

## CA Intermediate (New Syllabus) Cost & Management Accounting (Paper 3) December 2021 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 ]**

Reference : Chapter 2 - Material Cost - Inventory Turnover

XYZ Ltd. uses two types of raw materials – 'Material A' and 'Material B' in the production process and has provided the following data for the year ended on 31<sup>st</sup> March, 2021 :

Particulars	Material A (₹)	Material B (₹)
Operating stock as on 01.04.2020	30,000	32,000
Purchase during the year	90,000	51,000
Closing stock as on 31.03.2021	20,000	14,000

- (i) You are required to calculate :
- (a) The inventory turnover ratio of 'Material A' and 'Material B'.
  - (b) The number of days for which the average inventory is held for both materials 'A' and 'B'.
- (ii) Based on above calculations, give your comments.  
(Assume 360 days in a year.)

**Answer 1(a) :**

**(i) Calculation of Inventory Turnover Ratio and Holding Period :**

Particulars	Material A (₹)	Material B (₹)
(a) Operating stock as on 01.04.2020	30,000	32,000
(b) Purchase during the year	90,000	51,000
(c) Closing stock as on 31.03.2021	20,000	14,000
(d) Consumption [ a + b - c ]	1,00,000	69,000
(e) Average Inventory [ (a + c) / 2 ]	25,000	23,000
(f) Inventory Turnover Ratio [ d / e ]	4 times	3 times
(g) No. of days for which inventory is held i.e. inventory holding period [ 360 days / f ]	90 days	120 days

- (ii) **Comments** : Material A has a lesser holding period than Material B. It means, Material A is moving faster than Material B.

**Question 1(b) : [ 5 Marks ]**

Reference : Chapter 15 - Budgetary Control

The Accountant of KPMR Ltd. has prepared the following budget for the coming year 2022 for its two products 'AYE' and 'ZYE' :

Particulars	Product 'AYE'	Product 'ZYE'
Production and Sales (in Units)	4,000	3,000
	Amount (in ₹)	Amount (in ₹)
Selling Price per unit	200	180
Direct Material per unit	80	70
Direct Labour per unit	40	35
Variable Overhead per unit	20	25
Fixed Overhead per unit	19	10

After reviewing the above budget, the management has called the marketing team for suggesting some measures for increasing the sales. The marketing team has suggested that by promoting the products on social media, the sales quantity of both the products can be increased by 5%. Also, the selling price per unit will go up by 10%. But this will result in increase in expenditure on variable overhead and fixed overhead by 20% and 5% respectively for both the products.

You are required to prepare flexible budget for both the products.

- (i) Before promotion on social media.
- (ii) After promotion on social media.

**Answer 1(b) :**

My Comments : Two budgets for 5 marks is unreasonable, considering the time involved in calculation and writing. This question should be asked for minimum 10 marks.

**(i) Flexible Budget (before promotion) :**

	Particulars	Product 'AYE'	Product 'ZYE'	Total
	Production & Sales (units)	4,000	3,000	
		Amount (₹)	Amount (₹)	Amount (₹)
A.	Sales Value	8,00,000 (₹ 200 x 4,000)	5,40,000 (₹ 180 x 3,000)	13,40,000
B.	Direct Materials	3,20,000 (₹ 80 x 4,000)	2,10,000 (₹ 70 x 3,000)	5,30,000
C.	Direct Labour	1,60,000 (₹ 40 x 4,000)	1,05,000 (₹ 35 x 3,000)	2,65,000
D.	Variable Overheads	80,000 (₹ 20 x 4,000)	75,000 (₹ 25 x 3,000)	1,55,000
E.	Total Variable Cost (B + C + D)	5,60,000	3,90,000	9,50,000
F.	Contribution (A - E)	2,40,000	1,50,000	3,90,000
G.	Fixed Overheads	40,000 (₹ 10 x 4,000)	30,000 (₹ 10 x 3,000)	70,000
H.	Profit (F - G)	2,00,000	1,20,000	3,20,000
I.	Profit per unit [ H / Qty. ]	50	40	

## (ii) Flexible Budget (after promotion) :

	Particulars	Product 'AYE'	Product 'ZYE'	Total
	Production & Sales (units) [ after 5% increase ]	4,200 (4,000 x 105%)	3,150 (3,000 x 105%)	
		<b>Amount (₹)</b>	<b>Amount (₹)</b>	<b>Amount (₹)</b>
A.	Sales Value [ after 10% price increase ]	9,24,000 (₹ 220 x 4,200)	6,23,700 (₹ 198 x 3,150)	15,47,700
B.	Direct Materials	3,36,000 (₹ 80 x 4,200)	2,20,500 (₹ 70 x 3,150)	5,56,500
C.	Direct Labour	1,68,000 (₹ 40 x 4,200)	1,10,250 (₹ 35 x 3,150)	2,78,250
D.	Variable Overheads [ after 20% price rise ]	1,00,800 (₹ 24 x 4,200)	94,500 (₹ 30 x 3,150)	1,95,300
E.	Total Variable Cost (B + C + D)	6,04,800	4,25,250	10,30,050
F.	Contribution (A - E)	3,19,200	1,98,450	5,17,650
G.	Fixed Overheads [ after 5% increase ]	42,000 (40,000 x 105%)	31,500 (30,000 x 105%)	73,500
H.	Profit (F - G)	2,77,200	1,66,950	4,44,150
I.	Profit per unit [ H / Qty. ]	66	53	

**Question 1(c) : [ 5 Marks ]**

Reference : Chapter 3 - Labour Cost

A skilled worker is paid a guaranteed wage rate of ₹ 150 per hour. The standard time allowed for a job is 10 hours. He took 8 hours to complete the job. He has been paid the wages under Rowan Incentive Plan.

