PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Part I MCQs

Case Scenario-I

ABC Company produces three products X. Y and Z. Similar type of material is used in the production of all the three products. The company has been using traditional absorption costing method, using direct labour hours to allocate overheads to its products. The Cost Accountant has suggested considering an activity based costing system. The following information is available in the records of the company.

	X	Y	Z
Production Volume p.a. (In units)	16,000	17,000	15,000
Direct Material per unit	3 kg	4 kg	5 kg
Labour hours per unit	0.10	0.15	0.20
Machine hours per unit	0.5	0.7	0.9
No. of Production runs p.a	50	65	60
No. of purchase orders p.a	5	10	15
No. of order shipped p.a	25	35	32

Activity	Cost (₹)	Cost Driver
Machine setup costs	49,000	Production Runs
Machine running costs	64,128	Machine hours
Purchase cost	52,050	Purchase orders
Delivery cost	46,460	Orders shipped

The price of Raw Material is ₹2 per kg.

Direct labour cost per hour is ₹20.

On the basis of above Case Scenario, you are required to answer the following MCQs 1 to 5:

1. *What is overhead absorption rate per hour as per traditional absorption costing method?*

   (A) ₹ 29.60

   (B) ₹ 29.32

   (C) ₹ 13.78

   (D) ₹ 15.82

2. *What is full cost per unit of product Y under traditional absorption costing method?*

   (A) ₹ 19.92

   (B) ₹ 4.44

   (C) ₹ 46.32

   (D) ₹ 15.44

3. *Under an activity based costing system, what is the cost driver rate for machine set up costs?*

   (A) ₹ 280

   (B) ₹ 1.467

   (C) ₹ 6.85

   (D) ₹ 230

4. *Under an activity based costing system, the amount of allocated overheads attributable to machine running hours to product X is:*

   (A) ₹ 22,848

   (B) ₹ 15,360

   (C) ₹ 25,920

   (D) ₹ 14,000

5. *The total cost of product Z as per activity based costing method is :*

   (A) ₹ 2,86,073

   (B) ₹ 2,94,905

   (C) ₹ 84,905

   (D) ₹ 2,60,660

Case Scenario - II

XYZ Limited produces the product P. The cost accountant of the company has to prepare its budget for a particular year.

The following information are made available for this purpose:

The expected sales of the product P is 1,00,000 units during the year at a selling price of ₹ 50 per unit.

Each unit of product P requires 3 kgs of raw material Q and 4 kgs of raw material R.

The expected stock levels are as follows:

	Beginning of year	*End of year*
Finished product P in units	*12,000*	*15,000*
Raw material Q in kgs	*26,000*	*20,000*
Raw material R in kgs	*36,000*	*42,000*

Raw material Q costs ₹ 2 per kg and R costs ₹ 3 per kg.

It requires 10 minutes of direct labour time to produce one unit of product P. Labour cost is ₹ 50 per hour.

Variable manufacturing overheads are ₹ 10 per unit.

Fixed manufacturing cost is ₹ 3,00,000 per year.

Fixed Administration and selling expenses are ₹ 25,000 per year.

On the basis of above Case Scenario, you are required to answer the following MCQs 6 to 10:

6. *The total number of units to be produced of product P is:*

   (A) 1,03,000 units

   (B) 97,000 units

   (C) 92,000 units

   (D) 1,27,000 units

7. *The total quantity of raw material R to be purchased during the year -*

   (A) 4,06,000 kgs

   (B) 4,18,000 kgs

(C) 3,82,000 kgs

(D) 3,75,000 kgs

8 The total cost of purchase of Raw Material Q during the year is -

(A) ₹ 6,00,000

(B) ₹ 6,06,000

(C) ₹ 5,88,000

(D) ₹ 6,12,000

9. The budgeted variable cost of production of one unit of product P is -

(A) ₹ 46.33

(B) ₹ 36.38

(C) ₹ 25.33

(D) ₹ 36.33

10. What is the budgeted net income for the year?

(A) ₹ 10,41,667

(B) ₹ 13,66,650

(C) ₹ 10,67,000

(D) ₹ 10,37,000

11. AB limited has furnished the following data:

	Budget	Actual (for the month of March)
Production in units	40,000	48,000
Fixed overheads (₹)	78,000	84,000

Calculate fixed overhead volume variance.

(A) ₹ 15,600 F

(B) ₹ 15,600 A

(C) ₹ 6,000 A

(D) ₹ 14,000 A

12. *Two products Y and Z are obtained in a crude form and require further processing at a cost of ₹ 6 for Y and ₹ 5 for Z per litre before the products can be sold in the market. The final prices of product Y and Z are ₹ 15 and ₹ 8.75 per litre respectively. The company earns a net margin of 25% on Cost.*

    The following data is available for output of both the products for the year

    Y 8,000 Litres

    Z 6,000 Litres

    A joint cost of ₹ 60,000 was incurred for the year and company apportions the joint costs on the basis of net realisable value after further processing.

