budgeted Quantity Units	Budgeted Sale Price Per	Actual Quantity Units	Actual Sale Price Per Unit
A	5000	50.00	6200	55.00
B	4000	60.00	5600	62.50
C	3000	70.00	5000	80.00

Question 3

To obtain an output of 100 units of product X, 800 kgs of material is required at a budgeted price of Rs. 5 per kg. During the month, the actual output was 500 units. The actual material consumption was 4,400 KGS @ Rs. 5.30 per kg. You are required to calculate various material cost variances.

Question 4

The standard quantity of material required is 4 kgs per unit of output. The relevant figures are as under:

Material	A	B	c	D
Standard Mix %	30%	40%	20%	10%
Standard Price per kg(Rs.)	1.25	1.5	3.5	3
Actual Qty used (kgs)	1180	1580	830	440
Actual Price per kg(Rs.)	1.3	1.8	3.4	3

Actual output for the period was 1,000 units.

Calculate necessary variances.

Question 5

To produce a product, 3 types of materials are required as per following standards:

Materials	Kgs	Price per kg
A	100	5
B	60	10
C	40	15
Total	200	

The standard loss is 10% of gross input. During a given period following were the details of materials used for the production for the output of 4500 kg.

Materials	Kgs	Price per kg
A	2800	6
B	1600	9
C	900	14
Total	5300	

You are required to ascertain various material cost variances.

Question 6

The standard set for a chemical mixture of a firm is as under:

Material	Standard Mix %	Standard Price per kg (Rs.)
A	40	20
B	60	30

The standard loss in production is 10%. During the period, the actual consumption and price for an output of 189 kgs are as under:

Material	Actual Quantity	Actual Price Per kg (Rs.)
A	90	18
B	120	34

Calculate the variances.

Question 7

Vinayak Ltd produces an article blending two raw material A & B. It operates a standard costing system. The standard mix of A & B is 40% & 60% respectively while their standard prices per kg are Rs.4 & Rs. 3 respectively.

The normal loss in processing is 15%. During April, the company produced 1700 kg of output. The position of stock and purchases for the month of April is as under:

Material	Stock on 1 st April	Stock on 30 th April	Purchase	Cost of Purchase
A	35 kg	5 kg	800 kg	Rs. 3400
B	40 Kg	50 Kg	1200 Kg	Rs. 3000

Analyse the material cost variances into

- Price
- Mix&
- Yield

Question 8

The standard & actual figures of a firm are as under:

Standard Time for the job	1000 hours
Standard Rate per hour	Rs. 0.50
Actual Time paid	900 hours
Actual wages paid	Rs.360

Men	Rs.0.80
Women	Rs.0.60
Boys	Rs.0.40

In a normal working week of 40 hours, the gang is expected to produce 2,000 units of output. During the week ended 31st December 2016, the gang consisted of 34 men, 12 women & 9 boys. The actual wages paid were @ Rs.0.70, Rs. 0.65 & Rs. 0.30, respectively. 1,900 units were produced.

You are required to ascertain all labour cost variances.

Question 11

Mr M provides the following information relating to 1,000 units of product 'ZED' during the month of April 2004:

Standard Price Per kg of Raw Material	- Rs.3
Actual total direct material cost	- Rs.10,000
Standard Direct Labour Hours	- 1,600
Actual Direct Labour Hours	-1,800
Total standard direct labour cost	- Rs. 8,000
Standard Variable Overhead per direct Labour hour	- Rs. 1
Total Standard Variable Overheads	- Rs 1,600
Actual Total Variable Overheads	- Rs 1,620

The material usage variance is Rs 600 adverse & the overall cost variance per unit of ZED is Rs. 0.07 adverse as compared to the total standard cost per unit of ZED of Rs. 21.

You are required to compute the following:

- A. Standard quantity of raw material per unit of ZED
- B. Standard direct labour rate per hour.
- C. Standard direct material cost per unit of ZED.
- D. Standard direct labour cost per unit of ZED
- E. Standard total material cost for the output.
- F. Actual total direct labour cost for the output.
- G. Material Price Variance.
- H. Labour Rate Variance.
- I. Labour efficiency variance.