You are required to :

- Calculate an effective hourly rate of earnings under Rowan Incentive Plan.
- Calculate the time in which he should complete the job, if the worker is placed under Halsey Incentive Scheme (50%) and he wants to maintain the same effective hourly rate of earnings.

**Answer 1(c) :****(i) Calculation of Effective hourly rate of earnings under Rowan Incentive Plan :**

Standard time allowed = 10 hours

Time taken = 8 hours; Time saved = 2 hours

	Particulars	Amount (₹)
A	Basic guaranteed wages ( ₹ 150 x 8 hours )	1,200
B	Bonus for time saved ( 2/10 x ₹ 1,200 )	240
C	Total earnings ( A + B )	1,440
D	Hours worked	8 hours
E	Effective hourly rate ( C ÷ D )	180

- (ii) Let the actual time taken to complete the job is "T" and the time saved is (10 - T)  
Effective hourly rate under the Halsey Incentive scheme

$$= \frac{(\text{Rate} \times \text{Hours Worked}) + (50\% \times \text{Time Saved} \times \text{Rate})}{\text{Hours Worked}} = ₹ 180$$

$$\frac{(\text{₹ } 150 \times T) + [50\% \times (10 - T) \times \text{₹ } 150]}{T} = ₹ 180$$

$$\begin{aligned} \therefore 150T + 750 - 75T &= 180T \\ \therefore 75T + 750 &= 180T \\ \therefore 105T &= 750 \\ \therefore T &= 750/105 = 7.14 \text{ hours (approx)} \end{aligned}$$

**Question 1(d) : [ 5 Marks ]**

Reference : Chapter 10 - Process Costing

A product passes through Process-I and Process-II.

Particulars pertaining to the Process-I are :

Materials issued to Process-I amounted to ₹ 80,000; Wages ₹ 60,000 and manufacturing overheads were ₹ 52,500. Normal loss anticipated was 5% of input. 9,650 units of output were produced and transferred from Process-I to Process-II. Input raw materials issued to Process-I were 10,000 units.

There were no opening stocks. Scrap has realizable value of ₹ 5 per unit.

You are required to prepare :

- (i) Process-I Account
- (ii) Abnormal Gain / Loss Account

**Answer 1(d) :**

**(i) Process I A/c**

Particulars	Qty.	Rate	Amount	Particulars	Qty.	Rate	Amount
To Input Material	10,000		80,000	By Normal Loss a/c (5% of 10,000)	500	5	2,500
To Wages			60,000	By Output transferred to Process II a/c	9,650	*20	1,93,000
To Manufacturing overheads			52,500				
To Abnormal Gain A/c	150	*20	3,000				
<b>Total</b>	<b>10,150</b>		<b>1,95,500</b>	<b>Total</b>	<b>10,150</b>		<b>1,95,500</b>

$$(80,000 + 60,000 + 52,500) - 2,500$$

$$\text{*Cost per unit of output} = \frac{\text{Total Cost}}{\text{Units Produced}} = \frac{\text{₹ } 1,93,000}{(10,000 - 500) \text{ units}} = ₹ 20 \text{ per unit}$$

## (ii) Abnormal Gain A/c

Particulars	Qty.	Rate	Amount	Particulars	Qty.	Rate	Amount
To Normal Loss A/c [Opportunity cost]	150	5	750	By Process I A/c (2% of 10,000)	150	20	3,000
To Costing P&L A/c [ Net gain ]			2,250				
Total	150		3,000	Total	150		3,000

**Question 2(a) : [ 10 Marks ]**

Reference : Chapter 6 - Cost Sheet

G Ltd. manufactures leather bags for office and school purposes.

The following information is related with the production of 1,000 leather bags for the month of September, 2021.

- (1) Leather sheets and cotton clothes are the main inputs and the estimated requirement per bag is two metres of leather sheets and one metre of cotton cloth. 2,000 metre of leather sheets and 1,000 metre of cotton cloths are purchased at ₹ 3,20,000 and ₹ 15,000 respectively. Freight paid on purchases is ₹ 8,500.
- (2) Stitching and finishing need 2,000 man hours at ₹ 80 per hour.
- (3) Other direct costs of ₹ 10 per labour hour is incurred.
- (4) G Ltd. have 4 machines at a total cost of ₹ 22,00,000. Machines have a life of 10 years with a scrap value of 10% of the original cost. Depreciation is charged on a straight-line method.
- (5) The monthly cost of administration and sales office staffs are ₹ 45,000 and ₹ 72,000 respectively. G Ltd pays ₹ 1,20,000 per month as rent for a 2,400 sq. feet factory premises. The administrative and sales office occupies 240 sq. feet and 200 sq. feet respectively of factory space.
- (6) Freight paid on delivery of finished bags is ₹ 18,000.
- (7) During the month, 35 kg. of scrap (cutting of leather and cotton) are sold at ₹ 150 per kg.
- (8) There are no opening and closing stocks of input materials. There is a finished stock of 100 bags at the end of the month.

