SUGGESTED ANSWERS JANUARY 2026

PAPER 4: COST AND MANAGEMENT ACCOUNTING - INTERMEDIATE COURSE

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Part I - Multiple Choice Questions

Case Scenario - I

Zed Manufacturing Ltd. produces three different types of specialized products namely X, Y and Z. The following information has been collected from their books of accounts for the year ended March 2025:

Particulars	***Products***		
	X	***Y***	***Z***
Sales (in ₹)	*40,00,000*	*23,80,000*	*16,20,000*
Selling Price per unit (in ₹)	*500*	*700*	*400*
Variable Cost per unit (in ₹)	*250*	*420*	*240*

Total fixed costs: ₹ 18,00,000

Zed Manufacturing Ltd. is currently discussing proposals to maintain a sales mix ratio, to discontinue the manufacturing of Product Z and replace it with a new product - Product W in anticipation of following results:

	Products		
Particulars	***X***	***Y***	***W***
Sales Mix Ratio	*55%*	*30%*	*15%*
Selling Price per unit (in ₹)	*500*	*700*	*500*
Variable Cost per unit (in ₹)	*250*	*420*	*250*

Total fixed costs: ₹ 18,80,000

Total sales: ₹ 85,00,000

Based on the above, you are required to calculate the following (MCQ 1 to 5):

1. *What is the combined contribution-to-sales (C/S) ratio at the exiting sales level?*

   (A) 37.5%

   (B) 40%

(C) 32.5%

(D) 45% **(2 Marks)**

2. What is the total profit at the existing sales level?

(A) ₹ 18,00,000

(B) ₹ 32,00,000

(C) ₹ 36,00,000

(D) ₹ 16,00,000 **(2 Marks)**

3. What is the new contribution-to-sales (C/S) ratio in the proposed situation (with Product W)?

(A) 38.5%

(B) 35%

(C) 47%

(D) 40.5% **(2 Marks)**

4. What is the break-even sales at the level of proposed sales mix (with Product W)?

(A) ₹ 40,75,000

(B) ₹ 40,00,000

(C) ₹ 48,83,117

(D) ₹ 53,80,000 **(2 Marks)**

5. What is the total profit at the level of proposed sales mix (with Product W)?

(A) ₹ 10,95,000

(B) ₹ 21,15,000

(C) ₹ 15,62,500

(D) ₹ 19,60,000 **(2 Marks)**

Case Scenario - II

Spice Guard Ltd. manufactures 'Pepper Spray' that is used by women for their self-defence. As per the estimates, there will be an average quarterly total market demand of 3,125 units of 'Pepper Spray'. Spice Guard Ltd. is expected to have 8% market share of the total market demand of the 'Pepper Spray'.

The company produces the 'Pepper Spray' using two raw materials - 'OC' and 'OE'. Each unit of pepper spray requires 4 kgs. of 'OC' and 1.6 kgs. of 'OE'.

	'OC'	*'OE'*
Ordering Cost per order	*₹ 3,125*	*₹ 500*
Storage rate	*5% per annum*	*₹ 2.5 per kg. per month*
Interest rate	*13% per annum*	*1.25% per quarter*
Obsolescence rate	*2% per annum*	*-*
Raw material price	*₹ 2,000 per kg.*	*₹200 per kg.*

On the basis of above case scenario, you are required to answer the following (MCQs 6 to 10):

6. *What is the annual demand for raw material 'OC' and 'OE'?*

   (A) 1,000 kgs & 400 kgs respectively.

   (B) 4,000 kgs & 1,600 kgs respectively

   (C) 12,500 kgs & 5,000 kgs respectively.

   (D) 50,000 kgs & 20,000 kgs respectively ***(2 Marks)***

7. *What is the Economic Order Quantity (EOQ) in kgs. for raw material 'OE' required by Spice Guard Ltd.?*

   (A) 200 kgs.

   (B) 500 kgs.

   (C) 400 kgs.

   (D) 231 kgs. ***(2 Marks)***

8. *What is the Economic Order Quantity (EOQ) in kgs. for raw material 'OC' required by Spice Guard Ltd. and number of orders to be placed in a year?*

   (A) 210 kgs. and 19 orders

   (B) 250 kgs. and 16 orders

   (C) 200 kgs. and 20 orders

   (D) 400 kgs and 10 orders ***(2 Marks)***

9. *What is the total annual cost of raw material 'OC' at Economic Order Quantity (EOQ) level?*

   (A) ₹81,20,000

   (C) ₹81,00,000

   (B) ₹80,00,000

   (D) ₹80,40,000 ***(2 Marks)***

10. *What is the total annual cost of 'OC,' if the company proposes to keep order size to 200 kgs. of 'OC' per order?*

    (A) ₹81,00,000

    (B) ₹80,80,000

    (C) ₹81,25,000

    (D) ₹81,02,500 ***(2 Marks)***

11. *A company's wage budget for the last month was based on a standard production time of 30 minutes per unit and a standard wage rate of ₹50 per hour.*

    During the last month, it produced 30,000 units. The labour rate variance was ₹7,500 adverse and the labour efficiency variance was nil.

