CA Intermediate (New Syllabus)
Cost & Management Accounting (Paper 3)
November, 2022 Exam - Suggested Answers

Question No. 1 is compulsory.
Answer any **four** questions out of the remaining **five** questions.
Working notes should form part of the answer.

Question 1(a) : [5 Marks]

A Ltd. is a pharmaceutical company which produces vaccines for diseases like Monkey Pox, Covid-19 and Chickenpox. A distributor has given an order for 1,600 Monkey Pox Vaccines. The company can produce 80 vaccines at a time. To process a batch of 80 Monkey Pox Vaccines, the following costs would be incurred :

		₹
Direct Materials	-	4,250
Direct wages	-	500
Lab set-up cost	-	1,400

The Production Overheads are absorbed at a rate of 20% of direct wages and 20% of total production cost is charged in each batch for Selling, distribution and administration Overheads. The company is willing to earn profit of 25% on sales value.

You are required to determine :

(i) Total Sales value for 1,600 Monkey Pox Vaccines.

(ii) Selling price per unit of the Vaccine.

Answer 1(a) : Calculation of total Sales value & Selling price per vaccine :

Particulars	**Rs.**
Direct Materials per batch	4,250
Direct wages	500
Lab set-up cost	1,400
Production Overheads [20% x 500]	100
∴ Production Cost per batch	6,250
Selling, distribution and admin. OH [20% x 6,250]	1,250
∴ Total Cost per batch	7,500
Add : Profit [25/75 x 7,500]	2,500
∴ Sale value of one batch of 80 vaccines	10,000
∴ Total Sales value of 1,600 vaccines [10,000 / 80 x 1600]	2,00,000
∴ Selling price per unit of vaccine [10,000 / 80]	125

Question 1(b) : [5 Marks]

ABC Bank is having a branch which is engaged in processing of 'Vehicle Loan' and 'Education Loan' applications in addition to other services to customers. 30% of the overhead costs of the branch are estimated to be applicable to the processing of 'Vehicle Loan' applications and 'Education Loan' applications each.

Branch is having four employees at a monthly salary of ₹ 50,000 each, exclusively for processing of Vehicle Loan applications and two employees at a monthly salary of ₹ 70,000 each, exclusively for processing of Education Loan applications.

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

- Branch Manager who supervises all the activities of branch, is paid at ₹ 90,000 per month.
- Legal charges, Printing & stationery and Advertising Expenses are incurred at ₹ 30,000, ₹ 12,000 and ₹ 18,000 respectively for a month.
- Other Expenses are ₹ 10,000 per month.

You are required to :

(i) Compute the cost of processing a Vehicle Loan Application on the assumption that 496 Vehicle Loan applications are processed each month.

(ii) Find out the number of Education Loan Applications processed, if the total processing cost per Education Loan Application is same as in the Vehicle Loan Application as computed in (i) above.

Answer 1(b) :

Calculation of common overheads :

Particulars	**(Rs.)**
Salary of Branch Manager	90,000
Legal charges	30,000
Printing & Stationery	12,000
Advertising Expenses	18,000
Other Expenses	10,000
∴ Total Overheads per month	1,60,000
∴ 30% share of each Vehicle Loan & Education Loan	48,000

(i) Calculation of Total Cost and Cost per Application :

Particulars	**Vehicle Loan**	**Education Loan**
Salary of exclusive employees	2,00,000 [50,000 x 4]	1,40,000 [70,000 x 2]
Add : Share of common overheads [as above]	48,000	48,000
∴ Total Cost per month	2,48,000	1,88,000
Number of Vehicle Loans processed per month	496	
∴ Processing Cost per Vehicle Loan Application	₹ 500	

(ii) Number of Education Loan Applications processed :

₹ 1,88,000 / 500 = 376 applications per month

Question 1(c) : [5 Marks]

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

You are required to determine :

(i) The Economic Order Quantity (EOQ) and the frequency of orders.

(ii) The re-order point.

(iii) The Economic Order Quantity (EOQ) if the valve costs ₹ 4.50 each instead of ₹ 1.50 each.
(Assume a year consists of 360 days)

Answer 1(c) :

(i) Calculation of Economic Order Quantity :

Annual consumption = 7,500 units per month x 12 months = 90,000 units

Ordering cost per order = ₹ 15 per order

Carrying cost per unit p.a. = 20% of ₹ 1.50 = ₹ 0.3

$$EOQ = \sqrt{\frac{2 \times \text{Annual consumption} \times \text{Ordering cost per order}}{\text{Carrying cost per unit p.a.}}}$$

$$EOQ = \sqrt{\frac{2 \times 90{,}000 \text{ units} \times \text{Rs. } 15 \text{ per order}}{0.3 \text{ per unit p.a.}}}$$

= 3,000 units.