    Calculate the joint cost per unit of product Y.

    (A) ₹ 4.74

    (B) ₹ 5.00

    (C) ₹ 5.625

    (D) ₹ 6.00

13. *The data pertaining to the worker C in a factory depicts that he is paid at a rate of ₹ 100 per hour and a week comprises 48 hours for a 6 days' work. The allowed absence time is 15 minutes per day for maintenance etc. The job card of C indicates, his chargeable time is scattered for 2 different jobs J1-21 hours and J2-24 hours. Any unaccounted time is attributable for power failure.*

    Calculate cost of normal idle time and abnormal idle time.

    (A) ₹ 100 and ₹ 150

    (B) ₹ 150 and ₹ 150

    (C) ₹ 150 and ₹ 100

    (D) ₹ 100 and ₹ 100

14. *During a certain period, 4,000 labour hours were utilized, and the standard hours for actual production were 5,500 hours. The Variable Overhead Efficiency Variance amounted to ₹ 15,000 (Favourable).*

    Calculate the Standard Variable Overhead Rate per hour.

    (A) ₹ 15 per hour

(B) ₹ 20 per hour

(C) ₹ 10 per hour

(D) ₹ 25 per hour

15. *A company is analysing its inventory management practices and has determined that the Economic Order Quantity (EOQ) is 400 units. The cost incurred for placing a single order is ₹ 25, while the total demand for the year amounts to 8,000 units.*

Calculate the Carrying Cost per unit.

(A) ₹ 2.80 per unit

(B) ₹ 1.85 per unit

(C) ₹ 1.58 per unit

(D) ₹ 2.50 per unit

Answer Key

MCQ No.	Correct Option
1.	(A)
2.	(D)
3.	(A)
4.	(B)
5.	(B)
6.	(A)
7.	(B)
8.	(B)
9.	(D)
10.	(A)
11.	(A)
12.	(D)
13.	(B)
14.	(C)
15.	(D)

Part II

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

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

In case, any candidate answers extra question(s)/ sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.

Working notes should form part of the answer.

Question 1

(a) XYZ Company has an option to buy any one of the two machines N or M to manufacture its unique industrial component P. Each of the machines have the capacity to produce same quality of component P and are almost identical except for the fact that they are being manufactured by a different manufacturers. The specifications for each Machine are:

***Machine M**: It has the capacity to produce 50,000 components of P per annum, the fixed costs being 1,50,000 and could generate a profit of 2,25,000 on the sale of all the components produced.*

***Machine N:** It is also having the equal capacity to produce same number of components as that of Machine M per annum and all the components thus produced could be sold in the open market without any difficulty. Fixed cost of Machine N is 60,000 less than that of Machine M and yield a profit of 1,60,000 by selling all the components that are produced.*

The selling price of each component of P is 100.

Required:

(i) Calculate break even sales in value for each machine. ***(3 Marks)***

(ii) Calculate sales levels in units where both the machines are equally profitable. ***(2 Marks)***

(b) PQR Ltd. manufactures a product in batches of 2,000 units.

The following costs are incurred for each batch

Particulars	*Amount (in ₹)*
Direct Material Cost per Batch	*2,40,000*
Direct Labour Cost per Batch	*1,65,000*
Overhead Absorption Rate (variable)	*120 per machine hour*
Expected Rejection Rate	*3%*
Scrap Value per Rejected Unit	*75*

Other Information:

Particulars	*Details*
Selling Price per Good Unit	*₹ 250*
Total Available Machine Hours per month	*3,000 hours*
Fixed Overheads per Month	*₹ 1,25,000*
Batches Manufactured per Month	*10 batches*

Required:

(i) Calculate contribution per unit of good units after adjusting rejected units. ***(3 Marks)***

(ii) Calculate the company's total monthly profit. ***(2 Marks)***

(c) The Cost Accountant of a Manufacturing concern has given the following details in respect of a raw material X:

Difference between Minimum lead time and Maximum lead time is 4 days.

Average Lead time to procure the Raw Material X is 7 days.