- J. Variable Overhead expenditure variance.
K. Variable Overheads efficiency variance./

Question 12

Z Ltd. Uses standard costing system in manufacturing of its single product 'M'.

The standard cost per unit of M is as follows:

		(Rs.)
Direct Materials	2 metres @ Rs.6 per metre	12.00
Direct Labour	1hour @ Rs. 4.40 per hour	4.40
Variable Overhead	1hour @ Rs. 3 per hour	<u>3.00</u>
		<u>19.40</u>

During July, 2016, 6000 units of M were produced & the related data are as under:

Direct Material acquired	- 19000 mts@ 5.70 per mts
Material consumed	- 12670 mts
Direct labour -? Hours@ Rs.-? Per hour	- Rs. 27,950
Variable Overheads incurred	- Rs. 20,475

The variable overhead efficiency variance is Rs. 1,500 adverse. Variable overheads are based on direct labour hours.

There was no stock of raw material in the beginning.

You are required to compute the missing figure & work out all the relevant variances.

Question 13

XYZ Ltd. Has furnished you the following for the month of August:

	<u>Budgeted</u>	<u>Actual</u>
Output (units)	30,000	32,500
Hours	30,000	33,000
Fixed Overhead Rs.	45,000	50,000
Working days	25	26

Calculate the fixed overhead variances

Question 14

X Ltd. Has furnished you the following for the month of August:

Output (units)	1, 00,000	1, 26,000
Hours	20,000	25,200
Fixed Overhead Rs.	2, 40,000	2, 64,600
Working days	25	24

There were 5,040 hours of abnormal idle item included in actual hours.

Calculate the fixed overhead variances·

Question 15

Following is the standard cost card of a component:

Materials	2 units at Rs.15	Rs.30
Labour	3 hours at Rs. 20	Rs.60
Total Overhead	3 hours at Rs. 10	Rs.30

During a particular month 10,000 units of the components were produced and the same was found to be at 60% capacity of the budget. In preparing the variance report for the month, the cost accountant gathered the following information:

Labour	Rs. 6,50,000
Variable Overheads	Rs. 2,00,000
Fixed Overheads	Rs. 3,00,000
Material Price Variance	Rs. 70,000(A)
Material cost variance	Rs.50,000(A)
Labour Rate Variance	Rs.50,000(F)
Fixed overhead expenditure variance	Rs.50,000 (A)

You are required to prepare from the above details:

1. Actual Material Cost incurred
2. Standard Cost of Material Actually Consumed
3. Labour efficiency variance
4. Variable OH efficiency variance
5. Variance OH expenditure variance
6. Fixed Overheads Cost Variance
7. Fixed Overheads Expenditure Variance
8. Fixed Overheads Volume Variance

CHAPTER-14

MARGINAL COSTING

Question 1

A company has an opening stock of 6,000 units of output. The production planned for the current period is 24,000 units & expected sales for the current period amount to 28,000 units. The selling price per unit is expected to Rs. 10. The variable cost was Rs. 5 per unit during the previous period, but is expected to be Rs 6 per unit during the coming period. What is the Break Even Volume for the current period if the total fixed costs for the current period are R. 86,000? Assume that the First-in-First-out Method is followed.

Question 2

A company has an opening stock of 6,000 units of output. The production planned for the current period is 23,000 units & expected sales for the current period amount to 28,000 units. The selling price per unit of output is Rs. 10. Variable cost per unit is expected to Rs. 6 per unit while it was only Rs. 5 per unit during the previous period. What is Break-Even Volume for the current period if the total fixed costs for the current period are Rs. 1, 06,000? Also indicate profit for the current period.

Assume that the Last in First out System is followed.

Question 3

A Pharmaceutical company produces formulations having a shelf life of one year. The company has an opening stock of 30,000 boxes on 1st January, 2016 & expected to produce 1, 30,000 boxes as was in the just ended year of 2015. Expected sale would be 1, 50,000 boxes. Costing department has worked out escalation in cost by 25% on variable cost & 10% on fixed cost. Fixed cost for the year 2015 is Rs. 40 per unit. New price announced for 2016 is Rs. 100 per box. Variable cost on opening stock is Rs. 40 per box. You are required to compute breakeven volume for the year 2016.