No. of orders to be placed in a year = 90,000 / 3,000
= 30 orders

Frequency of placing orders = 360 days / 30 orders
= 12 (i.e. 1 order after every 12 days)

(ii) Calculation of Re-Order Point :

Reorder Point = (Average Usage Rate x Average Lead Time) + Safety Stock
= [90,000 units / 12 months x 1.5 months] + 3,200
= 11,250 + 3,200 = 14,450 valves

(iii) Calculation of Revised EOQ :

$$= \sqrt{\frac{2 \times 90{,}000 \text{ units} \times \text{Rs. } 15 \text{ per order}}{(4.50 \times 20\%) = 0.9}}$$

= 1,732 valves (approx)

Question 1(d) : [5 Marks]

ABC Ltd. sells its Product 'Y' at a price of ₹ 300 per unit and its variable cost is ₹ 180 per unit. The fixed costs are ₹ 16,80,000 per year uniformly incurred throughout the year. The Profit for the year is ₹ 7,20,000.

You are required to calculate :

(i) BEP in value (₹) and units,

(ii) Margin of Safety

(iii) Profits made when sales are 24,000 units,

(iv) Sales in value (₹) to be made to earn a net profit of ₹ 10,00,000 for the year.

Answer 1(d) :

(i) Contribution per unit = 300 - 180 = ₹ 120

BEP (in units) = Fixed Cost / Contribution per unit

= ₹ 16,80,000 / ₹ 120 = 14,000 units

BEP (in value) = 14,000 units x ₹ 300

= ₹ 42,00,000

(ii) P / V Ratio = 120 / 300 x 100 = 40%

MOS (in value) = Net Profit / P V Ratio

= ₹ 7,20,000 / 40% = ₹ 18,00,000

(iii) Profit = Contribution - Fixed Cost

= (24,000 units x ₹ 120) - ₹ 16,80,000

= ₹ 12,00,000

(iv) Desired Sales = (Desired Profit + Fixed Cost) / P V Ratio

= (10,00,000 + 16,80,000) / 40%

= ₹ 67,00,000

Question 2(a) : [10 Marks]

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

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

The factory manager has informed that in the coming year, the total direct wages will be ₹ 12,00,000 which will be incurred evenly throughout the year.

During the first month of operation, the following details are available from the job book :

Number of hours the special machine was used

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

You are required to :

(i) Compute the Machine Hour Rate for the company as a whole for a month (A) when the robot is used and (B) when the robot is not used.

(ii) Compute the Machine Hour Rate for the individual jobs i.e. Vulcanising, Brushing and Striping.

Answer 2(a) :

Working Notes :

1. Calculation of Total Machine Hours & Robot Hours for a month :

Jobs	Without the aid of the robot	With the aid of the robot
Vulcanising	500	400
Brushing	1000	400
Striping	-	1200
Totals	1,500	2,000

Total Robot Hours = 2,000 and

Total Machine Hours = 1,500 + 2,000 = 3,500

2. Calculation of per hour cost of Robot :

= Hire Charges of Robot per month / Monthly hours of Robot

= (2,70,000 / 6 months) / 2,000 hours

= ₹ 22.50 per hour

3. Calculation of per hour cost of Special Machine :

Particulars	(₹) p.m.
Rent (18,000 / 3 months)	6,000
Depreciation (19,20,000 x 10%) / 12 months	16,000
Other Indirect Expenses (12,00,000 x 20%) / 12 months	20,000
∴ Total Overheads per month	42,000
∴ Machine Hour Rate [42,000 / 3,500 hrs.]	12

(i) Computation of Machine Hour Rate for a Month :

(A) When the robot is used = 22.50 + 12 = ₹ 34.50 per hour

(B) When the robot is not used = ₹ 12 per hour

(ii) Computation of Machine Hour Rate for individual jobs :

Particulars	Vulcanising	Brushing	Striping
Machining cost without the aid of robot @ ₹ 12 per hour	6,000 (500 x 12)	12,000 (1,000 x 12)	--
Machining cost with the aid of robot @ ₹ 34.50 per hour	13,800 (400 x 34.50)	13,800 (400 x 34.50)	41,400 (1200 x 34.50)
∴ Total cost of individual jobs	19,800	25,800	41,400
Total Machine Hours	900	1,400	1,200
∴ Machine hour rate of jobs	22.00	18.43	34.50

Question 2(b) : [6 Marks]

A skilled worker, in PK Ltd., is paid a guaranteed wage of ₹ 15.00 per hour in a 48-hour week. The standard time to produce a unit is 18 minutes. During a week, a skilled worker – Mr. 'A' has produced 200 units of the product. The Company has taken a drive for cost reduction and wants to reduce its labour cost.