Reorder Level	*1,80,000 units*
Reorder Quantity	*90,000 units*
Minimum Stock Level	*1,00,000 units*
Maximum Stock Level	*1,90,000 units*

Required to Calculate:

(1) Maximum Consumption per day ***(2 Marks)***

(2) Minimum Consumption per day ***(2 Marks)***

Answer

(a) (i)

	Machine M			Machine N		
	Quantity	**Price**	**Amount (₹)**	**Quantity**	**Price**	**Amount (₹)**
Sales	50,000	100	50,00,000	50,000	100	50,00,000
Variable cost	50,000	92.5	46,25,000	50,000	95	47,50,000
Contribution		7.5	3,75,000		5	2,50,000
Fixed Cost			1,50,000			90,000
Profit			2,25,000			1,60,000
P/V Ratio						
$\frac{\text{Contribution x 100}}{\text{Sales}}$			$\frac{3,75,000 \times 100}{50,00,000}$			$\frac{2,50,000 \times 100}{50,00,000}$
			7.5%			5%
Break even Sales						
$\frac{\text{FixedCost}}{\text{P / V Ratio}}$			20,00,000			18,00,000

(ii) Let the units be x

7.5x – 1,50,000 = 5x – 90,000

2.5x = 60,000

X = 24,000 Units

(b) (i) Calculation of Contribution per unit of good units

	Total Amount (₹)	**Per Unit (₹)**
Selling Price	48,50,000	250.00
Direct Material Cost	24,00,000	
Direct Labour Cost	16,50,000	
Variable Overhead (₹120 x 3,000 hours)	3,60,000	
Total Variable Cost	44,10,000	220.50

Less: Scrap Value of Rejected Units (₹ 75 x 20,000 x 3%)	45,000	
Net Variable Cost	43,65,000	225.00
Contribution per good units	4,85,000	25.00

Working Note:

Number of units manufactured in a month = Number of batches x number of units in a batch

= 10 x 2,000 = 20,000 units

Number of good units sold = 20,000 units x 97% = 19,400 units

(ii) Calculation of Company's total monthly profit

	Total Amount (₹)
Contribution	4,85,000
Less: Fixed Cost	1,25,000
Total Monthly Profit	3,60,000

(c) Let the Minimum lead time be A and Maximum lead time be B

B - A = 4 ...1

Average lead time of X = 7

$$\frac{A+B}{2} = 7$$

A + B = 14 ...2

From equation 1 and 2, we get

A (Minimum lead time) = 5

B (Maximum lead time) = 9

(i) Re-order level = Maximum re-order period/lead time × Maximum consumption

1,80,000 units = 9 × Maximum consumption

Maximum consumption = 20,000 units

(ii) Maximum stock of A = Re-order level + Re-order quantity – (Minimum consumption × Minimum re-order period/lead time)

1,90,000 unit = 1,80,000 units+90,000 units – (Min. Consumption x 5)

$$\text{Min. Consumption} = \frac{80,000 \text{ units}}{5} = 16,000 \text{ units}$$

Part (ii) can also be done in following way:

(ii) Minimum Stock Level **=** Re-order level – (Average Consumption X Average Lead time

1,00,000 = 1,80,000 – (Average Consumption X 7)

Average Consumption per day = 11,428.57

Average Consumption per day = (Maximum consumption + Minimum consumption)/ 2

11,428.57 = (20,000 + X) /2

Minimum Consumption per day = **2,858 units**

Question 2

(a) The following information relates to a manufacturing concern A Ltd. for the year ended 31st March, 2024.

Particulars	*As on 1st April,2023*	*As on 31st March,2024*
Raw Material (in ₹)	*3,40,000*	*1,80,000*
Work in Progress (in ₹)	*5,50,000*	*3,50,000*

Particulars	*Amount*
Raw Material Purchased [Inclusive of GST@18% (Ineligible for ITC)]	*8,00,000*
Packaging Cost (primary)	*3,00,000*
Fee Paid to Independent Directors	*5,00,000*
Production bonus paid to factory workers	*10% of Wages paid to factory workers*
Job charges paid to job workers	*41,000*

Salary paid to Supervisor	*6,17,900*
Wages paid to factory workers	*6,30,000*
Salary paid to Production Control Manager	*7,20,000*
Sale of Scrap generated during Manufacturing	*50,000*
Selling Overheads per unit	*2*
Salary paid to General Manager	*12,40,000*
Freight Inwards	*2% on Raw Material Purchased*
Expenses Paid for Quality Control check activities	*4,30,000*

Particulars	***Cost Price (₹)***	***WDV as on 1st April, 2023 (₹)***	***Depreciation Rate***	***Insurance Cost per annum***
Factory Building	*25,00,000*	*21,87,000*	*10%*	*2% of Cost Price*
Plant and Machinery	*15,00,000*	*11,56,000*	*15%*	*2% of Cost Price*
Office Building	*40,00,000*	*36,00,000*	*10%*	*Nil*

Additional information:

(i) Depreciation is charged on the written down value method.