You are required to prepare a cost sheet in respect of above for the month of September 2021 showing :

- (i) Cost of Raw Material Consumed
- (ii) Prime Cost
- (iii) Works/Factory Cost
- (iv) Cost of Production
- (v) Cost of Goods Sold
- (vi) Cost of Sales

Answer 2(a) :

**Cost sheet for the month of September, 2021 :**

(No. of bags manufactured = 1,000 units)

Particulars	(₹)	(₹)
<u>Direct materials consumed :</u>		
- Leather sheets	3,20,000	
- Cotton clothes	15,000	
Add : Freight and on purchases	8,500	
<b>(i) Cost of material consumed</b>		<b>3,43,500</b>
Direct wages ( ₹ 80 x 2,000 hours )		1,60,000
Direct expenses ( ₹ 10 x 2,000 hours )		20,000
<b>(ii) Prime Cost</b>		<b>5,23,500</b>
<u>Add : Factory Overheads :</u>		
Depreciation on machines [ ( ₹ 22,00,000 - 10% ) / 10 years ] / 12 months	16,500	
Apportioned cost of factory rent (see WN below)	98,000	1,14,500
<b>(iii) Works / Factory Cost</b>		<b>6,38,000</b>
Less: Realisable value of cuttings ( ₹ 150 x 35 kg.)		(5,250)
<b>(iv) Cost of Production</b>		<b>6,32,750</b>
Add : Opening stock of FG bags (not given)		0
Less : Closing stock of FG bags ( ₹ 6,32,750 x 100 / 1,000 bags )		(63,275)
<b>(v) Cost of Goods Sold</b>		<b>5,69,475</b>
<u>Add : Administrative Overheads :</u>		
- Staff salary	45,000	
- Apportioned rent for office (see WN below)	12,000	57,000
<u>Add : Selling and Distribution Overheads :</u>		
- Staff salary	72,000	
- Apportioned rent for sales office (see WN below)	10,000	
- Freight paid on delivery of bags	18,000	1,00,000
<b>(vi) Cost of Sales</b>		<b>7,26,475</b>

**WN : Apportionment of Factory Rent :**

To Factory building { ( ₹ 1,20,000 ÷ 2400 sq. feet ) x 1,960 sq. feet } = ₹ 98,000

To Administrative office { ( ₹ 1,20,000 ÷ 2400 sq. feet ) x 240 sq. feet } = ₹ 12,000

To Sales office { ( ₹ 1,20,000 ÷ 2400 sq. feet ) x 200 sq. feet } = ₹ 10,000

**Notes / Assumptions :**

Area occupied by factory building is a balancing figure = 2,400 - 240 - 200 = 1,960 sq. feet.

In absence of specific information, it is assumed that the administration overheads are general in nature and not related to production activity.

**Question 2(b) : [ 10 Marks ]**

Reference : Chapter 13 - Marginal Costing

AZ company has prepared its budget for the production of 2,00,000 units. The variable cost per unit is ₹ 16 and fixed cost is ₹ 4 per unit. The company fixes its selling price to fetch a profit of 20% on total cost.

You are required to calculate :

- (i) Present break-even sales (in ₹ and in quantity)
- (ii) Present profit-volume ratio.
- (iii) Revised break-even sales in ₹ and the revised profit-volume ratio, if it reduces its selling price by 10%.
- (iv) What would be revised sales in quantity and the amount, if a company desires a profit increase of 20% more than the budgeted profit and selling price is reduced by 10% as above in point (iii).

**Answer 2(b) :**

Variable Cost per Unit = ₹ 16

Fixed Cost per Unit = ₹ 4,

Total Fixed Cost = 2,00,000 units x ₹ 4 = ₹ 8,00,000

Total Cost per Unit = 16 + 4 = ₹ 20

Selling Price per Unit = Total Cost + Profit @ 20% = ₹ 20 + ₹ 4 = ₹ 24

Contribution per Unit = ₹ 24 - ₹ 16 = ₹ 8

$$(i) \text{ Present BEP Sales (Quantity)} = \frac{\text{Total Fixed Cost } ₹ 8,00,000}{\text{Contribution per unit } ₹ 8} = 1,00,000 \text{ units}$$

Present BEP Sales (₹) = 1,00,000 units x ₹ 24 = ₹ 24,00,000

$$(ii) \text{ Present P/V Ratio} = \frac{8}{24} \times 100 = 33.33\%$$

$$(iii) \text{ Revised Selling Price per Unit} = ₹ 24 - 10\% = ₹ 21.60$$

$$\text{Revised Contribution per Unit} = ₹ 21.60 - ₹ 16 = ₹ 5.60$$

$$\text{Revised P/V Ratio} = \frac{5.60}{21.60} \times 100 = 25.926\%$$

$$\text{Revised Break-even point (₹)} = \frac{\text{Fixed cost } 8,00,000}{\text{P/V Ratio } 25.926\%} = ₹ 30,85,705 \text{ (approx)}$$

$$(iv) \text{ Present profit} = \text{Present Contribution} - \text{Fixed Cost} \\ = (₹ 8 \times 2,00,000 \text{ units}) - ₹ 8,00,000 = ₹ 8,00,000$$

$$\text{Desired Profit} = 120\% \text{ of } ₹ 8,00,000 = ₹ 9,60,000$$

Sales required to earn desired profit at reduced sales price

$$= \frac{\text{Fixed cost} + \text{Desired profit } 8,00,000 + 9,60,000}{\text{Contribution per unit } 5.60} = 3,14,286 \text{ units (approx)}$$

$$\text{Revised sales (in ₹)} = 3,14,286 \text{ units} \times ₹ 21.60 = ₹ 67,88,578 \text{ (approx)}$$

**Note :** A student can use any other formula or approach to calculate the same answers.

**Question 3(a) : [ 10 Marks ]**

Reference : Chapter 10 - Service Costing

Paras Travels provides mini buses to an IT company for carrying its employee from home to office and dropping back after office hours. It runs a fleet of 8 mini buses for this purpose. The buses are parked in a garage adjoining the company's premises. Company is operating in two shifts (one shift in the morning and one shift in the afternoon). The distance travelled by each mini bus one way is 30 kms. The company works for 20 days in a month.