You are required to :

(i) Calculate wages of Mr. 'A' under each of the following methods :
   A. Time rate,
   B. Piece-rate with a guaranteed weekly wage,
   C. Halsey Premium Plan
   D. Rowan Premium Plan

(ii) Suggest which bonus plan i.e. Halsey Premium Plan or Rowan Premium Plan, the company should follow :

Answer 2(b) :

(i) Calculation of wages of Mr. 'A' under various methods :

(A) Time Rate :

Wages = Hours worked x Rate per hour

= 48 hours x 15 = ₹ 720

(B) Piece Rate with Guaranteed Weekly Wage :

Guaranteed Weekly Wages = 48 hours x 15 = ₹ 720

Piece Rate = ₹ 15 / 60 minutes x 18 minutes

= ₹ 4.50 per piece

Piece Rate Wages = No. of pieces produced x Piece Rate

= 200 units x ₹ 4.50 = ₹ 900

(C) Halsey Premium Plan :

Time allowed = (200 units x 18 minutes) / 60 minutes = 60 hours

Time saved = 60 - 48 hours = 12 hours

Wages = (Hours worked x Rate per hour) + 50% of (Time Saved x Rate per hour)

= (48 hours x 15) + 50% of (12 hours x 15)

= ₹ 720 + 90 = ₹ 810

(D) Rowan Premium Plan :

Wages = Basic Wages + [TS / TA x Basic wages]

= ₹ 720 + [12 / 60 x ₹ 720]

= ₹ 720 + 144 = ₹ 864

(ii) Suggestion about Bonus Plan :

As the company aims to reduce its labour cost, Halsey Premium Plan should be followed.

Question 2(c) : [6 Marks]

XYZ Ltd. is engaged in manufacturing two products – Express Coffee and Instant Coffee. It furnishes the following data for a year :

Product	Actual Output (units)	Total Machine hours	Total Number of Purchase orders	Total Number of set ups
Express Coffee	5,000	20,000	160	20
Instant Coffee	60,000	1,20,000	384	44

The annual overheads are as under :

Particulars	₹
Machine Processing costs	7,00,000
Setup related costs	7,68,000
Purchase related costs	6,80,000

You are required to :

(i) Compute the cost allocated to each product – Express Coffee and Instant Coffee from each activity on the basis of Activity-Based Cost (ABC) method.

(ii) Find out the Overhead cost per unit of each product – Express coffee and Instant coffee based on (i) above.

Answer 2(c) :

Statement of allocation of cost and cost per unit :

Particulars	Total OH	Cost Driver	Express Coffee	Instant Coffee
	₹		₹	₹
(a) Machine processing cost	7,00,000	Total M/C hours [20 : 120]	1,00,000	6,00,000
(b) Set up related costs	7,68,000	No. of set ups [20 : 44]	2,40,000	5,28,000
(c) Purchase related costs	6,80,000	Purchase Orders [160 : 384]	2,00,000	4,80,000
(d) Total Overheads	21,48,000	[a + b + c]	5,40,000	16,08,000

(e) Actual Output (units)			5,000	60,000
(f) Overheads cost p. u.		[d / e]	108	26.8

Question 3(a) : [10 Marks]

XYZ Construction Ltd. has obtained a contract of ₹ 25,00,000 in the Financial Year 2021-22. The work on the contract commenced immediately and it is expected that the contract will be completed by 31st March, 2023. Chief accountant of the company has provided following information related to the Contract :

Particulars	**2021-22 (Actual) (in ₹)**	**2022-23 (Estimated) (in ₹)**
Material issued	4,00,000	3,50,000
Wages : Paid	2,50,000	1,40,000
Prepaid at the end of the year	15,000	-
Plant	2,00,000	-
Sundry Expenses : Paid	50,000	35,000
- Outstanding at the end of the year	7,500	5,000
Office Expenses : Paid	65,000	55,000
- Outstanding at the end of the year	12,500	15,000
Contingency Expenses	-	1,25,000

Following additional information is also available :