(ii) Stock of finished goods as on 1st April, 2023 was 80,000 units having a total cost of 8,00,000. The entire stock of opening finished goods is sold during the year, closing stock is 70,000 units. During the period, 4,50,000 units were sold.

(iii) A Ltd. wants a profit of 20% on Total Sales.

Required:

Prepare a Cost statement showing the various elements of cost and profit earned for the year ended 31st March, 2024. ***(9 Marks)***

(b) A skilled worker has assigned a work. The relevant data is given as follows:

Time rate per hour	*₹ 25*
Time allowed	*9 hours*
Time taken	*6 hours*

The worker has given an option to choose either Halsey (50% plan) or Rowan plan.

You are required to calculate earnings under both plans and which plan is more beneficial for a worker. ***(5 Marks)***

Answer

(a) Cost Sheet

Particulars	**(₹)**	**(₹)**
Material Consumed:		
Raw materials purchased	8,00,000	
Freight inwards (2% of Raw materials purchased)	16,000	
Add: Opening stock of raw materials	3,40,000	
Less: Closing stock of raw materials	(1,80,000)	9,76,000
Direct employee (labour) cost:		
Wages paid to factory workers	6,30,000	
Production bonus paid to factory workers (10%)	63,000	6,93,000
Direct expenses:		
Job charges paid to job workers	41,000	41,000
Prime Cost		**17,10,000**
Works/ Factory overheads:		
Depreciation on factory building (21,87,000 x 10%)	2,18,700	
Depreciation on plant & machinery (11,56,000 x 15%)	1,73,400	
Insurance premium paid for plant & machinery (15,00,000 x 2%)	30,000	
Insurance premium paid for factory building (25,00,000 x 2%)	50,000	
Salary paid to supervisors	6,17,900	10,90,000

Gross factory cost		**28,00,000**
Add: Opening value of W-I-P		5,50,000
Less: Closing value of W-I-P		(3,50,000)
Factory Cost		**30,00,000**
Quality control cost:		
Expenses paid for quality control check activities	4,30,000	4,30,000
Administration cost related with production:		
Salary paid to Production control manager	7,20,000	7,20,000
Less: Realisable value on sale of scrap and waste		(50,000)
Add: Primary packing cost		3,00,000
Cost of Production		**44,00,000**
Add: Opening stock of finished goods (80,000 units)		8,00,000
Less: Closing stock of finished goods (70,000 units)		(7,00,000)
Cost of Goods Sold		**45,00,000**
Administrative overheads:		
Depreciation on office building (36,00,000 x 10%)	3,60,000	
Salary paid to General Manager	12,40,000	
Fee paid to independent directors	5,00,000	
Selling Overheads (4,50,000 units x ₹2):	9,00,000	30,00,000
Cost of Sales		**75,00,000**
Profit (25% on cost)		18,75,000
Sales		**93,75,000**

Working Note: Calculation of value of closing finished goods.

Number of units produced = units sold + closing stock – opening stock

= 4,50,000 + 70,000 – 80,000

= 4,40,000 units

Per unit cost $= \frac{\text{Cost of production}}{\text{Number of units produced}}$

$= \frac{₹\ 44,00,000}{4,40,000 \text{ units}} = ₹\ 10$ per unit

Value of Closing stock = ₹ 10 x 70,000 units = ₹ 7,00,000

(b) Earning under Halsey Plan

Total Wages = (Time taken × Time rate) + (50% of time saved × time rate)

= (6 hrs x ₹ 25) + ((9 hrs - 6 hrs) x 50% x ₹ 25)

= ₹150 + ₹37.5 = ₹187.5

Earning under Rowan Plan

Total Wages

$= (\text{Time taken} \times \text{Time Rate}) + (\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Time Rate})$

$= (6 \text{ hrs} \times ₹ 25) + (\frac{(9 \text{ hrs} - 6 \text{ hrs})}{9 \text{ hrs}} \times 6 \text{ hrs} \times ₹ 25)$

= ₹150 + ₹50 = ₹200

Note: Rowan Plan is more beneficial for a worker since he is more earning under this plan i.e. 200-187.5 = ₹ 12.50

Question 3

(a) A chemical compound manufactured through two processes namely Process X and Process Y. Process Y is dependent on the output generated by Process X and the semi-finished chemical compound received from Process X shall be mixed up with further materials in Process Y. The details of costs and other particulars for each process are given as follows:

	Process X	*Process Y*
Direct Material	*1,000 kgs @ ₹ 50 per kg*	*700 kgs @ ₹ 90 per kg*
Direct Labour ₹ 35,000	*₹ 35,000*	*₹ 25,000*
Process Plant time	*200 hrs @ ₹ 60/hr*	*120 hrs @ ₹ 80/hr*
Expected output	*75% of input*	*80% of input*
Actual output kgs	*700*	*1150*
Realizable value of Normal Loss	*₹ 8 per kg*	*₹ 5per kg*

Notes:

(i) The departmental overhead for the period was 30,000 and is absorbed in each process on direct labour cost.