    What is the actual wage rate per unit during the last month?

    (A) ₹50.00

    (B) ₹25.50

    (C) ₹50.50

    (D) ₹25.25 ***(2 Marks)***

12. *T Ltd., a textile manufacturing company, recovers factory overheads on a fixed percentage basis on direct wages and administrative overheads at 25% on factory cost.*

    The company has furnished the following data for Job 201:

    Direct materials are ₹56,350, Direct wages are ₹45,000, Sales are ₹1,90,000 and profit is 25% on total cost.

    What is the percentage recovery rate for factory overheads for Job 201?

    (A) 35%

    (B) 40%

(C) 45%

(D) 50% ***(2 Marks)***

13. *A garment factory stitches each shirt through a single hand sewing machine operator. The sewing time required to stitch each shirt is 15 minutes. Operator is paid at ₹ 65 per hour. The factory works for 40 hours per week and the production target is 480 dozens of shirts per week.*

What is the number of hours and the number of operators required to meet the shirts target?

(A) 1,800 Hours & 45 Operators

(B) 1,440 Hours & 36 Operators

(C) 1,800 Hours & 36 Operators

(D) 1,440 Hours & 40 Operators ***(2 Marks)***

14. *In a factory, during the month of October 2025, the following transactions have occurred in respect of purchase and issue of "Material A."*

Material A

Stock on 01.10.2025, 100 units at ₹ 50 per unit

Purchases:

05-10-2025, 2,500 units at ₹ 55 per unit

08-10-2025, 600 units at ₹ 56 per unit

Issues:

15-10-2025, 1,500 units

What is the value of material A consumed during the period, using LIFO method of pricing issues?

(A) ₹ 83,100

(B) ₹ 82,000

(C) ₹ 82,500

(D) ₹ 84,000 ***(2 Marks)***

15. *The following information has been given regarding the two machines of a manufacturing department of X Ltd. for the month of September 2025.*

Particulars	*Total cost*	*Machine A*	*Machine B*
Spare parts cost (in ₹)	*1,00,000*	*40,000*	*60,000*

Further estimates for the month of October 2025:

(i) There is an increase of 15% in the prices of spare parts of both machines.

(ii) There is an increase of 25% in the consumption of spare parts for machine B only.

What is the total spare parts cost for the month of October 2025?

(A) ₹ 1,25,000

(B) ₹ 1,43,750

(C) ₹ 1,26,500

(D) ₹ 1,32,250 ***(2 Marks)***

Answer Key

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

Part II – Descriptive Questions

*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) ABC Limited manufactures four products A, B, C and D in the same factory. The following information is given for a certain period:

Particulars	***A***	***B***	***C***	***D***
Input Materials (in units)	*600*	*400*	*400*	*200*
Average Yield	*80%*	*90%*	*96%*	*72%*

The finished goods' packaging cost is ₹4,600.

Other information:

(1) All the products are packed in boxes where each box is having capacity of 24 units.

(2) Product A and product B are packed in larger boxes whereas product C and product D are packed in smaller boxes, which cost half the price of bigger box.

(3) Each box contains only one type of product. There is no product mix up in packaging.

You are required to:

(i) Find out how many large and small boxes are used.

(ii) Find out the cost of per large box and per small box.

(iii) Allocate the packaging cost among the four finished products. ***(5 Marks)***

(b) ECO Cotton Limited manufactures two joint products Cotton Fiber, Cotton Seed and a by-product Cotton Linters by processing a raw cotton,

The joint processing costs are ₹ 1,46,100.

Joint products can be further processed and sold at a higher market price, with some sales promotion efforts whereas, by-product Cotton Linters can be sold only after further processing.

The relevant details of three products are as follows:

Particulars	***Cotton Fiber***	***Cotton Seed***	***Cotton Linters***
Output (in kgs.)	*2,800*	*1,800*	*300*
Selling price at the split -off point (per kg.)	*₹ 90*	*₹ 60*	*-*
Further processing cost (per kg.)	*₹ 9*	*₹ 6*	*₹ 2*
Further marketing cost (per kg.)	*₹ 5*	*₹ 2*	*₹ 1*
Selling price after further processing (per kg.)	*₹ 110*	*₹ 67*	*₹ 10*

You are required to: -

(i) Show how joint cost would be apportioned between Cotton Fiber and Cotton Seed using the sales value at split-off, after crediting net realisable value of by-product Cotton Linters.

(ii) Determine the total profit or loss if the joint products are sold without further processing.

(iii) Which of the joint products can be processed further for maximizing profits using incremental analysis of profit? ***(5 Marks)***

(c) Worker 'X' of M/s ABC Manufacturing Ltd, was assigned a Job no 101. He began the job on 1st June at 9:00 A.M. and completed on 4th June at 12:00 P.M. There are 9 working hours in a day from 9:00 A.M. onwards. Work done and approved was 1,800 units.