- A part of plant costing ₹ 12,000 was scrapped and written-off in the F.Y. 2021-22.
- The value of Plant-at-Site on 31st March, 2022 was ₹ 18,000.
- Company would have to spend an additional sum of ₹ 80,000 on the plant in FY. 2022-23 and the residual value of the plant on the completion of contract would be ₹ 10,000.
- A part of material costing ₹ 30,000 was scrapped and sold for ₹ 20,000 in F.Y. 2021-22.
- The value of Material-at-Site on 31st March, 2022 was ₹ 17,000.
- Cash received on account till 31st March, 2022 was ₹ 13,50,000 representing 90% of the work certified.
- The cost of work uncertified on 31st March, 2022 was valued at 20% of work certified.

You are required to :

(i) Prepare a Contract Account for the year ended 31st March, 2022.

(ii) Calculate Estimated Total Profit on this Contract.

Answer 3(a) : **XYZ Construction Ltd.**

(1) Contract Account for the year ending on 31st March 2022

Particulars		₹	Particulars	₹
To Material issued		4,00,000	By plant scrapped & w/off	12,000
To Wages Paid	2,50,000		By Sale of material	20,000
(-) Prepaid at end	(15,000)	2,35,000	By Loss on sale of material transferred to Costing P&L	10,000
To Plant Purchased		2,00,000		
To Sundry Exp. paid	50,000		By Plant at site	18,000
(+) Outstanding	7,500	57,500	By Material at site	17,000
To Office Exp. paid	65,000		By Work certified	15,00,000
(+) Outstanding	12,500	77,500	(13,50,000 / 90%)	
			By Cost of work uncertified	3,00,000
To Notional Profit (Bal. fig.)		9,07,000	(15,00,000 x 20%)	
Total		18,77,000	Total	18,77,000

(2) Calculation of Estimated Total Profit on Completion :-

Particulars	**₹**	**₹**
(a) Cost incurred upto 31/03/2022 :		
Work certified	15,00,000	
Add : Work uncertified	3,00,000	
Less : Notional Profit	(9,07,000)	8,93,000
(**b) Estimated cost between 1.4.2022 to 31.3.2023 :**		
Material Cost :-		
Opening material at site	17,000	
Add : Material issued	3,50,000	3,67,000
Wages Cost :-		
Wages Paid	1,40,000	
Add : Opening prepaid	15,000	1,55,000
Depreciation of Plant :-		
Opening value of plant	18,000	
Add : Additional Purchase	80,000	
Less : Residual value of plant	(10,000)	88,000
Sundry Expenses :-		
Paid during the year	35,000	
Add : Closing Outstanding	5,000	
Less : Opening Outstanding	(7,500)	32,500
Office Expenses :-		
Paid during the year	55,000	
Add : Closing Outstanding	15,000	
Less : Opening Outstanding	(12,500)	57,500
Contingency Expenses		1,25,000

(c) Total cost up to completion [a + b]		17,18,000
(d) Total Contract Price		25,00,000
(e) Total estimated profit on completion [d – c]		7,82,000

Question 3(b) : [10 Marks]

N Ltd. produces a product which passes through two processes – Process-I and Process-II. The company has provided following information related to the Financial Year 2021-22 :

Particulars	**Process I**	**Process II**
Raw Material @ ₹ 65 per unit	6,500 units	-
Direct Wages	₹ 1,40,000	₹ 1,30,000
Direct Expenses	30% of Direct Wages	35% of Direct Wages
Manufacturing Overheads	₹ 21,500	₹ 24,500
Realisable value of scrap per unit	₹ 4.00	₹ 16.00
Normal Loss	250 units	500 units
Units transferred to Process II / finished stock	6,000 units	5,500 units
Sales	--	5,000 units

There was no opening or closing stock of work-in-progress.

You are required to prepare :

(i) Process-I Account

(ii) Process-II Account

(iii) Finished Stock Account

Answer 3(b) :

Process I A/c

Particulars	Qty	Rate	Amount	Particulars	Qty	Rate	Amount
To Input Material	6,500	65	4,22,500	By Normal loss	250	4	1,000
To Direct Wages			1,40,000	By Abnormal			
To Direct Exp.			42,000	loss a/c	250	100	25,000
(30% of 1,40,000)				By Output			
To Manufacturing overheads			21,500	transferred to Process II a/c	6,000	100	6,00,000
Total	6,500		6,26,000	Total	6,500		6,26,000