The seating capacity of each mini bus is 30 persons. The seating capacity is normally 80% occupied during the year. The details of expenses incurred for a year are as under :

Particulars	
Driver's salary	₹ 20,000 per driver per month
Lady attendant's salary (mandatorily required for each mini bus)	₹ 10,000 per attendant per month
Cleaner's salary (One cleaner for 2 mini buses)	₹ 15,000 per cleaner per month
Diesel (Avg. 8 kms. per litre)	₹ 80 per litre
Insurance charges (per annum)	2% of Purchase Price
License fees and taxes	₹ 5,080 per mini bus per month
Garage rent paid for all buses	₹ 24,000 per month
Repairs and maintenance including engine oil and lubricants (for every 5,760 kms.)	₹ 2,856 per mini bus
Purchase Price of mini bus	₹ 15,00,000 each
Life of mini bus	8 Years
Scrap value of bus at the end of life	₹ 3,00,000 each

Paras Travels charges two types of fare from the employees. Employees coming from a distance of beyond 15 kms away from the office are charged double the fare which is charged from employees coming from a distance of up-to 15 kms. away from the office. 50% of employees travelling in each trip are coming from a distance beyond 15 kms. from the office. The charges are to be based on average cost.

You are required to :

- (i) Prepare a statement showing expenses of operating a single mini bus for a year,
- (ii) Calculate the average cost per employee per month in respect of :
  - (a) Employees coming from a distance up to 15 kms. from the office
  - (b) Employees coming from a distance beyond 15 kms. from the office.

**Answer 3(a) :**

**Working Notes :**

**(1) Calculation of distance travelled by each bus p.a. :**

One way distance = 30 kms. Round trip distance = 60 kms.

Morning shift : 1 round trip to bring the employees and 1 round trip to drop the employees.

Afternoon shift : 1 round trip to bring the employees and 1 round trip to drop the employees.

Thus there are total 4 round trips in a day for each bus.

Total distance p.a. = 60 kms. x 4 round trips/day x 20 days/month x 12 months  
= 57,600 kms.



**(2) Calculation of equivalent number of employees per bus :**

Seating capacity of a bus	30 employees
(x) No. of shifts per day	2
(x) Occupancy (80% of capacity)	80%
∴ Total no. of employees using bus service	48 employees
Half fare employees (50% of 48 employees)	24 employees (50% weightage)
Full fare employees (50% of 48 employees)	24 employees (100% weightage)
Equivalent no. of employees = (50% x 24) + (100% x 24)	= 36 employees

**(i) Statement of expenses of operating a single mini bus for a year :**

Particulars	Per Bus per annum (₹)
<b>(A) Standing Charges :</b>	
Driver's salary ( 20,000 p.m. x 12 )	2,40,000
Lady attendant's salary ( 10,000 p.m. x 12 )	1,20,000
Cleaner's salary ( 15,000 p.m. x 12 x 1/2 )	90,000
Insurance charges ( 15,00,000 x 2% )	30,000
License fee, taxes etc. ( 5,080 p.m. x 12 )	60,960
Proportionate Garage Rent (24,000 p.m. x 12) / 8	36,000
Depreciation [(15,00,000 - 3,00,000) ÷ 8 years ]	1,50,000
<b>(B) Maintenance Charges :</b>	
Repairs & maintenance including engine oil and lubricants ( ₹ 2,856 / 5,760 kms x 57,600 kms )	28,560
<b>(C) Operating Charges :</b>	
Diesel ( ₹ 80 / 8 kms x 57,600 kms )	5,76,000
<b>Total Cost p.a. ( A + B + C )</b>	<b>13,31,520</b>
<b>Cost per month ( 13,31,520 / 12 )</b>	<b>1,10,960</b>

**(ii) Average cost per employee per month :**

**Equivalent cost per employee per month**

$$= \frac{\text{Total cost per month}}{\text{Total no. of equivalent employees}} = \frac{1,10,960}{36 \text{ (WN2)}} = ₹ 3,083.22$$

**A. Employee coming from distance of upto 15 km. (50% weightage)**

$$\text{Cost per month} = ₹ 3,083.22 \times 50\% = ₹ 1,541.11$$

**B. Employee coming from a distance beyond 15 km. (100% weightage)**

$$\text{Cost per month} = ₹ 3,083.22 \times 100\% = ₹ 3,083.22$$

**Question 3(b) : [ 10 Marks ]**

Reference : Chapter 5 - Activity Based Costing

A Drug Store is presently selling three types of drugs namely 'Drug A', 'Drug B', and 'Drug C'. Due to some constraints, it has decided to go for only one product line of drugs. It has provided the following data for year 2020-21 for each product line :

Particulars	Drugs Types		
	A	B	C
Revenues (in ₹)	74,50,000	1,11,75,000	1,86,25,000
Cost of goods sold (in ₹)	41,44,500	68,16,750	1,20,63,750
Number of purchase orders placed (in nos.)	560	810	630
Number of deliveries received	950	1,000	850
Hours of shelf-stocking time	900	1,250	2,350
Units sold (in Nos.)	1,75,200	1,50,300	1,44,500

Following additional information is also provided :

Activity	Description of activity	Total Cost (₹)	Cost allocation base
Drug Licence fee	Drug Licence fee	5,00,000	To be distributed in ratio 2:3:5 between A, B and C
Ordering	Placing of orders for purchases	8,30,000	2,000 purchase orders
Delivery	Physical delivery and receipt of foods	18,20,000	2,800 deliveries
Shelf stocking	Stocking of goods	32,40,000	4,500 hours of shelf-stocking time
Customer Support	Assistance provided to customers	28,20,000	4,70,000 units sold

**You are required to :**

- (i) Calculate the operating income and operating income as a percentage (%) of revenue of each product line if :
  - (a) All the support costs (other than cost of goods sold) are allocated in the ratio of cost of goods sold.
  - (b) All the support costs (other than cost of goods sold) are allocated using activity-based costing system.
- (ii) Give your opinion about choosing the product line on the basis of operating income as a percentage (%) of revenue of each product line under both the situations as above.