Other information:

Standard quantity per hour : 45 units per hour

Wage rate : ₹ 150 per hour

Bonus (Halsey plan) : 50% of time saved

You are required to calculate the remuneration of worker X on the basis of Halsey plan and Rowan Plan. ***(4 Marks)***

Answer

(a) (i) Calculation of Output Units and Boxes required

Product	A	B	C	D
Input Units	600	400	400	200
Yield %	80%	90%	96%	72%
Output Units	480	360	384	144
Boxes Required*	20	15	16	6

* Capacity per box = 24 units

Large boxes used = 20 + 15 = 35

Small boxes used = 16 + 6 = 22

(ii) Let Cost of one small box = ₹ x and Cost of one large box = ₹ 2x

35(2x) + 22x = ₹4,600

70x + 22x = ₹4,600

Cost of one small box 'x' = ₹ 50

Cost of one large box '2x' = ₹ 100

(iii) Allocation of Packaging Cost

Product	Boxes	Cost per Box	Packaging Cost (₹)
A	20 (Large)	100	2,000
B	15 (Large)	100	1,500
C	16 (Small)	50	800
D	6 (Small)	50	300
Total			**4,600**

(b) Working Note:

Calculation of Net Realizable value of By-Product:

Particulars	
Selling Price after further processing (₹)	10
Less: Further Marketing Cost (₹)	1

Less: Further Processing Cost (₹)	2
Net Realisable Value (₹ 10 - ₹ 3)	7
Quantity (Kgs)	300
Net Realisable Value of By-Product (300 kg@₹7) (₹)	2,100

Calculation of Net joint costs to be apportioned:

Particulars	Amount (₹)
Joint Costs	1,46,100
Less: Net Realizable value of by-product	2,100
Net joint costs to be apportioned	1,44,000

(i) Statement showing apportionment of Joint Cost between Cotton fiber and Cotton Seed using sales value at split-off point

Product	Cotton Fibre	Cotton Seeds
Quantity (in Kgs)	2,800	1800
Selling Price at Split-off point (per kg) (₹)	90	60
Sales Value at Split off point (₹)	2,52,000	1,08,000
Joint Cost Apportioned (₹ 1,44,000)	1,00,800	43,200

(ii) Statement showing Profit or loss if the Joint Products are Sold Without further Processing

Product	Cotton Fibre	Cotton Seeds	Total
Sales Value at Split off point (₹)	2,52,000	1,08,000	3,60,000
Less: Joint Cost Apportioned (₹1,44,000)	1,00,800	43,200	1,44,000
Profit	1,51,200	64,800	2,16,000

(iii) Statement of increment profit/loss to decide further processing

Product	Cotton Fibre	Cotton Seeds
Incremental Revenue	56,000 [(110-90) × 2,800]	12,600 [(67-60) × 1,800]
Less: Further processing cost	39,200 (9+5) x 2800	14,400 (6+2) x 1800
Incremental profit /(loss)	**16,800**	**(1,800)**

Increment Profit/(loos) can be presented on unit basis also.

It is advisable to further process only product Cotton Fibre and to sale product Cotton Seeds at the point of separation**.**

(c) Time allowed (Standard Time) $= \frac{1{,}800 \text{ units}}{45 \text{ units per hour}} = 40$ hours

Time taken = 30 hours (9+9+9+3)

Time saved = 10 hour

Rate = ₹ 150 per hour

Total Remuneration of Worker X (under 50% Halsey Scheme)

= Hours worked × Rate per hour + ½ × time saved × Rate per hour

= 30 hours × ₹ 150 + ½ × 10 hour × ₹150

= ₹ 5,250

Total Remuneration of Worker X (under Rowan Scheme)

$= \text{Hours worked} \times \text{Rate per hour} + \frac{\text{Time taken}}{\text{Time allowed}} \times \text{Time saved} \times \text{Rate}$

$= 30 \text{ hours} \times ₹150 + \frac{30 \text{ hours}}{40 \text{ hours}} \times 10 \text{ hour} \times ₹150$

= ₹ 5,625

Question 2

(a) Dhol Makers Ltd. sold 6,000 units of a musical instrument "Dholak",

The cost data for the year ended 31st March, 2025 is as follows:

Particulars	***(₹)***
Expenses paid for pollution control and maintenance	*93,400*
Expenses paid for quality control check activities	*70,000*
Lease rent of production assets	*1,20,000*
Hire charges paid for hiring specific equipment	*315 per hour*
Primary packing cost	*51,600*
Direct Labour Wages	*6,00,000*
Fee paid for technical assistance	*1,26,000*
Opening stock of finished goods as on 1st April, 2024 (2,000 units)	*10,10,000*
Closing stock of finished goods as on 31st March, 2025 (1,000 units)	*?*
Cost of production	*27,50,000*

It is further ascertained that:

(1) Labour is paid @ ₹ 1,000 per labour hour.

(2) Specific equipment is hired for the number of labour hours worked.