Process II A/c

Particulars	Qty.	Rate	Amount	Particulars	Qty.	Rate	Amount
To Input from Process I a/c	6,000	100	6,00,000	By Normal loss a/c (5% of 18,000)	500	16	8,000
To Direct Wages			1,30,000	By Output transferred	5,500	144	7,92,000
To Direct Exp. (35% x 1,30,000)			45,500	to Finished Goods A/c			
To Production Overheads			24,500				
Total	6,000		8,00,000	Total	6,000		8,00,000

Finished Goods A/c

Particulars	Qty.	Rate	Amount	Particulars	Qty.	Rate	Amount
To FG received from Process II a/c	5,500	144	7,92,000	By Cost of Sales A/c	5,000	144	7,20,000
				By Closing Stock	500	144	72,000
Total	5,500		7,92,000	Total	5,500		7,92,000

Working Notes :

Calculation of Cost p.u. = $\frac{\text{Total process cost – Realisable value of normal scrap}}{\text{Input Qty. – Normal loss Qty.}}$

Process I = $\frac{\text{Rs. 6,26,000 – 1,000}}{\text{6,500 – 250 units}}$

= Rs. 6,25,000 / 6,250 units = Rs. 100 per unit

Process II = $\frac{\text{Rs. 8,00,000 – 8,000}}{\text{6,000 – 500 units}}$

= Rs. 144 per unit

Question 4(a) : [10 Marks]

An agriculture based company having 210 hectares of land is engaged in growing three different cereals namely, wheat, rice and maize annually. The yield of the different crops and their selling prices are given below :

Particulars	**Wheat**	**Rice**	**Maize**
Yield (in kgs per hectare)	2,000	500	100
Selling price (₹ per kg.)	20	40	250

The variable cost data of different crops are given below : (All figures in ₹ per kg.)

Crop	Labour charges	Packing Materials	Other variable expenses
Wheat	8	2	4
Rice	10	2	1
Maize	120	10	20

The company has a policy to produce and sell all the three kinds of crops. The maximum and minimum area to be cultivated for each crop is as follows :

Crop	Maximum area (in hectares)	Minimum Area (in hectares)
Wheat	160	100
Rice	50	40
Maize	60	10

You are required to :

(i) Rank the crops on the basis of contribution per hectare.

(ii) Determine the optimum product mix considering that all the three cereals are to be produced.

(iii) Calculate the maximum profit which can be achieved if the total fixed cost per annum is ₹ 21,45,000.

(Assume that there are no other constraints applicable to this company)

Answer 4(a) :

Statement of Contribution, Ranking, Product Mix & Profit :

Particulars	Wheat	Rice	Maize	Total
(a) Yield (in kgs per hectare)	2,000	500	100	
(b) Selling price (₹ per kg.)	20	40	250	
(c) Variable Cost (₹ per kg.) :				
Labour charges	8	10	120	
Packing materials	2	2	10	
Other variable expenses	4	1	20	
Sub-total (c)	14	13	150	
(d) Contribution (₹ per kg.) [b - c]	6	27	100	
(e) Contribution per hectare [a x d]	12,000	13,500	10,000	
(f) Ranking based on (e) above	II	I	III	
(g) Allocation of land based on ranking (in hectares) i.e. Product Mix	150 (Bal. area)	50 (Max. area)	10 (Min. area)	210
(h) Total Contribution [e x g]	18,00,000	6,75,000	1,00,000	25,75,000
(i) Total Fixed Cost [Given]				21,45,000
(j) Maximum Profit [h - i]				4,30,000

Logic behind allocation of land :

(a) Rank I i.e. Rice is allocated maximum land of 50 hectares first

(b) Rank III i.e. Maize is allocated minimum land of 10 hectares and

(c) Rank II i.e. Wheat is allocated balance land (210 - 50 - 10) = 150 hectares last.

Question 4(b) : [10 Marks]

PNME Ltd. manufactures two types of masks – 'Disposable Masks' and 'Cloth Masks'. The cost data for the year ended 31st March, 2022 is as follows :

Particulars	₹
Direct Materials	12,50,000
Direct Wages	7,00,000
Production Overhead	4,00,000
Total	**23,50,000**

It is further ascertained that :

- Direct material cost per unit of Cloth Mask was twice as much of Direct material cost per unit of Disposable Mask.
- Direct wages per unit for Disposable Mask were 60% of those for Cloth Mask.
- Production overhead per unit was at same rate for both the types of the masks.
- Administration overhead was 50% of Production overhead for each type of mask.
- Selling cost was ₹ 2 per Cloth Mask.
- Selling Price was ₹ 35 per unit of Cloth Mask.
- No. of units of Cloth Masks sold – 45,000
- No. of units of Production of
  Cloth Masks : 50,000
  Disposable Masks : 1,50,000

You are required to prepare a cost sheet for Cloth Masks showing :

(i) Cost per unit and Total Cost.

