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Scanner Appendix

CA Inter Group - II
(Solutions of May - 2023 and
Questions of November - 2023)

Paper - 4 : Cost and Management Accounting

Chapter - 1 : Introduction to Cost and Management Accounting

9

Cost Objects

2023 - May [6] (a)

Answer:

Cost object is anything for which a separate measurement of cost is required.

It may be a product, a service, a project, a customer, a brand category, an activity or a programme etc.

Example of Cost objects are:

Product: Smart phone, SUV Car, Book etc.

Service: An airline flight from Delhi to Mumbai, Utility bill payment facility etc.

Project: Metro Rail project, Road project etc.

Activity: Quality inspection of materials, placing of orders etc.

Process: Refinements of crudes in oil refineries.

11

Classification of Costs

2023 - Nov [6] (a) Answer the following:

Explain very briefly the following terms used in Cost and Management Accounting:

- (i) Pre-determined Cost
- (ii) Estimated Cost
- (iii) Imputed Cost
- (iv) Discretionary Cost

(5 marks)

Chapter - 2 : Material Cost

12**Valuation of Material Issues**

2023 - May [2] (a)

Answer:

⇒ **Calculation of Raw Material Consumption:**

Particulars	Jan.	Feb.	March	April	Total
Working days (a)	25	24	26	25	–
Prod. per day (b)	50	55	60	52	–
Total prod. (c = a . b)	1,250	1,320	1,560	1,300	5,430
Total consumption of raw mat. @ 4 kg p.a.	5,000	5,280	6,240	5,200	21,720

⇒ **Calculation month wise quantity and value of material purchased:**

Total material purchased over 4 months

= Raw material consumption + op. stock – Cl. stock

= 21,720 + 5,100 – 6,020

= 20,800 kgs

Particulars	Jan.	Feb.	March	April	Total
Raw material purchases (% of total purchases)	21%	26%	30%	23%	
Raw material purchases	4,368	5,408	6,240	4,784	20,800
Purchase price	10	12	13	11	
Purchase value	43,680	64,896	81,120	52,624	2,42,320

Store Price Ledger by using FIFO method.

Months	particulars	Receipts			Issue			Balance			
		Qty	Rate	Amount (₹)	Qty	Rate	Amount (₹)	Qty	Rate	Amount (₹)	
Jan	Opening							6,020	10.5	63,210	
	Purchases	4,368	10	43,680				6,020	10.5	63,210	
								4,368	10	43,680	
	Consumption				5,000	10.5	52,500	1,020	10.5	10,710	
Feb								4,368	10	43,680	
	Purchases	5,408	12	64,896				1,020	10.5	10,710	
								4,368	10	43,680	
								5,408	12	64,896	
						1,020	10.5	10,710	108	10	1,080
						4,260	10	42,600	5,408	12	64,896

March	Purchase	6,240	13	81,120				108	10	1,080	
	Consumption							5,408	12	64,896	
								6,240	13	81,120	
					108	10	1,080				
					5,408	12	64,896				
					724	13	9,412	5,516	13	71,708	
April	Purchases	4,784	11	52,624				5,516	13	71,708	
	Consumption							4,784	11	52,624	
								5,200	13	67,600	316
							4,784	11	52,624		
									56,732		

2023 - Nov [6] (b) (i), (iv) State with reasons whether the following independent statements are **true** or **false**:

- (i) Under LIFO method, in the period of falling prices, lower income is reported and income-tax liability is reduced.
- (iv) Simple average pricing method is suitable when quantity purchased under each lot is different and prices fluctuate considerably.

(1 mark each)

6

Inventory Control By Setting Quantitative Levels

2023 - Nov [1] {C} (a) Answer the following:

(a) ABC Limited manufactures a product 'AM25' using material 'CEE'.

The following information is available regarding material 'CEE':

Purchase price per unit	₹ 300
Cost of placing an order	₹ 150
Carrying cost per unit per annum	6% of purchase price
Consumption of material 'CEE' per annum	1,94,400 units
Lead time	Average 6 days, Maximum 8 days, Minimum 4 days

Maximum consumption of material 'CEE' per day is 200 kg more than the average consumption per day.

Required:

Calculate the following in relation to material 'CEE':

- (i) Economic Order Quantity.
- (ii) Reorder Level
- (iii) Maximum Stock Level.