(ii) Process plant time represents the attributable plant run time with respect to each process and is a part of direct process cost.

(iii) Assume no finished stock and work in progress either at the beginning and end of the period.

Required:

Prepare Process X Account, Process Y Account, Normal Loss Account and Abnormal Gain Account. ***(2 + 2 + 2 + 2 = 8 Marks)***

(b) SW Limited manufactures Lenin bed covers. The present cost data are as below:

Variable Cost of manufacturing per unit	*:*	*₹ 200*
Variable cost of selling and distribution per unit	*:*	*₹ 100*
Fixed costs	*:*	*₹ 16,00,000*
Selling price per unit	*:*	*₹ 800*
Expected Profit for the coming year	*:*	*₹ 8,00,000*

The management could sense a stage of stagnation/deterioration in future sales with the new entrant RK Enterprises. The SW limited has approached to one marketing consulting firm for the study of cost volume profit analysis. The firm suggested three alternatives to fuel the sales growth by tinkering with the selling price.

Alternatives	*Reduce selling price %*	*Projected increase in sales (units) % (from the sales level that would generate ₹ 8,00,000 profit)*
1	*10.00*	*15*
2	*12.50*	*20*
3	*15.00*	*25*

Required:

Calculate the effect on profits under each alternative and recommend which alternative is most likely to be adopted to get the maximum profit.

(6 Marks)

Answer

(a) **Process X Account**

Particulars	Kg	Amount (₹)	Particulars	Kg	Amount (₹)
To Material	1,000	50,000	By Normal Loss (250 kg × ₹8 per kg)	250	2,000
To Direct Labour		35,000	By Abnormal loss A/c (50 kg × ₹ 150 per kg)	50	7,500
To Process Plant Time 200 hrs @ ₹ 60/hr		12,000	By Process Y (700 kg × ₹ 150 per kg)	700	1,05,000
To Departmental Overhead		17,500			
	1,000	1,14,500		1,000	1,14,500

$$\text{Cost per kg} = \frac{₹\ 1,14,500 - ₹\ 2,000}{1,000\ \text{kg} - 250\ \text{kg}} = ₹150.00 \text{ per kg}$$

Process Y Account

Particulars	Kg	Amount (₹)	Particulars	Kg	Amount (₹)
To Process X	700	1,05,000	By Normal Loss (280 kg × ₹ 5 per kg)	280	1,400
To Material	700	63,000	By Finished stock (1,150 kg × ₹190.803 per kg)	1,150	2,19,424
To Direct Labour		25,000			
To Process Plant Time 120 hrs @₹ 80/hr		9,600			

To Departmental Overheads		12,500			
To Abnormal Gain A/c (30 kg × ₹ 190.803 per kg)	30	5,724			
	1,430	2,20,824		1,430	2,20,824

Cost per kg = $\frac{₹\ 2,15,100 - ₹\ 1,400}{1,400\ kg - 280\ kg}$ = ₹190.803 per kg

Normal Loss Account

Particulars	Units	Amount (₹)	Particulars	Units	Amount (₹)
To Process X A/c	250	2,000	By Cash (Sales) (250 kg × ₹8 per kg)	250	2,000
To Process Y A/c	280	1,400	By Cash (Sales) (250 kg × ₹5 per kg)	250	1,250
			By Abnormal Gain A/c (30 kg × ₹5 per kg)	30	150
	430	3,400		430	3,400

Abnormal Gain Account

Particulars	Units	Amount (₹)	Particulars	Units	Amount (₹)
To Normal Loss (30 kg × ₹ 5 per kg)	30	150	By Process Y A/c	30	5,724
To Costing Profit and Loss		5,574			
	30	5,724		30	5,724

(b) Calculation of Profit under each Alternative

Particulars	Present Situation (₹)	Alternative 1 (₹)	Alternative 2 (₹)	Alternative 3 (₹)
Selling Price per unit	800	720	700	680
Less: Variable Cost per unit				
Manufacturing Cost	200	200	200	200
Selling and Distribution Cost	100	100	100	100
Contribution per unit	**500**	**420**	**400**	**380**
No. of units sold	4,800	5,520	5,760	6,000
Total Contribution	24,00,000	23,18,400	23,04,000	22,80,000
Less: Fixed Cost	16,00,000	16,00,000	16,00,000	16,00,000
Profit	8,00,000	**7,18,400**	**7,04,000**	**6,80,000**
Change in profit		(81,600)	(96,000)	(1,20,000)
Percentage change in profit		-10.2%	-12%	-15%

Among the various alternatives, alternative 1 is giving maximum profit. However, in each of the alternative (alternative 1,2,3) maximum profit is reducing. Accordingly, SW limited should continue to sell at current selling price to get the maximum profit.