(ii) Profit per unit and Total Profit.

Answer 4(b) :

Working Notes :

(1) Allocation of Direct Material Cost :

Let's assume cost per unit of Disposable Mask as ₹ 'X' and that of Cloth Mask as ₹ '2X'

Hence, (50,000 x 2X) + (1,50,000 x X) = ₹ 12,50,000

∴ 2,50,000X = ₹ 12,50,000

Hence, X = ₹ 5 and 2X = ₹ 10

(2) Allocation of Direct Wages Cost :

Let's assume cost per unit of Cloth Mask as ₹ 'Y' and Disposable Mask as ₹ '0.6Y'

Hence, (50,000 x Y) + (1,50,000 x 0.6Y) = ₹ 7,00,000

∴ 1,40,000Y = ₹ 7,00,000

Hence, Y = ₹ 5 and 0.6Y = ₹ 3

(3) Allocation of Production Overheads :

Let's assume cost per unit of Cloth Mask and Disposable Mask as ₹ 'Z'

Hence, (50,000 x Z) + (1,50,000 x Z) = ₹ 4,00,000

∴ 2,00,000Z = ₹ 4,00,000

Hence, Z = ₹ 2

Cost Sheet for Cloth Mask :

(Production = 50,000 units & Sales = 45,000 units)

Particulars	Per unit (₹)	No. of units	Total (₹)
Direct Materials	10	50,000	5,00,000
Direct Wages	5	50,000	2,50,000
Production Overhead	2	50,000	1,00,000
∴ **Factory Cost**	17	50,000	8,50,000
Add : Admin. OH @ 50% of Prod. OH	1	50,000	50,000
∴ **Total Cost of Production**	18	50,000	9,00,000
Less : Closing Stock	18	(5,000)	(90,000)
∴ **Cost of goods sold**	18	45,000	8,10,000
Add : Selling cost	2	45,000	90,000
∴ **Cost of sales**	20	45,000	9,00,000
Sales	35	45,000	15,75,000
∴ **Profit**	15	45,000	6,75,000

Question 5(a) : [10 Marks]

Y Ltd. manufactures "Product M" which requires three types of raw materials – "A", "B" & "C". Following information related to 1st quarter of the F.Y. 2022-23 has been collected from its books of accounts. The standard material input required for 1,000 kg of finished product 'M' as under :

Material	**Quantity (Kg.)**	**Std. Rate per Kg. (₹)**
A	500	25
B	350	45
C	250	55
Total input	1100	
Less : Standard Loss	100	
Standard Output	1000	

During the period, the company produced 20,000 kg of product 'M' for which the actual quantity of materials consumed and purchase prices are as under :

Material	**Quantity (Kg.)**	**Purchase price per Kg. (₹)**
A	11,000	23
B	7,500	48
C	4,500	60

You are required to calculate :

(i) Material Cost Variance

(ii) Material Price Variance for each raw material and Product 'M'

(iii) Material Usage Variance for each raw material and Product 'M'

(iv) Material Yield Variance.

(Note : Indicate the nature of variance i.e. Favourable or Adverse).

Answer 5(a) :

i) Material Cost Variance :

Std. Qty. of input required for actual output

Material A = 500 Kgs. x 20,000/1,000 = 10,000 Kgs.

Material B = 350 Kgs. x 20,000/1,000 = 7,000 Kgs.

Material C = 250 Kgs. x 20,000/1,000 = 5,000 Kgs.

Material Cost Variance = (SQ x SP) - (AQ x AP)

A : (10,000 kg. x Rs. 25) - (11,000 kg. x Rs. 23)	=	3,000 (A)
B : (7,000 kg. x Rs. 45) - (7,500 kg. x Rs. 48)	=	45,000 (A)
C : (5,000 kg. x Rs. 55) - (4,500 kg. x Rs. 60)	=	5,000 (F)
Total for output 'M'	=	**43,000 (A)**

ii) Material Price Variance : = AQ x (Std. price - Actual price)

A :	11,000 kgs. x (Rs. 25 - Rs. 23)	=	22,000 (F)
B :	7,500 kgs. x (Rs. 45 - Rs. 48)	=	22,500 (A)
C :	4,500 kgs. x (Rs. 55 - Rs. 60)	=	22,500 (A)
	Total for output 'M'	=	**23,000 (A)**

iii) Material Usage Variance = Std. price x (Std. Qty. - Actual Qty.)