(Assume 360 days in a year)

(5 marks)

9***Inventory Control - On the basis of Relative Classifications***

2023 - Nov [6] (b) (ii) State with reasons whether the following independent statement is true or false:

Under VED analysis, inventories are classified on the basis of cost of individual items. (1 mark)

2***Materials Procurement Procedure***

2023 - Nov [6] (b) (iii) State with reasons whether the following independent statement is true or false:

Material requisition note is prepared by the store keeper. (1 mark)

4***Material Storage and Records***

2023 - Nov [6] (b) (v) State with reasons whether the following independent statement is true or false:

Bin card and stores ledger are maintained by the purchasing department. (1 mark)

Chapter - 3 : Employee Cost and Direct Expenses**8*****System of Wage Payment and Incentive (Premium Bonus Method)***

2023 - May [1] {C} (b)

Answer:

⇒ **Calculation of Weekly earnings of one worker under following systems:**

⇒ Existing time rate = normal working hrs. × normal working rate + (Late shift hrs. × Late shift rate)
= (48 × 150) + (12 × 300)
= 10,800

⇒ Rowan Premium Plan

$$= (\text{Time taken} \times \text{Rate per hr.}) + \left(\frac{\text{Time Saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{rate} \right)$$

$$= (48 \times 150) + \left(\frac{27}{75} \times 48 \times 150 \right)$$

$$= 9,792$$

$$\text{Time allowed} = 100 \times 7.5/10 = 75 \text{ hours}$$

$$\text{Time saved} = 75 - 48 = 27 \text{ hours}$$

⇒ Halsey Premium Plan (50%)

$$= \text{Time taken} \times \text{Time rate} + 50\% \text{ of time saved} \times \text{Rate}$$

$$= 48 \times 150 + 50\% \text{ of } 27 \times 150$$

$$= 9,225$$

2023 - Nov [1] {C} (b) A worker took 60 hours to complete a job in a factory. The normal rate of wages is ₹ 80 per hour. The worker is entitled to receive bonus according to the Halsey Premium Plan. Factory overhead is recovered on the job at ₹ 60 per man hour actually worked. The factory cost of the job is ₹ 37,280 and material cost of the job is ₹ 28,400.

Required:

- (i) Calculate the standard time for completing the job and effective hourly rate under the Halsey Premium Plan.
- (ii) Calculate the effective rate of earnings per hour if wages would have been paid under the Rowan Plan. (5 marks)

11

Employee (Labour) Turnover

2023 - May [5] (c)

Answer:

High Employee Turnover increase the cost of production:

1. Additional cost of new workers, such as cost of training, unproductive hours.
2. Loss of material as new employee is not an expert and other breakages and scrap.
3. Due to inefficiency of new workers, extra wages cost and overheads.

10***Efficiency Rating Procedures***

2023 - Nov [6] (c) What do you mean by employee productivity? Point out the factors which must be taken into consideration for increasing employee productivity. (5 marks)

Chapter - 4 : Overheads - Absorption Costing Method**9*****Concept Related to Capacity***

2023 - May [6] (b)

Answer:

Practical capacity:

It is defined as actually utilised capacity of a plant. It is also known as operating capacity. This capacity takes into account loss of time due to repairs, maintenance, minor breakdown, idle time, setup time, normal delays, Sunday and holidays, stock taking etc. Generally, practical capacity is taken between 80 to 90% of the rated capacity. It is also used as a base for determining overhead rates. Practical capacity is also called net capacity or available capacity.

Normal capacity:

Normal capacity is the volume of production or services achieved or achievable on an average over a period under normal circumstances taking into account the reduction in capacity resulting from planned maintenance.

4***Methods of Absorbing Overheads to various Products or Jobs***

2023 - May [6] (d)

Answer:

Cost of Service Department	Basis
Maintenance and Repair Shop	Machine hours
Hospital and Dispensary	No. of employees

Fire Protection	Capital value of machine
Stores Department	Material requisition
Transport Department	Crane hours
Computer Section	Computer hours
Power House	Horse power
Tool Room	Machine hours
Inspection	Inspection hours
Time-keeping	No. of employees

2023 - Nov [3] (a) HCP Ltd. is a manufacturing company having two production department, P and Q and two service departments, R and S. The budgeted cost information for the month of October 2023 is furnished below:

	₹	Production Departments		Service Departments	
		P ₹	Q ₹	R ₹	S ₹
Indirect material	1,77,500	94,750	49,750	18,270	14,730
Indirect labour	1,55,000	35,000	75,000	15,000	30,000
Factory Rent	75,000				
Depreciation on machinery	37,500				
Power	96,000				
Security Expense for Factory Premises	24,000				
Insurance-machinery	12,000				

Supervisor Expenses	48,000				
Additional information:					
Floor Area (Sq. metres)	1250	750	200	300	
Net book value of machinery (₹)	21,00,000	5,00,000	1,00,000	3,00,000	
H.P. of machines	800	200	80	120	
Machine hours	4,000	1,000	600	800	
Number of employees	10	30	6	4	
Labour hours	2,000	6,000	1,200	600	

The overhead cost of the two service department are distributed using step method in the same order viz. R and S respectively on the following basis:

Department R	Number of employees
Department S	Machine hours

Required:

- (i) Prepare a statement showing distribution of overheads to various departments, clearly showing the basis of distribution.
- (ii) Calculate the total budgeted overheads for both production departments after the service departments have been re-apportioned to them.
- (iii) Calculate the most appropriate overhead absorption rate for each of the production department. (10 marks)