**Answer 3(b) :**

**(i)(a)** Statement of Operating income and Operating income as a percentage of revenues for each product line, when support costs are allocated on the basis of COGS :

Particulars	Drug A (₹)	Drug B (₹)	Drug C (₹)	Total (₹)
(a) Revenues	74,50,000	1,11,75,000	1,86,25,000	3,72,50,000
(b) Cost of Goods Sold	41,44,500	68,16,750	1,20,63,750	2,30,25,000
(c) Support cost apportioned in the ratio of COGS	16,57,800	27,26,700	48,25,500	92,10,000
(d) Operating income [a - b - c]	16,47,700	16,31,550	17,35,750	50,15,000
(e) Operating income as a % of revenue ( e/a x 100 )	22.12%	14.60%	9.32%	13.46%

**(i)(b)** Statement of Operating income and Operating income as a percentage of revenues for each product line, when support costs are allocated using ABC :

Particulars	Total (₹)	Cost Driver	Drug A (₹)	Drug B (₹)	Drug C (₹)
(a) Revenues	3,72,50,000	--	74,50,000	1,11,75,000	1,86,25,000
(b) Cost of Goods Sold	2,30,25,000	--	41,44,500	68,16,750	1,20,63,750
(c) Drug licence fee	5,00,000	2 : 3 : 5	1,00,000	1,50,000	2,50,000
(d) Ordering cost	8,30,000	Purchase orders [ 560 : 810 : 630 ]	2,32,400	3,36,150	2,61,450
(e) Delivery cost	18,20,000	No. of deliveries [ 950 : 1000 : 850 ]	6,17,500	6,50,000	5,52,500
(f) Shelf socking cost	32,40,000	Stocking hours [900 : 1250 : 2350]	6,48,000	9,00,000	16,92,000
(g) Customer support	28,20,000	No. of units sold [1752:1503:1445 ]	10,51,200	9,01,800	8,67,000
(h) Operating income	50,15,000	[ a - (b to g) ]	6,56,400	14,20,300	29,38,300
(i) Operating income as a % of revenue	13.46%	[ h / a x 100 ]	8.81%	12.71%	15.78%

**(ii) Comparison on the basis of operating income as % of revenue :**

When support costs are allocated on the basis of COGS; Drug A is the most profitable product line showing 21.12% return on sales.

However, when support costs are allocated using ABC method, then Drug C becomes the most profitable product line showing 15.78% return on sales.

Thus, the results are contradictory under the two methods and the selection of product changes due to change in the method of allocation of overheads cost.

**Question 4(a) : [ 10 Marks ]**

Reference : Chapter 8 - Contract Costing

A construction company has obtained a contract of ₹ 30 lakhs contract price.

The following details are available in respect of this contract for the year ended March 31, 2021:

Particulars	(₹)
Materials purchased	2,00,000
Materials issued from stores	8,00,000
Wages paid	1,50,000
Plant Supervisor Salary	2,40,000
Drawings and maps	50,000
Sundry expenses	30,000
Electricity charges	40,000
Plant hire expenses paid	75,000
Sub-contract cost	40,000
Materials returned to stores	35,000
Materials returned to suppliers	50,000

The following balances related to the contract for the year ended on March 31, 2020 and March 31, 2021 are available :

Particulars	As on 31.03 2020 (₹)	As on 31.03.2021 (₹)
Work certified	2,50,000	70% of Contract Price
Work uncertified	10,000	?
Materials at site	35,000	25,000
Wages outstanding	15,000	22,000
Plant hire charges outstanding	20,000	15,000

Further information are as under :

1. An additional plant was used for 270 days costing ₹ 5,00,000 with a residual value of ₹ 20,000 having life of 4 years.
2. During the year, material costing ₹ 40,000 was sold for ₹ 20,000.
3. Plant supervisor has devoted 1/3<sup>rd</sup> of his time to this contract.
4. As on 31.03.2021, 80% of the contract was completed.

You are required to prepare Contract Account and show the notional profit or loss as on 31<sup>st</sup> March, 2021 (Assume 360 days in a year).**Answer 4(a) :**

**Comment :** 80% work is completed and only 70% work is certified. It means, 10% work is uncertified. Uncertified work is to be valued at **Cost**. Similarly, opening balances should be considered while preparing Contract Account.