Question 4

(a) XYZ Transport is running a bus between town A and town B which are 25 kms apart. The bus will make 4 round trips every day carrying on an average 30 passengers on each trip. The bus costs the company a sum of ₹ 5,00,000. It has been insured at 2% per annum and the annual tax will amount to ₹ 2,000 and the garage rent is ₹ 500 per month. Annual repairs will be ₹ 8,000 and the bus is likely to last for 5 years. The driver's salary will be ₹ 15,000 per month and the conductor's salary will be ₹ 12,000 per month in addition to 10% of the takings as commission (to be shared by the driver and conductor equally). Cost of stationery will be ₹ 800 per month. Manager-cum-accountant's salary is ₹ 35,000 per month. Petrol and Oil will

be ₹ 1,000 per 100 km. Assuming 15% profit on takings. Depreciation will be charged at straight line method.

You are required to calculate the bus fare to be charged for per passenger kilometer. The bus will run on an average 25 days in a month.

(b) *LMN Foods is a manufacturer of organic snacks. For the year ending 2023, the company compiled the following financial data:* ***(8 Marks)***

Item	*Amount (in ₹)*
Opening inventory of raw materials	*2,00,000*
Closing inventory of raw materials	*2,50,000*
Raw material purchases	*12,00,000*
Labour costs	*5,00,000*
Production overheads	*2,50,000*
Marketing and distribution expenses	*1,52,000*

In 2024, LMN Foods accepted a request for a bulk supply of their best-selling snacks. The estimated costs for fulfilling this order are as follows:

- *Estimated raw material cost: ₹ 3,00,000*
- *Estimated labour cost: ₹ 1,50,000*
- *Packaging and transportation costs: ₹ 49,400*

LMN Foods allocates production overhead based on direct labour costs and marketing and distribution expenses as a percentage of the total production cost based on the previous year's data.

Required:

(i) *Calculate the overhead recovery rates for 2023 based on actual costs.*

(2 Marks)

(ii) *Prepare a comprehensive cost statement for the bulk order and determine the Sales required for achieving a profit margin of 20% on the final sales amount.* ***(4 Marks)***

Answer

(a) Statement of Cost per Passenger – Km

Particulars	Cost per annum (₹)	Per month (₹)
Standing Charges (A):		
Taxes	2,000	
Insurance (5,00,000 × 0.02)	10,000	
Garage Rent (500 × 12)	6,000	
Salary of Driver (15,000× 12)	1,80,000	
Salary of Conductor (12,000× 12)	1,44,000	
Stationery (800 × 12)	9,600	
Salary of Manager cum Accountant (35,000 × 12)	4,20,000	
Total	7,71,600	
Monthly Standing Charges: (7,71,600/12)		64,300.00
Running Charges (B):		
Depreciation [(5,00,000/5/12]		8,333.33
Diesel and oil [(4 × 2 × 25 × 25) × 10]		50,000.00
Monthly Running Charges		58,333.33
Maintenance Charges (C):		
Repairs	8,000	666.67
Total cost before commission		1,23,300.00
Commission: (D)		16,440.00
Total cost (A+B+C+D)		1,39,740.00
Profit		24,660.00
Total takings (Total Cost + Profit)		**1,64,400.00**

Total passenger-km = 4 × 2 × 25 × 25 × 30 = 1,50,000 passenger km

Hence, Fare per passenger-km = 1,64,400.00/ 1,50,000 = ₹ 1.09

Working Note:

Calculation of Commission and Profit:

Let total takings = ₹ x

Commission = 0.10 x

Profit = 0.15 x

Takings = Cost before commission and profit + Commission + Profit

Therefore, x = 1,23,300 + 0.10 x + 0.15 x

0.75x = 1,23,300

x = ₹ 1,64,400

Commission = 0.10 × ₹ 1,64,400 = ₹ 16,440

Profit = 0.15 × ₹ 1,64,400 = ₹ 24,660

(b) (i) Calculation of Overhead Recovery Rate:

Production Overhead recovery rate based on Direct Labour Costs

$$= \frac{\text{Production Overhead}}{\text{Direct Labour Cost}} \times 100$$

$$= \frac{2,50,000}{5,00,000} \times 100 \quad = 50\% \text{ of Direct Labour}$$

Marketing & Distribution Overhead recovery rate based on Total Production Costs

$$= \frac{\text{Marketing \& Distribution Overhead}}{\text{Total Production Cost}} \times 100$$

$$= \frac{1,52,000}{19,00,000} \times 100 = 8\% \text{ of Total Production Costs}$$

Working Note:

Statement showing Total Cost for 2023

Particulars	**Amount (₹)**
Opening stock of raw material	2,00,000
Add: Purchases	12,00,000

Less: Closing stock of raw material	(2,50,000)
Direct Material Consumed	11,50,000
Direct Labour Cost	5,00,000
Prime Cost	16,50,000
Add: Production Overhead	2,50,000
Production cost	19,00,000
Add: Marketing & Distribution Cost	1,52,000
Total Cost	20,52,000

(ii) Cost Statement for the Bulk Order and Determination of Sales in 2024:

Particulars	**Amount (₹)**
Direct Material Cost	3,00,000
Direct Labour Cost	1,50,000
Prime Cost	4,50,000
Add: Production Overhead (50% of Direct Labour Cost)	75,000
Production cost	5,25,000
Add: Marketing & Distribution Cost (8% of Production Cost)	42,000
Packaging and Transportation Costs	49,400
Total Cost	6,16,400
Add: Profit @ 25% on cost	1,54,100
Sales value (Price to be quoted for the order)	7,70,500

Hence the price to be quoted is ₹7,70,500

Question 5

(a) The following information has been provided by a company:

Number of units produced and sold : 7,000

Standard labour rate per hour : ₹9

Actual hours worked : *17,820 hours*

Labour efficiency : *106.8%*

Labour rate variance : *71,280 (A)*

You are required to calculate :

(i) Actual labour rate per hour ***(1 Marks)***

(ii) Standard hours required for 7,000 units ***(2 Marks)***

(iii) Labour Efficiency variance ***(1 Marks)***

(iv) Standard labour cost per unit ***(1 Marks)***

(v) Actual labour cost per unit ***(1 Marks)***

(b) Journalise the following transactions assuming that cost and financial accounts are integrated: ***(4 Marks)***

Particulars	*Amount (in ₹)*
Wages paid (20% indirect)	*2,00,000*
Selling and Distribution Overheads incurred	*50,000*
Deficiency found in stock of Raw Material (Normal)	*80,000*
Factory Overheads (Under Absorbed)	*60,000*

(c) Define spoiled work and defective work and discuss the treatment of defective work in the following circumstances: ***(1 + 3 Marks)***

Circumstances	*Treatment*
Where a percentage of defective work is allowed in a particular batch as it cannot be avoided.	
Where the defect is due to bad workmanship	
Where defect is due to the Inspection Department wrongly accepting incoming material of poor quality.	

Answer

(a) (i) Actual Hours Worked 17,820

Standard Rate Per hour 9

Labour Rate Variance 71280 (A)

Labour Rate Variance = (Standard Rate – Actual Rate) Actual Hours

(9 – Actual Rate) 17,820 = -71,280

(9 – Actual Rate) = - 4

Actual Rate = 13

(ii) Labour Efficiency $= \frac{\text{Standard Hours x 100}}{\text{Actual Hours}}$

106.8% $= \frac{\text{Standard Hours}}{17,820}$

Standard Hours = 19,031.76

(iii) Labour Efficiency Variance = (Standard Hours – Actual Hours) x Standard Rate

= (19,031.76 – 17,820) x 9

= 10,905.84 (F)

(iv) Standard Labour Cost per unit $= \frac{19,031.76 \times 9}{7,000} = 24.47$

(v) Actual Labour cost per unit $= \frac{17,820 \times 13}{7,000} = 33.09$

(b) Journal Entries under Integrated system of accounting

Particulars		(₹)	(₹)
(i) Work-in Progress Ledger Control A/c	Dr.	1,60,000	
Factory Overhead control A/c	Dr.	40,000	
To Wages Control A/c			2,00,000
(Being allocation of Direct and Indirect wages)			
(ii) Wages Control A/c	Dr.	2,00,000	
To Bank A/c			2,00,000
(Being wages paid)			
(iii) Cost of Sales A/c	Dr.	50,000	
To Selling & Distribution Overhead Control A/c			50,000
(Being selling & distribution overhead allocated*)*			

(iv)	Selling & Distribution Overhead Control A/c	Dr.	50,000	
	To Bank A/c			50,000
	(Being selling & distribution overhead *paid)*			
(v)	Factory overhead control A/c	Dr.	80,000	
	To Stores Ledger Control A/c			80,000
	(Being normal deficiency found in stock of raw material)			
(vi)	Costing Profit & Loss A/c	Dr.	60,000	
	To Factory Overhead Control A/c			60,000
	(Being transfer of under absorption of factory overhead)			

(c) Spoiled work is the quantity of production that has been totally rejected and cannot be rectified.