Chapter - 5 : Activity Based Costing**4*****Practical Applications of ABC*****2023 - May [4] (b)****Answer:**

Calculation of overhead absorption rate per labour hour (under absorption costing system)

$$\text{OAR/Labour} = \frac{\text{Total overheads}}{\text{Total labour hours}}$$

$$= \frac{33,75,000}{(7,500 + 7,200 + 7,800)}$$

$$= \frac{33,75,000}{22,500}$$

$$= ₹ 150$$

⇒ **Cost statement under ABC**

Particulars	A	B	C
Output	50,000	45,000	62,000
Total OHs Cost (W.N.)	11,06,022	10,05,563	12,63,415
∴ OH cost/unit (Total OH/Output)	22.12	22.35	20.38

Working note:

Activity	Cost	Cost Driver	Ratio	A	B	C
Rent & Taxes	8,63,500	Floor Space	50:45:62	2,75,000	2,47,500	3,41,000
Elect. Exp.	10,66,475	Power cars	32:28:40	3,41,272	2,98,613	4,26,590
Indirect Lab.	13,16,250	DLH's	75:72:78	4,38,750	4,21,200	4,56,300
Repair & point	1,28,775	DMH's	60:45:46.5	51,000	38,250	39,525
Total OH Cost				11,06,022	10,05,563	12,63,415

2023 - May [6] (c)

Answer:

Meaning of Activity Based Management:

The term activity based management is used to describe the cost management application of ABC. The use of ABC as a costing tool to manage cost at activity level is known as Activity Based Cost Management (ABM). ABM is a discipline that focuses on the efficient and effective management of activities as the route to continuously improving the value received by customers. ABM utilises cost information gathered through ABC.

Activity Based Management can be used in the following ways:

1. **Cost reduction:** ABM helps the organisation to identify cost against activities and to find opportunities to streamline or reduce the costs or eliminate the entire activity, especially if there is no value added.
2. **Business Process Re-engineering:** Business process re-engineering involves examining business processes and making substantial changes to how organisation currently operates.
3. **Benchmarking:** Benchmarking is a process of comparing of ABC derived activity costs of one segment of company with those of other segments. It requires uniformity in the definition of activities and measurement of their costs.

2023 - Nov [4] (a) JH Plastics Limited manufactures three products S, M and L. To date, simple traditional absorption costing system has been used to allocate overheads to products. Total production overheads are allocated on the basis of machine hours. The machine hour rate for allocating production overheads is ₹ 240 per machine hour under the traditional absorption costing system. Selling prices are calculated by adding mark up of 40% of the product cost. Information related to products for the most recent year is as under:

	Products		
	S	M	L
Units produced and sold	7,500	12,500	9,000
Direct material cost per unit (₹)	158	179	250
Direct labour cost per unit (₹)	40	45	60
Machine hours per unit	0.30	0.40	0.50
Number of Machine setups	120	120	160
Number of purchase orders	90	135	125
Number of inspections	100	160	140

The management wishes to introduce activity-based method (ABC) system of attributing production overheads to products and has identified major cost

pools for production overheads and their associated cost drivers as follows:

Cost pool	Amount	Cost driver
Purchasing Department Cost	₹ 7,00,000	Number of Purchase orders
Machine setup Cost	₹ 9,00,000	Number of Machine setups
Quality Control Cost	₹ 6,56,000	Number of inspections
Machining Cost	₹ 5,64,000	Machine hours

Required:

- (i) Calculate the total cost per unit and selling price per unit for each of the three products using:
 - (a) The traditional costing approach currently used by JH Plastics Limited;
 - (b) Activity based costing (ABC) approach.
- (ii) Calculate the difference in selling price per unit as per (a) and (b) above and show which product is under-priced or over-priced. (10 marks)

2

Terms used in ABC

2023 - Nov [6] (e) Answer the following:

What is meant by cost driver? Give its different categories. Suggest suitable cost drivers (at least **two**) in the following business functions:

- (i) Distribution
- (ii) Research and Development
- (iii) Customer services (5 marks)

Chapter - 6 : Cost Sheet

2

Cost Sheet/Statement

2023 - May [3] (b)

Answer:

Cost sheet for the month of April, 2023

Particulars	Amount	Amount
Opening stock of raw materials	42,500	
(+) Purchase of raw materials	6,95,000	
(+) Carriage Inward	36,200	
(-) Closing stock of raw materials	(38,600)	
Raw materials consumed		7,35,100
Direct wages paid	3,22,800	
Royalty paid for production	35,800	
Purchase of special designs, moulds (1,53,600/12)	12,800	
Power, fuel and haulage	70,600	
Prime Cost		11,77,100
Salary and wages for supervisor and foreman	28,000	
(+) OWIP	42,500	
(-) CWIP	(42,800)	
Factory Cost		12,04,800
R & D for improving the prod. process	31,680	
Primary packaging cost	6,920	
Cost of production		1,24,3400
(+) Op. stock of FG (2,500 × 8.5)	20,125	
(-) Cl. stock of FG (2,500 + 1,52,000 - 1,52,600. 8.18 (12.43 L/1.52L) = 8.18	15,543	
Cost of goods sold		12,47,982