Contract A/c for year ending on 31.03.2021

Particulars		Amount (₹)	Particulars	Amount (₹)
To <u>Operating WIP</u> :			By Material returned to store	35,000
- Work certified	2,50,000		By Material returned to supplier	50,000
- Work uncertified	10,000	2,60,000	By Costing P&L (Loss on sale of material)	20,000
To Opening material at site		35,000	By Material Sold	20,000
To Material purchased		2,00,000	By Material at site	25,000
To Issued from stores		8,00,000	By Works cost (Bal.fig.)	17,02,000
To Wages paid	1,50,000			
Add: Closing O/s wages	22,000			
Less: Opening O/s wages	(15,000)	1,57,000		
To Plant supervisor salary ( 2,40,000 x 1/3 )		80,000		
To Drawings and maps		50,000		
To Sundry expenses		30,000		
To Electricity charges		40,000		
To Plant hire expenses	75,000			
Add : O/s at end	15,000			
Less : O/s at beginning	(20,000)	70,000		
To Sub-contract cost		40,000		
To Depreciation		90,000		
$\left[ \frac{5,00,000 - 20,000}{4 \text{ years}} \times \frac{270}{360} \right]$				
Totals		18,52,000	Totals	18,52,000
To Works cost b/d		17,02,000	By Work certified [30,00,000 x 70%]	21,00,000
To Costing P&L A/c (National profit) - Bal.fig.		6,10,750	By Work uncertified [see working below]	2,12,750
Totals		23,12,750	Totals	23,12,750

**Working Note :****Calculation of Value of work uncertified :**

Particulars	Amount (₹)
Cost incurred till date (as above) for 80% work done	17,02,000
Estimated total cost for 100% work = $\left[ \frac{17,02,000}{80\%} \right]$	21,27,500
Cost of work certified till date ( 21,27,500 x 70% )	14,89,250
Cost of uncertified work ( 21,27,500 x 10% )	2,12,750

**Crosscheck :**

$$\begin{aligned} \text{Notional Profit} &= \text{Work Certified} - \text{Cost of work certified} \\ &= 21,00,000 - 14,89,250 = ₹ 6,10,750 \end{aligned}$$

**Question 4(b) : [ 5 Marks ]**

Reference : Chapter 12 - Cost Ledger Accounting

R Ltd. showed a Net Profit of ₹ 3,60,740 as per their cost accounts for the year ended 31<sup>st</sup> March, 2021. The following information was revealed as a result of scrutiny of the figures from both the sets of accounts :

SN	Particulars	(₹)
i.	Over recovery of selling overheads in cost accounts	10,250
ii.	Over valuation of closing stock in cost accounts	7,300
iii.	Rent received credited in financial accounts	5,450
iv.	Bad debts provided in financial accounts	3,250
v.	Income tax provided in financial accounts	15,900
vi.	Loss on sale of capital asset debited in financial accounts	5,800
vii.	Under recovery of administration overheads in cost accounts	3,600

**Required :**

Prepare a reconciliation statement showing the profit as per financial records.

Answer 4(b) :

**Statement of Reconciliation**

(Reconciling the profit as per costing records with the profit as per financial records)

Particulars	(₹)	(₹)
Net Profit as per Cost Accounts ( given )		3,60,740
<b>Add :</b>		
Over recovery of selling overheads in cost accounts	10,250	
Rent received credited in financial accounts	5,450	15,700
Sub-total		3,76,440
<b>Less :</b>		
Over valuation of closing stock in cost accounts	7,300	
Bad debts provided in financial accounts	3,250	
Income tax provided in financial accounts	15,900	
Loss on sale of capital asset debited in financial accounts	5,800	
Under recovery of administration overheads in cost accounts	3,600	35,850
∴ Profit as per Financial Accounts		3,40,590

**Question 4(c) : [ 5 Marks ]**

Reference : Chapter 2 - Material Cost

What is Bill of Material? Describe the uses of Bill of Material in following departments :

- (i) Purchase Department
- (ii) Production Department
- (iii) Stores Department
- (iv) Cost / Accounting Department

**Answer 4(c) :**

**Bill of Material :** It is a detailed list specifying the types of material required, standard quantities and qualities of materials and components required for producing a product or for carrying out any job.

**Uses of Bill of Material in different department :**

- (i) Purchase Department : Materials are procured (i.e. purchased) on the basis of specifications mentioned in it.
- (ii) Production Department : Production is planned according to the nature and volume of materials required to be used. Accordingly, material requisition lists are prepared.
- (iii) Stores Department : It is used as a reference document while issuing materials to the production department.
- (iv) Cost / Accounting Department : It is used to estimate cost and profit. Actual purchase, issue and usage is compared against this document for cost control purpose.

**Question 5(a) : [ 10 Marks ]**

Reference : Chapter 14 - Standard Costing

In a manufacturing company the standard units of production for the year were fixed at 1,20,000 units and overhead expenditures were estimated to be as follows :

Particulars	Amount (₹)
Fixed	12,00,000
Semi-variable (60% expenses are of fixed nature and 40% are of variable nature)	1,80,000
Variable	6,00,000

Actual production during the month of April, 2021 was 8,000 units. Each month has 20 working days. During the month there was one public holiday. The actual overheads were as follows :

Particulars	Amount (₹)
Fixed	1,10,000
Semi-variable (60% expenses are of fixed nature and 40% are of variable nature)	19,200
Variable	48,000

You are required to calculate the following variances for the month of April, 2021 :

- i. Overhead Cost variance
- ii. Fixed Overhead Cost variance
- iii. Variable Overhead Cost variance
- iv. Fixed Overhead Volume variance
- v. Fixed Overhead Expenditure Variance
- vi. Calendar Variance

**Answer 5(a) :**

**Comment :** Question is simple but little tricky. No such question is available in ICAI module. But, it can be solved logically.

**Some Hints to Solve :**

- (a) Budgeted data is given for the **year** and actual data is given for a **month**.
- (b) Semi-variable overheads are required to be split into Fixed & Variable OH and merge them with the existing Fixed & Variable OH to calculate Std. Recovery Rates.
- (c) The data relating to labour hours is not available, hence we cannot calculate SRR/hr. It is not required also to solve this question.
- (d) Each month has 20 working days and during the month there was one public holiday. Treat this as an **extra** holiday than the planned holidays. It means, actual number of working days are  $(20 - 1) = 19$  days.