A :	Rs. 25 x (10,000 kg. - 11,000 kg)	=	25,000 (A)
B :	Rs. 45 x (7,000 kg. - 7,500 kg)	=	22,500 (A)
C :	Rs. 55 x (5,000 kg. - 4,500 kg)	=	27,500 (F)
	Total for output 'M'	=	**20,000 (A)**

iv) Material Yield Variance (i.e. Sub-usage Variance) :

= Std. price x (Std. Qty. - Std. Mix)

Std. Mix = Actual Qty. consumed revised in standard proportion

i.e. Total 23,000 kg. consumed revised in 50 : 35 : 25 proportion

A :	Rs. 25 x (10,000 kg. - 10,455 kg)	=	11,375 (A)
B :	Rs. 45 x (7,000 kg. - 7,318 kg)	=	14,310 (A)
C :	Rs. 55 x (5,000 kg. - 5,227 kg)	=	12,485 (A)
	Total for output 'M'	=	**38,170 (A)**

Question 5(b) : [5 Marks]

'X' Ltd. follows Non-Integrated Accounting System. Financial Accounts of the company show a Net Profit of ₹ 5,50,000 for the year ended 31st March, 2022. The chief accountant of the company has provided following information from the Financial Accounts and Cost Accounts :

SN	Particulars	(₹)
(i)	Legal Charges provided in financial accounts	15,250
(ii)	Interim Dividend received credited in financial accounts	4,50,000
(iii)	Preliminary Expenses written off in financial accounts	25,750
(iv)	Over recovery of selling overheads in cost accounts	11,380
(v)	Profit on sale of capital asset credited in financial accounts	30,000
(vi)	Under valuation of closing stock in cost accounts	25,000
(vii)	Over recovery of production overheads in cost accounts	10,200
(viii)	Interest paid on Debentures shown in financial accounts	50,000

Required :

Find out the Profit (Loss) as per Cost Accounts by preparing a Reconciliation Statement.

Answer 5(b) :

Reconciliation Statement :

Particulars	Add	Less	Total
Net Profit as per Financial Accounts			5,50,000
Legal Charges provided in financial accounts	15,250		
Interim Dividend received credited in financial accounts		4,50,000	
Preliminary Expenses written off in financial accounts	25,750		
Over recovery of selling overheads in cost accounts		11,380	
Profit on sale of capital asset in financial accounts		30,000	
Under valuation of closing stock in cost accounts		25,000	
Over recovery of production overheads in cost accounts		10,200	
Interest paid on Debentures shown in financial accounts	50,000		
Sub-total	91,000	5,26,580	(4,35,580)
Net Profit as per Financial Accounts			1,14,420

Question 5(c) : [5 Marks]

ASR Ltd. mainly produces Product 'L' and gets a by-Product 'M' out of a joint process. The net realizable value of the by-product is used to reduce the joint production costs before the joint costs are allocated to the main product. During the month of October 2022, company incurred joint production costs of ₹ 4,00,000. The main Product 'L' is not marketable at the split off point. Thus, it has to be processed further. Details of company's operation are as under :

Particulars	Product L	By-Product M
Production (units)	10,000	200
Selling pricing per kg.	₹ 45	₹ 5
Further processing cost	₹ 1,01,000	-

You are required to find out :

(i) Profit earned from Product "L".

(ii) Selling price per kg of product "L", if the company wishes to earn a profit of ₹ 1,00,000 from the above production.

Answer 5(c) :

(i) Statement of Profit earned from Product "L" :

Particulars	(₹)
Total joint cost incurred	4,00,000
Less : Sale value of by-product 'M' [200 units x 5]	1,000
∴ Net joint cost chargeable to main Product 'L'	3,99,000
Add : Further processing cost	1,01,000
∴ Total cost of production of main Product 'L'	5,00,000
Sale value of main Product 'M' [10,000 units x ₹ 45]	4,50,000
∴ Profit / (Loss) on sale of main Product 'L'	(50,000)

(ii) Calculation of Selling Price of Product "L" :

Particulars	(₹)
Total cost of production of main Product 'L' (as above)	5,00,000
Add : Desired Profit	1,00,000
∴ Total sale value of main Product 'L'	6,00,000
∴ Sales price per kg. of Product 'L' [6,00,000 / 10,000]	60

Question 6 : Answer any **four** of the following : **(4 x 5 = 20 Marks)**

(a) Which system of inventory management is known as 'Demand pull' or 'Pull through' system of production ? Explain. Also, specify the two principles on which this system is based.