Admin. OHs (assumed as general in nature)	46,765	
Selling OHs (1,52,600.0.2)	30,520	
Cost of Sales		13,25,267

Calculation of selling price per unit:

Let sales be x and profit = 0.2 x

Cost of sales + profit = Sales

$$13,27,267 + 0.2 x = x$$

$$x = 16,56,584$$

$$\therefore \text{SP/Unit} = 16,56,584/1,52,600 = 10.86$$

2023 - Nov [2] (a) The following data relates to the manufacture of product BXE for the year ended 31st March, 2023:

	Amount (₹)
Value of stock as on 1 st April, 2022	
Raw materials	27,00,000
Work in progress	10,60,000
Finished Goods	25,00,000
Material purchased	2,48,00,000
Freight inward	7,50,000
Direct wages	42,00,000
Power & Fuel	18,75,000
Cost of special drawings	3,60,000
Trade Discount	4,50,000
Insurance on material procured	15,000
Rent of Factory Building (1/5 th used for office purpose)	7,00,000
Depreciation on machinery	6,25,000
Depreciation on Delivery Vans	1,20,000
Consumable stores and indirect wages	15,20,000
Quality Control cost	9,00,000
Primary packing cost	12,90,000

General Administrative overheads (excluding rent of building)	17,50,000
Salary paid to Marketing Staff	9,60,000
Packing cost for transportation	1,84,000
Value of stock as on 31 st March, 2023	
Raw materials	32,60,000
Work in progress	11,80,000
Finished Goods	28,38,000

Additional Information:

- Further, some of the finished product was found defective and the defective products were rectified by incurring expenditure of additional factory overheads to the extent of ₹ 33,600. The cost of rectification is not included in details mentioned above.
- An amount of ₹ 1,20,600 was realised by selling scrap and waste generated during the year.

Prepare Cost sheet for the year ended 31st March, 2023 showing:

- Prime cost,
- Factory cost,
- Cost of production,
- Cost of goods sold, and
- Cost of sales.

(10 marks)

2023 - Nov [5] (b) The following data relate to the manufacture of a product 'VD-100' during the month of October 2023:

Good units produced	12,600
Units Sold	11,800
Direct wages	₹ 8,82,000
Administrative Overheads	₹ 4,72,000
Selling price per unit	₹ 416

Each unit produced requires 2 kg. of material 'Z'. Cost of material 'Z' is ₹ 72 per kg. 10% of the production has been scrapped as bad and fetches ₹ 45

per unit. Factory overheads are 80% of wages. Selling and distribution overheads are ₹ 54 per unit sold. There is no opening or closing stock of material and work in progress.

You are required to find out total cost of sales and profit for the month of October 2023. (6 marks)

Chapter - 7 : Cost Accounting Systems

1

Non Integrated Accounting System

2023 - May [5] (b)

Answer:

	Financial Accounting	Cost Accounting	Difference	Under/Over-recovery	Effect on Cost Accounting Profit	Net Effect* on Cost Accounting Profit
	₹	₹	₹			
(i) Factory Overhead	94,750	90,000	4,750	Under-recovery	Increased	To be reduced/ deducted
(ii) Administrative Overhead	60,000	57,000	3,000	Under-recovery	Increased	To be reduced/ deducted
(iii) Selling Overhead	55,000	61,500	-6,500	Over-recovery	Decreased	To be added
(iv) Opening Stock	17,500	22,500	-5,000	Over valuation	Decreased	To be added
(v) Closing Stock	12,500	15,000	-2,500	Over valuation	Increased	To be reduced/ deducted

*Taking Cost Accounting Profit as base

(Under recovery and over recovery with effect are answered by the candidate, or if under recovery and over recovery with treatment (net effect) are answered, due credit shall be given in both cases).