(3) The company follows the 'First-In, First-Out' (FIFO) method for closing stock valuation.

(4) Selling and distribution overhead is ₹ 25 per dholak.

(5) Profit is 20% on sales.

You are required to prepare a cost sheet showing:

(i) Raw material consumed

(ii) Prime cost

(iii) Works/Factory cost

(iv) Cost of goods sold

(v) Cost of sales

(vi) Net profit & Sales ***(9 Marks)***

(b) A producer of oils purchases 400 litres of oil at ₹ 75 per litre in containers of 40 litres each. Other expenses at the process were ₹ 37,350 including an abnormal loss of ₹ 12,500 due to an accident. Normal waste at the process is 10%. Waste is sold at ₹ 10 per litre and each empty container is sold for ₹ 50. Generally, 10% of containers gets damaged so badly that they became unsalable. However, in the given situation, more containers were damaged and only 5 containers were in saleable condition. Actual output was 375 litres which is sold at a profit of 20% on cost.

You are required to prepare Process Account and Income Statement.

(5 Marks)

Answer

(a) Cost Sheet of Dhol Makers Ltd. for the year ended 31st March, 2025

Sl. No.	Particulars	(₹)	(₹)
(i)	Material Consumed (see working note 3)		15,00,000
(ii)	Direct Labour Wages		6,00,000
(iii)	Direct expenses:		
	Hire Charges paid for hiring specific equipment (₹ 315 per hour x 600 labour hours worked) (see working note 1)	1,89,000	
	Fees paid for technical assistance	1,26,000	3,15,000
	Prime Cost		**24,15,000**
(iv)	Works/Factory overheads:		
	Lease rent of production assets	1,20,000	
	Expenses paid for pollution control and maintenance	93,400	2,13,400
	Works/Factory Cost		**26,28,400**
(v)	*Add:* Expenses paid for quality control check activities		70,000
(vi)	*Add:* Primary packing cost		51,600
	Cost of Production (Given)		**27,50,000**

	Add: Opening stock of finished goods (2,000 units)		10,10,000
	Less: Closing stock of finished goods ($\frac{₹\ 27,50,000}{5,000\ units}$ X 1,000 units)		(5,50,000)
	Cost of Goods Sold		**32,10,000**
(vii)	Selling and Distribution Overheads (₹ 25 per unit x 6,000 units sold)		1,50,000
	Cost of Sales		**33,60,000**
	Profit (20% on sales or 25% on cost)		**8,40,000**
	Sales		**42,00,000**

Working Notes:

1. Calculation of No. of Direct Labour Hours worked

   = Direct Labour Wages/Labour Rate per hour

   = ₹ 6,00,000/₹ 1,000 per hour

   = 600 Direct Labour Hours

2. Calculation of No. of units produced:

Particulars	**Units**
No. of units sold	6,000
Add: No. of units of closing stock of finished goods	1,000
Less: No. of units opening stock of finished goods	(2,000)
No. of units produced	5,000

3. Value of Raw Material Consumed:

Particulars	**(₹)**	**(₹)**
Cost of Production		27,50,000
Less: Expenses paid for quality control check activities		(70,000)
Less: Primary packing cost		(51,600)
Works/Factory Cost		26,28,400

Less: Works/ Factory overheads:		
Lease rent of production assets	1,20,000	
Expenses paid for pollution control and maintenance	93,400	(2,13,400)
Prime Cost		24,15,000
Less: Direct expenses:		
Hire Charges paid for hiring specific equipment (₹ 315 per hour x 600 labour hours worked) (see working note 1)	1,89,000	
Fees paid for technical assistance	1,26,000	(3,15,000)
Less: Direct Labour Wages		(6,00,000)
Value of Material Consumed		**15,00,000**

(b) **Process Account**

Particulars	Container	Oil Litre	(₹)	Particulars	Container	Oil Litre	(₹)
To Material @ ₹ 75 per litre	10	400	30,000	By Normal loss oil (10% of 400 litres) × ₹ 10 per litre		40	400
To other Expenses (37,350-12,500)	-	-	24,850	By Normal loss Container	1	-	-
To Abnormal gain (₹ 150 × 15 litres)	-	15	2,250	By Abnormal loss (Container)	4	-	200
				By Sale of Container @ ₹ 50 per container	5	-	250
				By Output (₹150 × 375 litres)	-	375	56,250
	10	**415**	**57,100**		**10**	**415**	**57,100**

Cost per unit of completed units and abnormal gain:

$$\frac{\text{Total Cost-Realisable value from normal loss-Realisable value of Container}}{\text{Inputs units-Normal loss units}}$$

$$= \frac{₹\ 54,850 - ₹\ 400 - ₹\ 450}{400 \text{ litres-40 litres}} \quad = \frac{54,000}{360 \text{ litress}} = ₹\ 150 \text{ per litre}$$

Income Statement

Particulars	(₹)	Particulars	(₹)
To Cost of sales (₹ 150 × 375 litres)	56,250	By Sales	67,500
To Abnormal loss (Container)	200	By Abnormal gain {15 litres × (₹ 150 – ₹ 10)}	2,100
To Abnormal loss (accidental loss-given)	12,500		
To Net Profit	650		
	69,600		**69,600**

Question 3

(a) Gold Drive bank is having a branch which is engaged in processing of 'Gold Loan' and 'Car Loan' applications in addition to other services to customers.