(b) Indicate, for following items, whether to be shown in the Cost Accounts or Financial Accounts :

(i) Preliminary expense written off during the year
(ii) Interest received on bank deposits
(iii) Dividend, interest received on investments
(iv) Salary for the proprietor at notional figure though not incurred
(v) Charges in lieu of rent where premises are owned
(vi) Rent receivables
(vii) Loss on sale of Fixed Assets
(viii) Interest on capital at notional figure through not incurred
(ix) Goodwill written off
(x) Notional Depreciation on the assets fully depreciated for which book value is Nil.

(c) PP Limited is in the process of implementation of Activity Based Costing System in the organisation. For this purpose, it has identified the following Business Function in its organisation :

(i) Research and Development
(ii) Design of Products, Services and Procedures
(iii) Customer Service
(iv) Marketing
(v) Distribution

You are required to specify two cost drivers for each Business Function identified above.

(d) Define Budget Manual. What are the salient features of Budget Manual ?

(e) Mention the cost units (physical measurements) for the following Industry/product :

(i) Automobile
(ii) Gas
(iii) Brick works
(iv) Power
(v) Steel
(vi) Transport (by road)
(vii) Chemical
(viii) Oil
(ix) Brewing
(x) Cement

Answer 6 :

(a) 'Demand Pull' or 'Pull through' system is popularly known as **Just in Time (JIT)** system of inventory management. This approach tries to have zero inventory in stores. According to this approach, material should be purchased only when it is actually required for production and finished goods should be produced only when the customer order is received.

In this system we don't produce in anticipation of demand, which is known as 'Demand Push' system. However, we produce only after demand is received i.e. 'Demand Pull' system. This system is based on the following two principles :

(i) Produce goods only when it is required and

(ii) Products should be delivered to customers at the time only when they want it.

(b) Categorisation of items in Costing & Financial Accounts :

(i) Financial Accounts
(ii) Financial Accounts
(iii) Financial Accounts
(iv) Cost Accounts
(v) Cost Accounts
(vi) Financial Accounts
(vii) Financial Accounts
(viii) Cost Accounts
(ix) Financial Accounts
(x) Cost Accounts

(c) Examples of Cost Drivers :

Business Functions	**Cost Drivers**
Research and Development	• Number of research projects • Personnel hours on a project • Technical complexities of projects
Design of products, services and processes	• Number of products in design • Number of parts per product • Number of engineering hours
Customer Service	• Number of service calls • Number of products serviced • Hours spent on servicing products
Marketing	• Number of Advertisements / insertions • Number of sales personnel • Sales revenue
Distribution	• Number of items distributed • Number of customers • Weight of items distributed

(d) Budget Manual : The budget manual is a booklet specifying the objectives of an organisation in relation to its strategy. the budget is made to decide how much an organisation would earn and spend and in what manner. It is a document which sets out the responsibilities of the persons engaged in, the routine of, and the forms and records required for, budgetary control. The salient features of Budget Manual are :

(i) It is a written document

(ii) It provides timetable for the preparation of each budget

(iii) It provides an Organisation Chart to show who are responsible for preparation of each functional budget and the way in which the budgets are interrelated.

(iv) It specifies the functions and responsibilities of each executive, both regarding preparation and execution of budgets.

(v) It provides a list of account codes, with full explanations of how to use them.

(vi) It includes a reporting system about the remedial action taken etc.

(e) Cost units for the Industry / Product :

(i) Automobile : Per Vehicle i.e. Number

(ii) Gas : Cubic Feet i.e. cft

(iii) Brick Works : Per 1,000 units

(iv) Power : Kilowatt Hour i.e. kWh

(v) Steel : Tonne

(vi) Transport : Tonne km or Passenger km

(vii) Chemical : Tonne or Barrel or Litre

(viii) Oil : Barrel or Litre

(ix) Brewing : Barrel or Kiloleter or Litre

(x) Cement : Tonne or Bag

Disclaimer

1. There might be some difference in the way of my presentation and ICAI presentation. I have done the presentation which is best possible to me. You may further improve upon it.
2. Though the way of calculation or presentation is different, the answers will match with the ICAI answers.
3. If you come across with any calculation mistake, typing error or logical error, then you may communicate it to Rakesh Sir on his personal email : ngp.rakesh@gmail.com

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