**Working Notes :**

- Budgeted Fixed Overheads p.a. = 12,00,000 + (60% x 1,80,000) = ₹ 13,08,000
- Budgeted Fixed Overheads per month = ₹ 13,08,000 / 12 months = ₹ 1,09,000
- Budgeted Output per month = 1,20,000 units / 12 months = 10,000 units
- Budgeted Variable Overheads p.a. = 6,00,000 + (40% x 1,80,000) = ₹ 6,72,000
- Budgeted Variable Overheads per month = ₹ 6,72,000 / 12 months = ₹ 56,000
- SRR/Unit for Fixed OH = Bud. OH per month / Bud. Output per month  
= ₹ 1,09,000 / 10,000 units = ₹ 10.90 per unit
- SRR/Unit for Variable OH = ₹ 56,000 / 10,000 units = ₹ 5.60 per unit
- SRR/Day for Fixed OH = Bud. OH per month / Bud. Working Days per month  
= ₹ 1,09,000 / 20 days = ₹ 5,450 per day
- Actual Fixed Overheads p.m. = 1,10,000 + (60% x 19,200) = ₹ 1,21,520
- Actual Variable Overheads p.m. = 48,000 + (40% x 19,200) = ₹ 55,680

**Answers :**

**(i) Overhead Cost Variance (i.e. total overhead cost variance) :**

$$\begin{aligned}
 &= (\text{SRR/unit} \times \text{Actual Output}) - \text{Actual Overheads} \\
 &= [ (10.90 \times 8,000) + (5.60 \times 8,000) ] - [ 1,21,520 + 55,680 ] \\
 &= [ 1,32,000 - 1,77,200 ] = ₹ 45,200 \text{ (A)}
 \end{aligned}$$

Note : Alternatively, we can also calculate it as Fixed OH Cost Variance + Variable OH Cost Variance.

**(ii) Fixed OH Cost Variance**

$$\begin{aligned}
 &= (\text{SRR/unit} \times \text{Actual Output}) - \text{Actual Overheads} \\
 &= (10.90 \times 8,000) - 1,21,520 = ₹ 34,320 \text{ (A)}
 \end{aligned}$$

**(iii) Variable OH Cost Variance**

$$\begin{aligned}
 &= (\text{SRR/unit} \times \text{Actual Output}) - \text{Actual Overheads} \\
 &= (5.60 \times 8,000) - 55,680 = ₹ 10,880 \text{ (A)}
 \end{aligned}$$

**(iv) Fixed OH Volume Variance**

$$\begin{aligned}
 &= \text{SRR/unit} \times [ \text{Budgeted Output} - \text{Actual Output} ] \\
 &= 10.90 \times ( 10,000 - 8,000 ) = ₹ 21,800 \text{ (A)}
 \end{aligned}$$

**(v) Fixed OH Expenditure Variance**

$$\begin{aligned}
 &= \text{Budgeted Overheads} - \text{Actual Overheads} \\
 &= ₹ 1,09,000 - ₹ 1,21,520 = ₹ 12,520 \text{ (A)}
 \end{aligned}$$

**(vi) Calendar Variance (it is calculated for Fixed OH only)**

$$\begin{aligned}
 &= \text{SRR/day} \times [ \text{Budgeted working days} - \text{Actual working days} ] \\
 &= ₹ 5,450 \text{ per day} \times ( 20 - 19 ) = ₹ 5,450 \text{ (A) [i.e. one day worked less]}
 \end{aligned}$$

**Question 5(b) : [ 10 Marks ]**

Reference : Chapter 4 - Overheads

XYZ Ltd. manufactures a single product. It recovers factory overheads at a pre-department rate of ₹ 20 per man-day.

During the year 2020-21, the total factory overheads incurred and the man-days actually worked were ₹ 35.50 lakhs and 1.50 lakh days respectively. Out of the amount of ₹ 35.50 lakhs, ₹ 2.00 lakhs were in respect of wages for strike period and ₹ 1.00 lakh was in respect of expenses of previous year booked in this current year. During the period, 50,000 units were sold. At the end of the period, 12,000 completed units were held in stock but there was no opening stock of finished goods. Similarly, there was no stock of uncompleted units at the beginning of the period but at the end of the period there were 20,000 uncompleted units which may be treated as 65% complete in all respects.

On investigation, it was found that 40% of the unabsorbed overheads were due to factory inefficiency and the rest were attributable to increase in the cost of indirect materials and indirect labour.

You are required to :

- (i) Calculate the amount of unabsorbed overheads during the year 2020-21.
- (ii) Show the accounting treatment of unabsorbed overheads in cost accounts and pass journal entry.

**Answer 5(b) :**

**(i) Amount of under absorption of overheads during the year 2020-21 :**

Particulars	(₹)
Total production overheads actually incurred during the year 2020-2021	35,50,000
Less: Wages paid during strike period - P&L A/c	₹ 2,00,000
Wages of previous year booked in current year	<u>₹ 1,00,000</u>
	3,00,000
Net production overheads actually incurred	32,50,000
Less : Production overheads absorbed for 1.50 lakh man-days @ ₹ 20 per man-day	30,00,000
∴ Amount of under-absorption of production overheads	2,50,000
Less : 40% of under absorbed overheads were due to factory inefficiency. This being abnormal, should be debited to the Costing Profit and Loss A/c.	1,00,000
∴ Balance 60% of under absorbed overheads attributable to increase in cost should be distributed using supplementary rate.	1,50,000