Question 4

From the under mentioned figures calculate:

(i) P/V ratio & the total fixed expense;

(ii) Profit or loss arising from the sales of Rs.12,000;

(iii) Sales required to earn a profit of Rs.2,000;

(iv) Sales required to break-even.

	Total Sales	Total costs
	Rs.	Rs.
First Period	14,433	385
Second Period	18,203	1,139

Question 5

The following figures relates to a company manufacturing a varied range of products:

Period	Total Sales	Total Costs
	Rs.	Rs.
1	3900	3480
2	4300	3760

Calculate:

1. P/V Ratio;
2. Total Fixed Expenses;
3. Break-even Sales;
4. Profit or Loss arising from the sale of Rs. 4,000
5. Sales required earning a profit of Rs. 750.

State your assumptions in the above calculation

Question 6

Calcutta company Ltd. Manufactures & sells four types of products under the brand names ACE, UTILITY, LUXURY & SUPREME. The sales mix in value-comprises of:

Brand	Percentage
ACE	$33\frac{1}{3}\%$
UTILITY	$41\frac{2}{3}\%$
LUXURY	$16\frac{2}{3}\%$
SUPREME	$8\frac{1}{3}\%$
	<u>100%</u>

The total budgeted sales (100%) are Rs. 6, 00,000 per month.

The operating costs are:

ACE	60% of selling price
UTILITY	68% of selling price
LUXURY	80% of selling price
SUPREME	40% of selling price

The fixed costs are Rs. 1, 59,000 per month. Calculate the break-even point for the products on an overall basis.

It has been proposed to change the sales mix as follows, the total sales per month remaining

Rs.6, 00,000:

<u>Brand</u>	<u>Percentage</u>
ACE	25%
UTILITY	40%
LUXURY	30%
SUPREME	5%
	<u>100%</u>

Assuming that this proposal is implemented, calculate the new break- even point.

Question 7

Anuradha Enterprise manufactures & sells black phenyl worth Rs. 20,000, white phenyl worth Rs. 25,000, scented phenyl worth Rs. 10,000 and naphthalene balls worth Rs. 5,000 every month. The firm's total fixed costs per month are Rs. 14,700. The variable costs are: on black phenyl 60%, on white phenyl 68%, on scented phenyl 80% & on naphthalene balls 40%. The proprietress, Ms Anuradha Shah, being basically a science graduate, wonders at what combined sales volume she really starts earning profit. Please help her in arriving at such a sales volume.

Question 8

Two competing companies ABC Ltd. & XYZ Ltd. Produce & sell the same type of product in the same market. For the year to end March 2016 their forecasted profit & loss accounts are as follows:

	ABC Ltd. (Rs.)	XYZ Ltd. (Rs.)
Sales	2,50,000	2,50,000
Less: Variable Cost of Sales	1,50,000	2,00,000
Less: Fixed Cost	75,000	25,000
Forecasted Net Profit Before Tax	25,000	25,000

You are required to compute:

1. P/V Ratio
2. Break Even Sales Volume
3. You are also required to state which company is likely to earn greater profit in conditions of (a) Low Demand & (b) High Demand

Question 9

The following are the cost & sales data of a manufacturer selling three products X, Y & Z.

Products	Selling Price	Variable Cost	Percent of Rupees
	Per Unit (Rs.)	Per Unit (Rs.)	Sales Volume
X	4	3	20
Y	5	4	40
Z	8	6	40

Capacity of the manufacturer is Rs. 15 lakhs total sales volume. Annual fixed cost 2,30,000.

(1) Find the break-even point in Rupees. (2) Calculate his profit or loss at 80% capacity.

Question 10

Evenkeel Ltd. Manufacturers and sells a single product X whose price is Rs. 40 per unit & the variable cost is Rs.16 per unit.

(a) If the fixed cost for this year is Rs. 4,80,000 & the annual sales are at 60% margin of safety, calculate the rate of net return on sales assuming an income tax level of 40%.

(b) For the next year, it is proposed to add another product line Y whose selling price would be Rs. 50 per unit & the variable cost Rs. 10 per unit. The total fixed costs are estimated at Rs. 6,66,600. The sales mix of X:Y would be 7:3. At what level of sales net year would even keel Ltd. Break even?