The bank has hired three direct professional workers for processing 'Gold Loan' applications and four direct professional workers for processing 'Car Loan' applications.

In addition to above, following expenses are incurred by the branch:

(1) Branch manager who supervises all the activities of branch, is paid at ₹ 1,10,000 per month.

(2) Legal charges, printing & stationery and advertising expenses are incurred at ₹ 28,000, ₹ 15,000 and ₹ 20,000 respectively for a month.

(3) Other expenses are ₹ 51,000 per quarter.

(4) Depreciation on building is ₹ 4,20,000 per annum.

(5) Overhead costs of the branch allocable to processing of 'Gold Loan' applications and to 'Car Loan' applications is 20% & 15% respectively of total overhead costs of the branch.

Number of applications processed:

- *'Gold Loan' - 400 applications per month; and*
- *'Car Loan' - 500 applications per month.*

You are required to:

(i) Compute the total salary of direct professionals for processing of 'Gold Loan' and 'Car Loan' applications respectively, by assuming that cost of processing a 'Car Loan' application is same as 'Gold Loan' application.

(ii) Find out the total cost of processing a 'Car Loan' application. ***(8 Marks)***

(b) Wings Institute of Air-hostess training has reserved a spacious training hall for ₹ 25,000 on a weekly basis with a seating capacity of 320 trainees. The institute has designed an intensive training schedule comprising 3 training session per day, 5 days a week for 25 weeks, on aviation and hospitability.

Training delivered by the lead trainer to whom a honorarium of ₹ 3,600 per training session is paid. In addition, she receives travel reimbursement of ₹ 500 per day and refreshments costing ₹ 1,200 per week to maintain comfort and focus during sessions.

She also takes 2 lectures per week on safety and customer services during weekends only at ₹ 5,000 per lecture (inclusive of travelling and refreshment expenses), ensuring complete coverage of aviation education. Trainee support services covering utilities and essential training aids amount to ₹ 2,020 per week.

You are required to:

(i) Calculate the total cost per training batch.

(ii) Determine the minimum training fee per trainee in a batch to cover costs, if the batch is fully occupied.

(iii) If the institute targets 20% profit margin on the training fee and decides to charge ₹ 14,800 per trainee, then calculate minimum percentage of batch size to be filled. ***(6 Marks)***

Answer

(a) Let the Salary of one Direct Professional Be "x"

Particulars	**Total Monthly Cost (₹)**	**Gold loan Applications (₹)**	**Car loan Application (₹)**
Employee Cost		3x (₹ x × 3 Professionals)	4x (₹ x × 4 Professionals)

Apportionment of Branch manager's salary	110000	22,000	16,500
Legal charges, Printing & stationery and Advertising expenses	63000	12,600	9,450
Other expenses (51,000/3 quarters)	17000	3,400	2,550
Depreciation (4,20,000/12 months)	35000	7,000	5,250
Total cost per month		**45,000 + 3x**	**33,750 + 4x**
Number of Applications per month		400	500

(i) Computation of Salary of Direct Professionals

Cost per Car Loan application = Cost per Gold Loan application

$$\frac{3x + 45,000}{400} = \frac{4x + 33,750}{500}$$

1,500x + 2,25,00,000 = 1,600x + 1,35,00,000

Salary of Direct Professionals "x"= ₹ 90,000

Salary of Direct Professionals for Gold Loan applications = 3x = ₹ 2,70,000

Salary of Direct Professionals for Car Loan applications = 4x = ₹ 3,60,000

(ii) Computation of cost of processing a Car loan application:

Total Cost = 33,750 + 4x

= 33,750 + 3,60,000 = ₹ 3,93,750

Cost per Car Loan Application

$$= \frac{3,93,750}{500} = ₹ 787.50 \text{ per application}$$

(b) (i) Calculation of Total cost per batch

Particulars	**Amount (₹)**
Hall Charges (₹ 25,000 x 25)	6,25,000
Honorarium of instructor (₹ 3,600 x 3 x 5 x 25)	13,50,000
Reimbursement of travel expenses (₹ 500 x 5 x 25)	62,500
Refreshment (₹ 1,200 x 25)	30,000

Lectures on Weekends (₹ 5,000 x 2 x 25)	250000
Administrative and miscellaneous expenses (₹ 2,020 x 25)	50,500
Total Cost	23,68,000
No. of Batches	1
Total cost per batch	23,68,000

(ii) Minimum fee per student in a batch to cover costs

$$= \frac{\text{Total cost per batch}}{\text{Students per batch}} = \frac{23,68,000}{320} = ₹\ 7,400$$