2

Integrated (Or Integral) Accounting System

2023 - Nov [5] (c) Construct journal entries in the following situations assuming that cost and financial transactions are integrated:

(i) Purchase of raw material	₹ 4,40,000
(ii) Direct Material issued to production	₹ 3,60,000
(iii) Wages charged to production	₹ 80,000
(iv) Manufacturing overheads charged to production	₹ 1,32,000

(4 marks)

Chapter - 8 : Unit and Batch Costing

5	Economic Batch Quantity (EBQ)
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2023 - May [1] {C} (a)

Answer:

⇒ Calculation of Economic Batch Quantity:

$$EBQ = \frac{\sqrt{2 \cdot 1,35,000 \cdot ₹3,375}}{5} = 13,500 \text{ units}$$

⇒ Calculation of additional cost incurred if batch quantity is 7,500 units:

Particulars	Batch Size = 13,500	Batch Size = 7,500
Total Setup Cost	No. of setup = $\frac{1,35,000}{13,500}$ = 10 = 10 × 3,375 = 33,750	No. of setup = $\frac{1,35,000}{7,500}$ = 18 = 18 × 3,375 = 60,750
Total Carrying Cost	$\frac{1}{2} \times 13,500 \times 5 = 33,750$	$\frac{1}{2} \times 7,500 \times 5 = 18,750$
Total Cost	67,500	79,500

Additional Cost = 79,500 - 67,500 = 12,000

Chapter - 9 : Job Costing

1	Job Costing
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2023 - Nov [6] (d) (iv) Explain very briefly the following term:

(iv) Job Costing (1 mark)

Chapter - 10 : Process and Operation Costing

3

Treatment of Normal, Abnormal Loss and Abnormal Gain**2023 - May [6] (e)****Answer:****Treatment of Normal loss, abnormal loss and abnormal gain in process costing:**

1. **Normal Process Loss:** It is also known as Normal wastage. It is defined as the loss of material which is inherent in the nature of work. Such a loss can be reasonably anticipated from the nature of the material. It is unavoidable because of nature of the material or process. It also includes units withdrawn from the process for test or sampling. The cost of normal loss in practice is absorbed by the goods produced under the process.
2. **Abnormal Process Loss:** It is known as abnormal wastage. It is defined as the loss in excess of the pre determined loss. Such a loss cannot be estimated in advance. The cost of abnormal process loss units is equal to the cost of a good unit. The total cost of abnormal process loss is credited to the process account from which it arises. It's treated as part of production cost. Total cost of abnormal loss is debited to costing P/L account.
3. **Abnormal Process Gain:** The actual production exceeds the expected figures, then abnormal gain arises. Under such a situation, the difference between actual and expected loss or actual and expected production is know as abnormal gain. The process account under which abnormal gain arises is debited with the abnormal gain and credited to abnormal gain account which will be closed by transferring to costing P/L account.

2023 - Nov [4] (c) A product passes through two processes; Process A and Process B.

The output of Process A is treated as input of Process B.

The following information has been furnished:

	Process A	Process B
Input Material 78,000 kg. @ ₹ 5	₹ 3,90,000	–
Indirect Material	–	₹ 34,320
Wages	₹ 2,85,000	₹ 3,30,000
Overhead	₹ 1,67,400	₹ 1,11,600
Output transferred to Process B	68,640 kgs	
Transfer to Finished Stock	–	69,000 kgs
Normal loss of input material (weight in kgs.)	7,800 kgs	240 kgs

There is no realisable value for normal loss. No stock of raw materials on work-in-process was left at the end.

You are required to prepare the Process account for each Process.

(5 marks)

1

Meaning of Process Costing

2023 - Nov [6] (d) Explain very briefly the following term:

(v) Process Costing

(1 mark)

Chapter - 11 : Joint Product and By Product

2

Methods of Apportionment of Joint Cost to Joint Products

2023 - Nov [1] {C} (c) XYZ Limited manufactures three joint products A, B and C from a joint process. Product B is sold at split off point whereas product A and C are sold after further processing. 10% of the quantity of product A is lost in further processing. Data regarding these products for the year ending 31st March, 2023 are as follows:

	A	B	C
Number of units produced and sold	3,60,000	2,10,000	4,50,000
Selling price per unit at split off point	—	₹ 6	—
Selling price per unit after further processing	₹ 9.50	—	₹ 12
Further processing costs	₹ 8,60,000	—	₹ 10,40,000

The joint production cost upto the split off point at which A, B and C become separable products is ₹ 57,26,000.

Required:

- (i) Prepare a statement showing apportionment of joint cost to the products using Net realizable value method.
- (ii) Assume XYZ Limited has received an offer from D Limited to purchase product 'A' at the split off point at ₹ 7 per unit and another company PQR Limited has offered to purchase product 'C' at split off point at ₹ 9 per unit.

Advise whether these offers should be accepted or not? (5 marks)

1***Meaning of Joint Products and By-Products***

2023 - Nov [6] (d) Explain very briefly the following terms:

- (iii) Co-Products (1 mark)

Chapter - 12 : Service Costing**8*****Costing of Toll Roads***

2023 - May [1] {C} (d)

Answer:

Working Notes:

- (1) Calculation of equivalent numbers of Light weight vehicles (when no concession is provided on return journey)

Type of vehicle	Monthly traffic (A)	Return traffic (B)	Ratio (C)	Equivalent light weight [(A + B) × C]
Light weight	45,000*	45,000	1	90,000
Medium weight	12,000	12,000	2.5	60,000
Heavy weight	10,000	10,000	5	<u>1,00,000</u>
				2,50,000

*50,000 light vehicles less 10% exempted vehicles.