Give separately for both X & Y the breakeven sales in rupees & quantities.

Question 11

AEC Office Supplies Corporation retails two products - a Standard and a deluxe version of a designer ball point pen. The budgeted income statement is as under:

	Standard	Deluxe	Total
Sales(in units)	1,50,000	50,000	2,00,000
	(Rs.)	(Rs.)	(Rs.)
<u>Sales:</u>			
@Rs. 20 per unit	3,00,000	15,00,000	45,00,000
@Rs. 30 per unit	--		
<u>Variable Costs:</u>			
@Rs. 14 per unit	21,00,000		
@Rs. 14 per unit	--	9,00,000	30,00,000
Contribution	9,00,000	6,00,000	15,00,000
Fixed Costs			12,00,000
Profit			3,00,000

1. Calculate the breakeven point in units assuming that the planned sales mix is maintained.
2. Calculate the breakeven point in units:

If only standard version is sold &

If only deluxe version is sold

3. Suppose 2,00,000 units are sold, of which only 20,000 units are deluxe quality, calculate the profit.

Calculate breakeven point if these relationships persist in the next accounting period. Compare your answer with the original plan & the answer in requirement

CHAPTER-15

BUDGETING CONTROL

Question 1

A single-product company estimated its sales for the next year quarter wise as under:

Quarter	Sales {Units)
I	30,000
II	37,500
III	41,250
IV	45,000

The opening stock of finished goods is 10,000 units & the company expects to maintain the closing stock of finished goods at 16,250 units at the end of the year. The production pattern in each of the year. The production pattern in each quarter is based on 80% of the sales of the current quarter & 20% of the sales of the next quarter.

The opening stock of raw materials in the beginning of the year is 10,000 kg. & the closing stock at the end of the year is required to be maintained at 5,000 kg. Each unit of finished output requires kg. of raw materials.

The company proposes to purchase the entire annual requirement of raw materials in the first three

Quarter in the proportion & at the prices given below:

Quarter	Purchase of raw materials% to total annual requirement In Quantity	Price Per Kg.
I	30%	2
II	50%	3
III	20%	4

The value of opening stock of raw materials in the beginning of the year is Rs. 20,000. You are required to present the following for the next year, quarter wise:

- i. Production budget (in units).
- ii. Raw material consumption budget (in quantity)
- iii. Raw material purchase budget (in quantity & value)
- iv. Priced Stores ledger card of the raw material using First in First out method.

Question 2

A company manufactures three products namely A,B & C. The current pattern of sales of A,B & C is in the ratio of 8: 2: 1 respectively. The relevant data are as under:

VZ Products	A	B	C
A Selling price per unit	130	230	417
Raw Materials per unit kg.	0.50	1.20	2.5
Direct Materials per unit kg	0.25	-	-
Skilled labour hours/unit	4	6	8
Semi-skilled labour hours per unit	2	2	3
Variable overheads Rs.Per unit	20	40	80

The prices of raw materials & direct materials respectively are Rs.100 & Rs. 40 per kg. The wage rates of skilled & semiskilled labour respectively are Rs. 6 & Rs. 5. Each operator works 8 hours a day for 25 days in a month.

The positions of inventories are as under:

	Raw Materials Kg.	Direct Materials	A Units	B Units	C Units
Opening	600	400	400	100	50
Closing	650	260	200	300	50

1. The fixed overheads amount to Rs. 2, 00,000 per month and the company desires a profit of Rs. 1, 20,000 per month.
2. You are required to prepare the following for a month:
3. Sales budget in quantity & value.
4. Production budget showing the quantity to be manufactured.

5. Purchase budget showing the quantity & value.
6. Direct labour budget showing the number of workers & wages.

Question 3

A company is engaged in the manufacture of specialized sub-assemblies required for certain electronic equipment's. The company envisages that in the fourth coming month, December 1998, the sales will take a pattern in the ratio of 3:4:2 respectively of subassemblies, ACB, MCB & DP. The following is the schedule of components required for manufacture:

Sub-assembly Price	Selling	Component requirements			
		Base board	IC08	IC12	IC26
ACB	520	1	8	4	2
MCB	500	1	2	10	6
DP	350	1	2	4	8
Purchase Price		Rs. 60	20	12	8

The direct labour time & variable overheads required for each of the sub-assemblies are:

	Labour Hours Per Sub-Assembly		
	Grade A	Grade B	Variable O/H per sub -assembly
ACB	8	16	36
MCB	6	12	24
DP	4	8	24
Direct Wages rate per hrs. Rs.	5	4	-

The labourers work 8 hours a day for 25 days a month.