(iii) Total Fee to be recovered to achieve 20% profit margin on the fee

= ₹ 23,68,000 + (₹ 23,68,000 x 1/5th of sales or 1/4rd of the cost)
= ₹ 29,60,000

$$\frac{\text{Total Fee per batch}}{\text{Students per batch}} = ₹\ 14,800$$

$$\frac{29,60,000}{\text{Students per batch}} = ₹\ 14,800$$

Students per batch = 200

Minimum % of batch size to be filled to charge ₹ 14,800 per trainee

= 200/320 = 62.5%

Question 4

(a) The following data pertaining to a company engaged in manufacturing and sale of a single product during the year:

Particulars	***Budget***	***Actual***
Sales (in units)	*60,000*	*66,000*
Sales (₹)	*1,80,00,000*	*2,14,50,000*
Direct Materials (₹)	*28,80,000*	*36,30,000*
Direct labour (₹)	*43,20,000*	*52,80,000*
Variable Overheads (₹)	*72,00,000*	*81,84,000*

Additional information is given below:

	Standard (₹)	***Actual (₹)***
Direct Material price per kg	*10*	*8*
Direct labour rate per hour	*10*	*12*

You are required to calculate:

(i) Direct material usage variance

(ii) Direct material price variance

(iii) Direct labour efficiency variance

(iv) Direct labour rate variance

(v) Variable overhead cost variance ***(7 Marks)***

(b) The following financial information is available for a company with a normal production capacity of 40,000 units for the year ended 31st March, 2025:

- *Sales amounted to ₹ 8,00,000, Units sold: 35,000 units.*
- *There was no opening or closing stock of finished units.*
- *Direct material and direct wages costs were ₹ 3,50,000 and ₹ 2,00,000 respectively.*
- *Actual factory expenses were ₹ 1,00,000, of which 55% were fixed.*
- *Administrative expenses related to production activities incurred during the year but not paid were ₹ 50,000, which were entirely fixed.*
- *Actual selling and distribution expenses amounted to ₹ 20,000, of which 35% were fixed.*
- *The company earned interest and dividend income totaling ₹ 10,000.*

You are required to prepare:

(i) The cost sheet and ascertain the profit as per cost accounts for the year ended 31st March, 2025, assuming that the indirect expenses are absorbed on the basis of normal production capacity; and

(ii) A statement reconciling the profits shown by financial and cost accounts.

(7 Marks)

Answer

(a)

	Budget			Revised standard			Actual		
	Qty	Price (₹)	Amount (₹)	Qty	Price (₹)	Amount (₹)	Qty	Price (₹)	Amount (₹)
Material	2,88,000	10	28,80,000	3,16,800	10	31,68,000	4,53,750	8	36,30,000

(i) Direct Material Usage Variance = (SQ – AQ) X SP

(3,16,800 – 4,53,750) x 10 = ₹ 13,69,500 A

(ii) Direct Material Price Variance = (SP – AP) X AQ

(10 - 8) x 4,53,750 = ₹ 9,07,500F

	Budget			Revised standard			Actual		
	Hrs	Rate (₹)	Amount (₹)	Hrs	Rate (₹)	Amount (₹)	Hrs	Rate (₹)	Amount (₹)
Labour	4,32,000	10	43,20,000	4,75,200	10	47,52,000	4,40,000	12	52,80,000

(iii) Direct Labor Efficiency Variance = (SH – AH) X SR

(4,75,200 – 4,40,000) x 10 = ₹ 3,52,000 F

(iv) Direct Labor rate Variance = (SR – AR) X AH

(10 – 12) x 4,40,000 = ₹ 8,80,000 A

(v) Variable overhead cost Variance = (Variable overhead for actual output – Actual Variable overheads)

$$\left(72,00,000 \times \frac{66,000}{60,000} - 81,84,000\right) = ₹\ 2,64,000\ A$$

(b) Cost Sheet for the year ended 31st March 31st March 2025

Particulars	(₹)	(₹)
Direct Material		3,50,000
Direct Wages		2,00,000
Prime cost		5,50,000

Factory expenses:		
Variable (45% of ₹ 1,00,000)	45,000	
Fixed* (₹ 55,000 × 35,000/40,000)	48,125	93,125
Works cost		6,43,125
Administrative expenses related to production activities (₹ 50,000 × 35,000/40,000)		43,750
Cost of production		6,86,875
Selling & Distribution expenses:		
Variable (65% of ₹ 20,000)	13,000	
Fixed (₹ 7,000 × 35,000/40,000)	6,125	19,125
Cost of Sales		7,06,000
Profit (Balancing figure)		94,000
Sales revenue		8,00,000

Statement Reconciling profits shown by Financial and Cost Accounts

Particulars	**(₹)**	**(₹)**
Profit as per Cost Accounts		94,000
Add: Income from interest and dividends		10,000
		1,04,000
Less: Factory expenses under-charged in Cost Accounts (₹ 1,00,000 – ₹ 93,125)	6,875	
Administrative expenses under-charged in Cost Accounts (₹ 50,000 – ₹ 43,750)	6,250	
Selling & distribution expenses under—charged in Cost Accounts (₹ 20,000 – ₹ 19,125)	875	(14,000)
Profit as per Financial Accounts		90,000

Question 5

(a) A machine shop has 6 identical drilling machines manned by 4 operators. The machine cannot be worked without an operator wholly engaged on it. The original cost of all these machines works out to ₹ 3,00,000.