Defective work refers to production that is not as perfect as the saleable product but is capable of being rectified and brought to the required degree of perfection provided some additional expenditure is incurred

Circumstances	Treatment
Where a percentage of defective work is allowed in a particular batch as it cannot be avoided.	If the actual number of defectives is within the normal limit or is near thereto **the cost of rectification will be charged to the whole job and spread over the entire output of the batch**. If, on the other hand, the number of defective units substantially exceeds the normal, the cost of rectification of the number which exceeds the normal will be written off as a loss in the Costing Profit and Loss Account.
Where the defect is due to bad workmanship.	In this case cost of rectification will be abnormal cost and **shall be written off as a loss.** However, if the management did provide for a certain proportion of defectives on account of bad workmanship as an unavoidable feature of production. If that be the case, the cost

	of rectifying to the extent provided for by the management will be treated as a normal cost and charged to the batch.
Where defect is due to the Inspection Department wrongly accepting incoming material of poor quality.	In this case the **cost of rectification will be charged to the department and will not be considered as cost of manufacture of the batch.** Being an abnormal cost, it will be written off to the Costing Profit and Loss Account.

Question 6

(a) Explain the steps involved in procedure for reconciliation of Cost & Financial accounts. Also explain the circumstances where reconciliation statement can be avoided. ***(3+2 = 5 Marks)***

(b) State cost unit of the following Industry Sector:

Industry Sector	*Cost Unit*
Oil	
Professional services	
Education	
Brick-making	
Education	
Brick-making	
Engineering	
Electricity	
Hotel/Catering	
Coal mining	
Brewing	
Hospitals	

(5 Marks)

(c) Explain the methods that can be used for controlling Selling and Distribution Overheads. ***(4 Marks)***

OR

(c) Suggest any one basis of re-apportionment of service department overheads over production departments in the following contexts:

Cost of the Service Departments	*Basis*
Planning and progress	
Transport Department	
Personnel Department	
Fire Protection	
Power House (electric lighting cost)	
Computer Section	
Canteen and Welfare	
Hospital and Dispensary	

(4 Marks)

Answer

(a) There are 3 steps involved in the procedure for reconciliation.

i. Ascertainment of profit as per Financial Accounts

ii. Ascertainment of profit as per Cost Accounts

iii. Reconciliation of both the profits

Circumstances where reconciliation statement can be avoided: When the Cost and Financial Accounts are integrated - there is no need to have a separate reconciliation statement between the two sets of accounts. Integration means that the same set of accounts fulfil the requirement of both i.e., Cost and Financial Accounts.

(b)

Service industry	**Cost Unit**
Oil	Cost per barrel, Cost per gallon/litre
Professional Services	Per service/project, per hour

Education	Per course, per student, per batch, per lecture etc.
Brick-making	Per brick, per thousand bricks
Engineering	Per project, per hour, per job, per contract
Electricity	Per kilowatt-hour (kWh)
Hotel/Catering	Guest Days or Room Days, Per item, per meal etc.
Coal Mining	Per ton, per quintal
Brewing	per gallon/litre, per barrel
Hospital	Patient per day, room per day or per bed, per operation etc.

(c) The problem of controlling selling & distribution overheads can be tackled by adopting the following steps:

(a) Comparison with past performance - Comparing the figures of selling & distribution overhead with the figures of previous period.

(b) Budgetary Control-Selling & distribution overhead budgets may be used to control such overhead expenses by making a comparison of budgetary figures with actual figures of overhead expenses, ascertaining variances and finally taking suitable actions,

(c) Standard Costing - Standards of selling & distribution expenses may be set up for salesmen, territories, products etc. The laid down standards on comparison with actual overhead expenses will reveal variances, which can be controlled by suitable action.

OR

(c)

Cost of the Service Departments	**Basis**
Planning and progress	Direct labour hours, Machine hours, Direct labour wages, Asset value x Hours worked
Transport Department	Crane hours, Truck hours, Truck mileage, Truck tonnage, Truck ton-

	hours, Tonnage handled. No. of packages of Standard size
Personnel Department	No of direct workers No. of employees etc.
Fire Protection	Capital values
Power House (electric lighting cost)	Floor area, Cubic content, No. of electric Points, Wattage.
Computer Section	Computer hours, Specific allocation to departments
Canteen and Welfare	No of direct workers No. of employees etc.
Hospital and Dispensary	No of direct workers No. of employees etc.