The opening stocks of sub-assemblies and components for December, 2016 are as under:

Sub-Assemblies		Components	
ACB	800	Based Board	1600
MCB	1200	IC08	1200
DP	2800	IC012	6000
		IC26	4000

Fixed overheads amount to Rs. 7, 57,200 for the month and a monthly profit target of Rs. 12 lacs has been set.

The company is eager for a reduction of closing inventories for December,2016 of sub-assemblies and components by 10% of quantity as compared to the opening stock. Prepare the following budgets for December 2016:

1. Sales budget in quantity and value.
2. Production budget in quantity.
3. Component usage budget in quantity.
4. Component purchase budget in quantity & value.
5. Manpower budget showing the number of workers and the amount of wages payable.

Question 4

A factory which expects to operate 7,000 hours, i.e., at 70% level of activity, furnishes details of expenses as under:

Variable expenses	Rs. 1,260
Semi-Variable Expenses	Rs. 1,200
Fixed Expenses	Rs. 1,800

The semi-variable expenses go up by 10% between 85% & 95% activity & by 20% above 95% activity. Construct a flexible budget for 80, 90 & 100 percent activities.

Question 5

A department of Company X attains sale of R. 6, 00,000 at 80 percent of its normal capacity and units expenses are given below:

<u>Administration costs:</u>	<u>Rs.</u>
Office Salaries	90,000
General Expenses	2 Percent of Sales
Depreciation	7,500
Rates & Taxes	8,750
<u>Selling Costs:</u>	
Salaries	8 percent of sales
Travelling Expenses	2 percent of sales
Sales office expenses	1 percent of sales
General Expenses	1 percent of sales
<u>Distribution costs:</u>	
Wages	15,000
Rent	1 percent of sales
Other Expenses	4 percent of sales

Draw up flexible administration, selling & distribution costs budget, operating at 90 percent 100 percent & 110 percent of normal capacity.

Question 6

Action Plan Manufacturers normally produce 8,000 units of their product in a month, in their machine shop. For the month of January, they had planned for a production of 10,000 units. Owing to sudden cancellation of a contract in the middle of January, they could only produce 6,000 units in January.

Indirect manufacturing costs are carefully planned and monitored in the Machine Shop & Foreman of the shop is paid a 10 % of the savings as bonus when in any month the indirect manufacturing cost incurred is less than the budgeted provision.

The Foreman has put in a claim that he should be paid bonus of Rs. 88.50 for the month of January. The Workers Manager wonders how anyone can claim a bonus when the Company has lost a sizeable contract.

The relevant figures are as under:

Indirect manufacturing Costs	Expenses for a normal month	Planned for January	Actual in January
Salary of foreman	1,000	1,000	1,000
Indirect Labour	720	900	600
Indirect Material	800	1,000	700
Repairs & Maintenance	600	650	600
Power	800	875	740
Tools consumed	320	400	300
Rates & Taxes	150	150	150
Depreciation	800	800	800
Insurance	100	100	100
	5,290	5,875	4,990

Do you agree with the Works Manager? Is the Foreman entitled to any bonus for the performance in January? Substantiate your answer with facts & figures.

CHAPTER-16

MARGINAL & ABSORPTION COSTI

Question 1

WONDER Ltd. manufactures a single product, ZEST. The following figures relate to ZEST for a one-year period:

Activity Level	50%	100%
Sales & Production (units)	400	800
	<u>Rs. lakhs</u>	<u>Rs. lakhs</u>
Sales	8.00	16.00
Production Costs:		
Variable	3.20	6.40
Fixed	1.60	1.60
Selling & Administration Costs:		
Variable	1.60	3.20
Fixed	2.40	2.40

The Normal level of activity for the year is 800 units. Fixed Costs are incurred evenly throughout the year, and actual fixed costs are the same as budgeted. There were no stocks of ZEST at the beginning of the year. In the first quarter 220 units were produced & 160 units were sold.