**(ii) Accounting treatment of under absorption of production overheads :**

$$\begin{aligned} \text{Supplementary Rate} &= \frac{\text{Amount of under absorption}}{\text{[ Clo. stock of FG + Clo. Equ. units of WIP + FG sold ]}} \\ &= \frac{₹ 1,50,000}{12,000 + (20,000 \times 65\%) + 50,000 \text{ units}} \\ &= ₹ 1,50,000 / 75,000 \text{ units} = ₹ 2 \text{ per unit} \end{aligned}$$

Apportionment of unabsorbed overheads of ₹ 1,50,000 over work-in-progress, finished goods and cost of sales :

Particulars	(₹)
Finished goods stock (12,000 units x ₹ 2)	24,000
Work-in-progress (13,000 units x ₹ 2)	26,000
Cost of sales (50,000 units x ₹ 2)	1,00,000
Total	1,50,000

**Journal entry for under absorption of OH**

Finished goods control A/c	Dr.	₹ 24,000	
Work-in-progress control A/c	Dr.	₹ 26,000	
Cost of Sales A/c	Dr.	₹ 1,00,000	
Costing Profit & Loss A/c	Dr.	₹ 1,00,000	
To Overheads control A/c			₹ 2,50,000

**Question 6 : Theory Questions**

**Answer any four of the following : [ 4 Que. x 5 Marks each = 20 Marks ]**

- Briefly explain the 'techniques of costing'.
- Narrate the terms 'Joint Products' and 'By-Products' with an example of each term.
- Discuss the steps involved in setting labour time standards
- What is 'Budgetary Control System' and discuss the components of the same.
- Describe the difference between 'Cost Control' and 'Cost Reduction'.

**Answer 6 :**

**(a) Techniques of costing :**

- Marginal Costing :** This technique is popularly used for managerial decision making. This technique recognises the division of cost as variable cost and fixed cost only. It is used to ascertain the effect of changes in volume on cost and profit.
- Standard Costing :** It is a technique whereby, standard costs and revenues are pre-determined and later on compared with actual costs and revenues. The difference between standard cost and actual cost is known as 'Variance' i.e. difference. These variances are analysed for its possible causes to take corrective actions for future. Standard costing is extremely helpful for cost control and is generally used along with budgetary control.
- Budgets & Budgetary Control :** This technique involves preparation of budgets and use of budgets in proper planning and overall managerial control of the organisation.
- Uniform Costing :** When a number of firms in an industry agree among themselves to follow the **same system of costing** in detail, adopting common terminology for various items and processes, then they are said to follow a system of uniform costing. It helps in better comparison of cost between different firms belonging to the same industry. The average data of the entire industry is also useful to the Government for various purposes.
- Historical Costing :** It is the ascertainment of cost, after they have been incurred. Simply speaking, it is the accounting of past cost i.e. historical cost.

**6. Absorption Costing :** It is the practice of charging all costs i.e. variable and fixed cost to the cost object i.e. goods and services. It is different from Marginal Costing, where only variable cost is charged to the cost object.

**(b) Joint Products & By Products :**

**(i) Joint Products** – Joint products represent “two or more products separated in the course of the same processing operation usually requiring further processing, each product being in such proportion that no single product can be designated as a major product”.

In other words, two or more products of equal importance, produced, simultaneously from the same process, with each having a significant relative sale value are known as joint products.

For example, in the petroleum oil industry, petrol, diesel, fuel oil, lubricants, paraffin, asphalt and kerosene are all produced from crude petroleum. These are known as joint products.

**(ii) By-Products** - These are defined as “products recovered from the common production process while producing some major products, but they have relatively lower sale value.” Thus, by-products emerge as a result of processing operation of another product or they are produced from the scrap or waste of materials of a process. In short, a by-product is a secondary or subsidiary product which emanates as a result of manufacture of the main product and it has very low economic value.

Examples of by-products are bagasse, molasses in the manufacture of main product sugar or tar, ammonia and benzole obtained on carbonisation of coal.

**(c) Procedure of Setting Labour Time Standards :**

The following are the steps involved in setting labour standards :

- 1) Standardisation :** Products to be produced are decided based on production plan and customer's order.
- 2) Labour specification:** Types of labour and labour time is specified. Labour time specification is based on past records and it takes into account normal wastage of time.
- 3) Standardisation of methods :** Selection of proper machines to use proper sequence and method of operations.
- 4) Manufacturing layout :** A plan of operation for each product listing the operations to be performed is prepared.
- 5) Time and motion study :** It is conducted for selecting the best way of completing the job or motions to be performed by workers and the standard time which an average worker will take for each job. This also takes into account the learning efficiency and learning effect.
- 6) Training and trial :** Workers are trained to do the work and time spent at the time of trial run is noted down.

**(d) Budgetary Control System :** It is the system of management control and accounting in which all the operations are forecasted and planned in advance to the extent possible and the actual results are compared with the forecasted and planned results. It is the process of exercising overall managerial control with the help of budgets.

**Components of Budgetary Control System :** The policy of a business for a defined period is represented by the master budget, the detailed components of which are given in a number of individual budgets called functional budgets. 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.

**(e) Difference between Cost Control & Cost Reduction :**

<b>Cost Control</b>	<b>Cost Reduction</b>
Cost control aims at maintaining the costs in accordance with the established standards.	Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to improvise them continuously.
Cost control seeks to attain lowest possible cost under existing conditions.	Cost reduction recognises no condition as permanent, since a continuous change will result in lower cost.
In case of cost control, emphasis is on past and present.	In case of cost reduction, emphasis is on present and future.
Cost control is a preventive function.	Cost reduction is a corrective function. It operates even when an efficient cost control system exists.
Cost control ends when targets are achieved.	Cost reduction has no visible end and it is a continuous process.

\* \* \* \* \*