These particulars are furnished pertaining to a period of 4 months:

Normal available hours per month	*156 hrs.*
Absenteeism (without pay) hours	*9 hrs.*
Leave (with pay) hours	*10 hrs.*
Normal idle time unavoidable hours	*5 hrs.*
Average rate of wages per worker for 6 hours a day	*₹ 450*
Production bonus estimated	*20% on wages*
Value of power consumed	*₹ 20,500*
Supervision and indirect labour	*₹ 8,500*
Lighting and electricity	*₹ 4,500*

These particulars are furnished for a year:

Repairs and maintenance including consumables - 2% per annum of value of machines.

Depreciation - 15% per annum of original cost.

Other sundry works expenses - ₹ 12,000 p.a.

General management expenses allocated - ₹ 24,000 p.a.

The machine shop has taken an annual insurance for all 6 machines also.

Given that the comprehensive machine hour rate for 4 months period is ₹ 125 per machine hour.

You are required to find out the total amount of annual insurance premium.

(6 Marks)

(b) Following data is available for XYZ Ltd. for the month of March 2025:

Standard working hours	*7 hours per day of 5 days per week*
Number of weeks in the month	*4 weeks*
Maximum Capacity (No. of employees)	*60 employees*
Actual working (No. of employees)	*42 employees*
Actual Capacity Usage Ratio	*65%*
Activity Ratio	*125%*

Calculate the following:

(i) Actual Hours worked

(ii) Standard Hours for actual output

(iii) Standard Capacity Usage Ratio

(iv) Actual Usage of Budgeted Capacity Ratio ***(5 Marks)***

(c) A company can make any one of the 2 products M or S during the year. It can exercise its option only at the beginning of each year.

Relevant information about the products for the next year is given below:

Particulars	***M***	***S***
Selling Price (₹/unit)	*75*	*45*
Variable Cost (₹/unit)	*45*	*30*
Market Demand (in units)	*3,000*	*8,000*
Production Capacity (in units)	*4,000*	*7,000*
Fixed Cost (₹)		*1,20,000*

You are required to compute the opportunity cost for each of the product.

(3 Marks)

Answer

(a) Computation of Amount of Annual Insurance Premium

Particulars	**Amount (₹)**
Operator's wages (Refer Working Note 2)	1,84,500
Production bonus (20% on wages)	36,900
Power consumed	20,500
Supervision and indirect labour	8,500
Lighting and electricity	4,500
Repairs & maintenance (2% × ₹ 3,00,000 × 1/3)	2,000
Depreciation (15% × ₹ 3,00,000 × 1/3)	15,000
Other sundry works expenses (₹ 12,000 × 1/3)	4,000

General management expenses (₹ 24,000 × 1/3)	8,000
Total Overhead of Machine shop without Insurance Premium	2,83,900
Total Insurance Premium for 4 months (B.F.)	**₹ 16,100**
Total Overhead of Machine shop for 4 months	3,00,000

$$\text{Machine hour rate} = \frac{\text{Total overheads of machine shop}}{\text{Hours of machines operation}}$$

Total Overhead of Machine shop = ₹125 x 2,400 hrs = 3,00,000

Annual Insurance Premium = ₹ 16,100 x 3 = ₹ 48,300

Working notes

1. Computation of hours, for which 4 operators are available for 4 months.

	For 4 months and 4 operators
Normal available hours (156 x 4 months x 4 operators)	2,496
Less: Absenteeism hours (9 x 4 operators)	(36)
Paid hours	**2,460**
Less: Leave hours (10 x 4 operators)	(40)
Less: Idle time hours (5 x 4 operators)	(20)
Effective working hours	**2,400**

As machines cannot be worked without an operator wholly engaged on them therefore, hours for which 4 operators are available for 4 months are the hours for which machines can be used. Hence 2,400 hours represent effective working hours.