- (2) Calculation of equivalent numbers of Light weight vehicles (when concession is provided on return journey)

Type of vehicle	Monthly traffic (A)	Return traffic (B)	Ratio (C)	Equivalent light weight [(A + B) × C]
Light weight	45,000*	41,625 [45,000 - (45,000 × 30% × 25%)]	1	86,625
Medium weight	12,000	12,000	2.5	60,000
Heavy weight	10,000	10,000	5	<u>1,00,000</u>
				2,46,625

(i) Calculation of toll rate for each type of vehicle:

Total cost to cover ÷ Equivalent type of vehicles
 (₹ 59,09,090 + 10% of ₹ 59,09,090) ÷ 2,50,000 equivalent vehicles (Refer working note 1)
 = 65,00,000 ÷ 2,50,000 = ₹ 26

Toll rate for:

Light weight vehicle = ₹ 26

Medium weight vehicle = ₹ 26 × 2.5 = ₹ 65

Heavy weight vehicle = ₹ 26 × 5 = ₹ 130

(ii) Calculation of toll rate for each type of vehicle:

Revenue earned from Light weight vehicle in (i) above
 = 90,000 vehicles × ₹ 26 = ₹ 23,40,000

New toll rate to maintain the same revenue from Light weight vehicle

$$= ₹ 23,40,000 \div 86,625 \text{ (Refer working note-2)} = ₹ 27.01$$

Light weight vehicle = ₹ 27.01

$$\text{Rate to be charged from 13,500 light weight vehicles} = 27.01 \times 0.75 = 20.26$$

Alternative presentation:

(ii) Toll rate to be charged from light weight vehicles if concession applicable:

$$\text{Revenue share in light vehicles} = 90,000 \times 26 = ₹ 23,40,000$$

Suppose rate is x, then outward journey 45,000 x; return journey (45,000 - 30% of 45,000) + 13,500 (x - 0.25)

$$45,000x + 31,500x + 13,500 (0.75x) = ₹ 23,40,000$$

$$\text{Toll rate to be charged from light weight vehicles: } 86,625x = ₹ 23,40,000 = ₹ 27.01$$

Rate to be charged from 76,500 light weight vehicles @ 27.01; revenue will be ₹ 20,66,494

$$\text{Rate to be charged from 13,500 light weight vehicles} = 27.01 \times 0.75 = 20.26 \text{ revenue will be ₹ 2,73,506}$$

5

Costing of Hotels and Lodges

2023 - Nov [3] (b) Royal Hotel offers three types of rooms to its guests - Deluxe Room, Executive Room and Suite Room. Other information is as follows:

	Deluxe Room	Executive Room	Suite Room
Room Tariff per day	₹ 1,500	₹ 2,400	₹ 3,800
No. of rooms	20	10	4
Average occupancy during the year	80%	60%	75%
Housekeeping expenses per day	₹ 280	₹ 320	₹ 425

The hotel provides complimentary breakfast facility to its executive room and suite room guests while swimming pool facility is provided free of cost only to suite room guests.

The restaurant and swimming pool is run by a contractor. The contractor recovers charges of ₹ 150 per person for breakfast and ₹ 200 per person for using swimming pool facility from Royal Hotel. Besides the above-mentioned charges, annual fixed expenses are as follows:

Salaries to staff ₹ 57,60,000

Electricity Expenses ₹ 24,00,000

Salaries to staff are apportioned to Deluxe Room, Executive Room and Suite Room in the ratio of 25 : 35 : 40 and electricity expenses are to be apportioned in proportion to occupancy.

You are required to calculate the total profit of each room type on annual basis.

Note: Assume 360 days in a year and double occupancy in each category of room. (10 marks)

Chapter - 13 : Standard Costing

7

Comprehensive Questions

2023 - May [5] (a)

Answer:

⇒ **Calculation of Standard Price per kg and Standard Quantity of raw material:**

$$\begin{aligned}
 \text{Machine price variance} &= (\text{SP} - \text{AP}) \cdot \text{Actual Material purchased} \\
 12,500 &= (\text{SP} - 12.5) \cdot 25,000 \\
 12,500 &= 25,000 \text{ SP} - 3,12,500 \\
 \text{SP} &= ₹ 13 \\
 \text{Material Cost Variance} &= (\text{SQ} \cdot \text{SP}) - (\text{AQ} \cdot \text{AP}) \\
 -1,800 &= (\text{SQ} \cdot 13) - 3,12,500 \\
 \text{SQ} &= 23,900 \text{ kg}
 \end{aligned}$$