Requires:

- a) What would be the fixed production costs absorbed by ZEST if absorption costing is used?
- b) What would be the under/over recovery of overheads during the period?
- c) What would be the profit using absorption costing?
- d) What would be the profit using marginal costing?
- e) Why is there a difference between the answers to (c) & (d)?

Question 2

XYZ Ltd. Has a production capacity of 2, 00,000 units per year. Normal capacity utilization is reckoned as 90%. Standard variable production costs are Rs. 11 per unit. The Fixed Costs are Rs. 3, 60,000 per year.

Variable Selling Costs are Rs. 3 per unit & Fixed Selling Costs are Rs. 2, 70,000 per year. The unit selling price is Rs. 20.

In the year just ended on 30th June, 2016, the production was 1, 60,000 units & sales were 1, 50,000 units.

The closing inventory on 30th June was 20,000 units. The actual variable production costs for the year were Rs. 35,000 higher than the standard.

I. Calculate the profit for the year

- a) By absorption costing method &
- b) Dy Marginal Costing Method

II. Explain the Difference

CHAPTER-16

Activity Based Costing

Question 1

A company produces four products viz. P, Q, R and S. The data relating to production activity are as under:-

Production overhead is as under:-

Product	Quantity of Production	Materials cost/unit Rs.	Direct Labour hours/unit	Machine hours/unit	Direct Labour cost/unit Rs.
P	1,000	10	1	0.5	6
Q	10,000	10	1	0.5	6
R	1,200	32	4	2	4
S	14,000	34	3	3	18

Rs.

- | | |
|---|----------|
| 1. Overhead applicable to machine oriented activity | 1,49,700 |
| 2. Overhead relating to ordering materials | 7,680 |
| 3. Set up costs | 17,400 |
| 4. Administration overheads for spare parts | 34,380 |
| 5. Material handling costs, | 30,294 |

The following further information has been complied:-

Product	Number of Set up	Number of Material orders	Number of times material handled	Number of times materials Handled
P	3	3	6	6
Q	18	12	30	15
R	5	3	9	3
S	24	12	36	12

Required:

- Select a suitable cost driver for each item of overhead expense and calculate the cost per unit of cost driver

2. Using the concept of Activity Based Costing, compute the factory cost per unit of each product.

Question 2

Traditional LTD is a manufacturer of range of goods. The cost structure of its different products is as follows:-

Particular	Product A	Product B	Product C
Direct Material	50	40	40 Rs./U
Direct Labour @ 10 Rs./ hour	30	40	50 Rs./U
Production Overhead	30	40	50 Rs./U
Total Cost	<u>110</u>	<u>120</u>	<u>140 Rs./U</u>
Quantity Produced	10,000	20,000	30,000 Units

Traditional Ltd. was absorbing overheads on the basis of direct labour hours. A newly appointed management accountant has suggested that the company should introduce ABC system and has identified cost drivers and cost pools as follows:

Activity cost pool	Cost driver	Associated Cost
Stores Receiving	Purchase requisition	2,96,000
Inspection	Number of production runs	8,94,000
Dispatch	Orders executed	2,10,000
Machine Setup	Number of Setups	12,00,000

The following information is also supplied:

Details	Product A	Product B	Product C
No. of Setups	360	390	450
No. of orders executed	180	270	300
No. of production runs	750	1050	1200
No. of Purchase requisition	300	450	500

You are required to calculate activity based production cost of all the three products.



Prof. Dani Khandelwal (CA)

Prof. Dani Khandelwal has been imparting a great deal of knowledge in the field of Cost Accounting & Financial Management for the last 20+ years.

Till date he has taught around 35,000+ students.

Since CA exams test not only the ability of a student to remember facts & figures but also the student's analytical capabilities, he truly believes in strengthening the Conceptual understanding of the subject. And, because of his in-depth knowledge & the passion to teach, he always goes an extra mile to ensure every student gains a thorough understanding of the topic.

Over the years, Costing subject among students is popularly referred as "Dani Ki Costing".

He is also well known and appreciated for the usefulness of his last minute revision notes.



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