2. Computation of operator's wages

Average rate of wages: $\frac{₹450}{6\text{hours}}$ = ₹ 75 per hour

Total wages paid to 4 operators for 4 months = 2,460 hours × ₹ 75 = ₹ 1,84,500

(b) (i) Actual Hours worked

$$\text{Actual Capacity Usage Ratio} = \frac{\text{Actual Hours worked}}{\text{Max. possible working hours in a period}} \times 100$$

65% = (Actual working hours ÷ Maximum Capacity in a budget period) × 100

Maximum Capacity *in a budget period*

= 60 workers × 7 hours × 5 days × 4 weeks = 8,400 hours

Actual hours= 8,400 × 65% = 5,460 hours

(ii) Standard hours for actual output

$$\text{Activity ratio} = \frac{\text{Standard Hrs}}{\text{Budgeted Hrs}} \times 100$$

125% = (Standard hours ÷ Budgeted Hours) × 100

Budgeted Hours = 42 workers × 7 hours × 5 days × 4 weeks = 5,880 hours

Standard hours for actual output = 5,880 x 125% = 7,350 hours

(iii) Standard capacity usage ratio

$$= \frac{\text{Budgeted Hours}}{\text{Max. possible hours in the budgeted period}} \times 100$$

= (5,880 hours÷ 8,400 hours) × 100

= 70%

(iv) Actual Usage of Budgeted Capacity Ratio

$$= \frac{\text{Actual working Hours}}{\text{Budgeted Hours}} \times 100$$

= (5,460 hours ÷ 5,880hours) × 100

= 92.86%

(c) Computation of opportunity cost for each product

Particulars	M	S
I. Contribution per unit (₹)	30 (75-45)	15 (45-30)
II. Units (Lower of Production/Market Demand)	3,000	7,000
III. Possible Contribution (₹) {I x II}	90,000	1,05,000
IV. Opportunity Cost (₹)	1,05,000	90,000

(*) Opportunity cost is the maximum possible contribution forgone by not producing alternative products i.e. if product M is produced then opportunity cost will be ₹ 1,05,000(Contribution of S).

Question 6

(a) Classify the following items of expenses by functions and variability:

S. No.	***Item***	***Function***	***Variability/ Behaviour***
(i)	*Consumable Store*		
(ii)	*General Manager's salary*		
(iii)	*Delivery van expenses*		
(iv)	*Compensation (fixed salary plus commission on sales)*		
(v)	*Rent of finished goods warehouse*		

(5 Marks)

(b) Suggest a suitable incentive scheme to a factory for its workers, keeping in view the following:

(i) The entire gains of improved production should not go to the workers.

(ii) In the name of speed, quality should not suffer.

(iii) The rate setting department being newly established are liable to commit mistakes. ***(5 Marks)***

(c) Discuss the usefulness/suitability of Activity Based Costing. ***(4 Marks)***

OR

(c) Discuss the four components of Budgetary Control System. ***(4 Marks)***

Answer

(a) Classification of Expenses by Function and Variability

S. No.	Item	Function	Variability / Behaviour
(i)	Consumable stores	Factory/Production/ manufacturing overhead	Variable
(ii)	General Manager's salary	Administration	Fixed
(iii)	Delivery van expenses	Selling & Distribution/ Distribution	Semi-variable/ Variable
(iv)	Compensation (fixed salary plus commission on sales)	Selling / Selling & Distribution	Semi-variable
(v)	Rent of finished goods warehouse	Selling & Distribution/ Distribution	Fixed

(b) Rowan Scheme of premium bonus (variable sharing plan) is a suitable incentive scheme for the workers of the factory. If this scheme is adopted, the entire gains due to time saved by a worker will not pass to him.

Another feature of this scheme is that a worker cannot increase his earnings or bonus by merely increasing its work speed. The reason for this is that the bonus under Rowan Scheme is maximum when the time taken by a worker on a job is half of the time allowed. As this fact is known to the workers, therefore, they work at such a speed which helps them to maintain the quality of output too.

Lastly, Rowan System provides a safeguard in the case of any loose fixation of the standards by the rate-setting department. Workers cannot take undue advantage of such a situation.

(c) ABC is particularly needed by organisations for product costing in the following situations:

1. **High amount of overhead**: When production overheads are high and form significant costs, ABC is more useful than traditional costing system.

2. **Wide range of products**: ABC is most suitable, when, there is diversity in the product range or there are multiple products.
3. **Presence of non-volume related activities**: When non-volume related activities e.g. material handling, inspection set-up, are present significantly and traditional system cannot be applied, ABC is a superior and better option. ABC will identify non-value-adding activities in the production process that might be a suitable focus for attention or elimination.
4. **Stiff competition**: When the organisation is facing stiff competition and there is an urgent requirement to compute cost accurately and to fix the selling price according to the market situation, ABC is very useful. ABC can also facilitate in reducing cost by identifying non-value-adding activities in the production process that might be a suitable focus for attention or elimination.

OR

(c) These functional budgets are broadly grouped under the following heads:

1. **Physical budgets:** Those budgets which contain information in quantitative terms such as the physical units of sales, production etc. This may include quantity of sales, quantity of production, inventories, and manpower budgets are physical budgets.
2. **Cost budgets:** Budgets which provides cost information in respect of manufacturing, administration, selling and distribution, etc. for example, manufacturing costs, selling costs, administration cost, and research and development cost budgets are cost budgets.
3. **Profit budgets:** A budget which enables the ascertainment of profit. For example, sales budget, profit and loss budget, etc.
4. **Financial budgets:** A budget which facilitates in ascertaining the financial position of a concern, for example, cash budgets, capital expenditure budget, budgeted balance sheet etc.