⇒ **Material Usage Variance:**

$$= (\text{Std. Q for Actual Output} - \text{Actual Q}) \cdot \text{SP}$$

$$= (23,900 - 25,000) \cdot 13$$

$$= ₹ 14,300 \text{ (A)}$$

$$\text{Labour Cost Variance} = \text{Standard Cost} - \text{Actual Cost}$$

$$= (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

$$= ₹ 2,39,000 - ₹ 2,30,000$$

$$= ₹ 9,000 \text{ (F)}$$

$$\text{Labour Efficiency Variance} = \text{Standard Cost of Standard Time for Actual Production} - \text{Standard Cost of Actual Time}$$

$$= (\text{SH} \times \text{SR}) - (\text{AH} \times \text{SR})$$

Or

$$= (\text{SH} - \text{AH}) \times \text{SR}$$

$$= ₹ 50 \times [4,780 \text{ hrs.} - 5,000 \text{ hrs.}]$$

$$= ₹ 11,000 \text{ (A)}$$

$$\Rightarrow \text{Fixed Overhead Cost Variance} = \text{Fixed Overhead absorbed} - \text{Actual Fixed OHs}$$

$$\text{Fixed OH absorption rate} = \frac{\text{Budgeted OHs}}{\text{Budgeted output}}$$

$$= \frac{(76,480/4)}{2,00,000}$$

$$= 0.0956/\text{unit}$$

$$= \{(0.0956 \cdot 1,91,200) - 19,500\}$$

$$= ₹ 1,221 \text{ (A)}$$

$$\text{Fixed Overhead Expenditure Variance} = \text{Budgeted Fixed Overheads} - \text{Actual Fixed Overheads}$$

$$= ₹ 19,120 - ₹ 19,500$$

$$= ₹ 380 \text{ (A)}$$

$$\text{Fixed Ohs Expenditure variance} = (\text{Budgeted Fixed OH} - \text{Actual Ohs})$$

$$= 18,279 - 19,120$$

$$= 841 \text{ (A)}$$

6**Computation of Variances: Overhead Variance**

2023 - Nov [5] (a) PQR Alloys Ltd. uses a standard costing system.
Budgeted information for the year:

Budgeted output	84,000 units
Variable Factory Overhead per unit	₹ 16
Standard time for one unit of output	0.80 machine hour
Fixed factory overheads	₹ 6,72,000
Actual results for the year:	
Actual output	87,600 units
Variable Overhead efficiency variance	₹ 67,200 (A)
Actual Fixed factory overheads	₹ 7,05,000
Actual variable factory overheads	₹ 14,37,000

Required:

Calculate the following variances clearly indicating Adverse (A) or Favourable (F):

- (i) Variable factory overhead expenditure variance.
- (ii) Fixed factory overhead expenditure variance.
- (iii) Fixed factory overhead efficiency variance.
- (iv) Fixed factory overhead capacity variance. (10 marks)

Chapter - 14 : Marginal Costing**5****Margin of Safety**

2023 - May [1] {C} (c)

Answer:

- (i) **Calculation of Break-even Sales in value:**
= Fixed Cost ÷ P/V Ratio

$$= ₹ 12,60,000 \div 30\% = ₹ 42,00,000$$

(ii) **Calculation of Total Sales value:**

Sales value (S) = Break-even Sales + Margin of Safety

$$\text{Or, } S = 42,00,000 + 0.25 S$$

$$\text{Or, } 0.75 S = 42,00,000$$

$$\text{Or, } S = 42,00,000 \div 0.75$$

$$\text{Or, Sales} = ₹ 56,00,000$$

(iii) **Calculation of proposed sales value to earn present profit:**

Present profit = Sales – Variable Cost – Fixed Cost

$$= ₹ 56,00,000 - 70\% \text{ of } 56,00,000 - ₹ 12,60,000$$

$$= ₹ 56,00,000 - ₹ 39,20,000 - ₹ 12,60,000$$

$$= ₹ 4,20,000$$

$$\text{Proposed Sales value (S)} = 0.7S + (90\% \text{ of } ₹ 12,60,000) + 4,20,000$$

$$S = 0.7S + 11,34,000 + 4,20,000$$

$$S = 15,54,000 \div 0.3 = ₹ 51,80,000$$

(iv) **Calculation of sales value to earn 20% on Sales:**

$$\text{Sales Value (S)} = 0.7 S + 12,60,000 + 0.2S$$

$$S = 12,60,000 \div 0.10 = ₹ 1,26,00,000$$

(v) **New Margin of Safety:**

$$= (\text{Sales} - \text{BES}) \div \text{Sales}$$

$$= (87.5\% \text{ of } 56,00,000 - 42,00,000) \div (87.5\% \text{ of } 56,00,000)$$

$$= (49,00,000 - 42,00,000) \div 49,00,000$$

$$= 7,00,000 \div 49,00,000 = 14.29\%$$

Or

$$= (\text{Sales} - \text{BES})$$

$$= (87.5\% \text{ of } 56,00,000 - 42,00,000)$$

$$= ₹ 7,00,000$$

2023 - May [3] (a)

Answer:

- (i) **Budget showing current position of total product wise contribution and profitability:**

	Particulars	Product X (₹)	Product Y (₹)	Product Z (₹)	Total (₹)
A	Direct material cost (per unit)	20	20	20	
B	Direct wages cost (per unit)	16	24	16	
C	Variable overhead per unit (Refer WN-1)	4	6	4	
D	Total variable cost/ Marginal cost per unit [A+B+C]	40	50	40	
E	Add: Profit [20% of D]	-	-	8	
F	Selling price unit [D+E]	-	-	48	
G	Price weight	1.25	2	1	
H	Selling price per unit [Selling price of Product Z × G]	60	96	48	
I	Contribution per unit [H-D]	20	46	8	
J	Quantity to be sold	2,50,000	2,80,000	3,20,000	
K	Total Contribution [J×I]	50,00,000	1,28,80,000	25,60,000	2,04,40,000
L	Fixed Overheads [Refer WN-1]				13,20,000
M	Profit				1,91,20,000

Working Notes:**1. Segregation of Overheads into variable and fixed in current year:**

	Particulars	Product X (₹)	Product Y (₹)	Product Z (₹)	Total (₹)
A	Total overhead cost	-	-	-	52,80,000
B	Labour hour per unit [Direct wages Cost ÷ ₹ 1]	4	6	4	
C	Quantity produced	2,50,000	2,80,000	3,20,000	
D	Total variable overhead cost [B×C]	10,00,000	16,80,000	12,80,000	39,60,000
E	Fixed overhead cost [A-D]				13,20,000

(ii) Budget showing next year's position of total product wise contribution and profitability:

	Particulars	Product X (₹)	Product Y (₹)	Product Z (₹)	Total
A	Selling price per unit	60	96	48	
B	Contribution per unit	20	46	8	
C	Quantity to be sold	2,80,000 [112% of 2,50,000]	2,66,000 [95% of 2,80,000]	3,68,000 [115% of 3,20,000]	
D	Total Contribution [B×C]	56,00,000	1,22,36,000	29,44,000	2,07,80,000
	Fixed Overheads [Refer WN-2]				13,20,000
	Profit				1,94,60,000

Working Notes:

2. Segregation of Overheads into variable and fixed in next year:

	Particulars	Product X (₹)	Product Y (₹)	Product Z (₹)	Total (₹)
A	Total overhead cost	-	-	-	55,08,000
B	Labour hour per unit [Direct wages Cost ÷ ₹ 1]	4	6	4	
C	Quantity produced	2,80,000	2,66,000	3,68,000	
D	Total variable overhead cost [B×C]	11,20,000	15,96,000	14,72,000	41,88,000
E	Fixed overhead cost [A-D]				13,20,000

2023 - Nov [4] (b) R Ltd. produces and sells 60,000 units of product 'AN', at its Noida Plant. The selling price of the product is ₹ 15 per unit. The variable cost is 80% of selling price per unit. Fixed cost during this period is ₹ 4,20,000. The company is continuously suffering losses, and management plans to shut down the Noida Plant.

The fixed cost is expected to be reduced by ₹ 2,50,000.

Additional costs of plant shut down are expected at ₹ 25,000.

You are required to comment on:

- Whether the Noida plant be shut down?
- Find the shut-down point in units.

(5 marks)

Chapter - 15 : Budget and Budgetary Control

6

Classification on the Basis of Functions

2023 - Nov [2] (b) HL Limited produces and sells four varieties of beverage. The past data shows different demand patterns for various quarters during the year. The sales quantity and selling price for the month of September 2023 is as follows:

	Sales Quantity	Selling Price per unit
Hot Coffee	1,40,000 Units	₹ 20/-
Cold Coffee	3,40,000 Units	₹ 40/-
Fruit Juice	4,20,000 Units	₹ 20/-
Carbonated Soft Drink	2,70,000 Units	₹ 20/-

For the quarter October to December 2023, it is estimated that due to climate changes the demand for Hot Coffee would increase every month by 50% of the previous month and the demand for Cold Coffee would decrease every month by 30% of the previous month. The demand for Fruit Juice would decrease by 20% in the month of October 2023 and thereafter it will remain constant. HL Limited would be able to sell only 60,000 units, 50,000 units and 30,000 units of Carbonated Soft Drink respectively during the months of October, November and December 2023. There would be no change in the selling price of all the products during the next quarter.

Standard Quantity of closing stock for the period September 2023 to December 2023 is as follows: (in units)

	Hot Coffee	Cold Coffee	Fruit Juice	Carbonated Soft Drink
September 2023	12,000	13,000	11,000	7,500
October 2023	15,000	14,000	12,000	5,500
November 2023	13,000	15,000	10,000	6,000
December 2023	11,000	16,000	13,000	7,000

You are required to prepare a Production Budget (in units) and Sales Budget (in units and sales value) for the months of October, November and December 2023. (10 marks)

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