

**INTERMEDIATE: GROUP – II**  
**PAPER – 4: COST AND MANAGEMENT ACCOUNTING**  
**Suggested Answers/ Solution**

**PART I – Case Scenario based MCQs**

**1. (a) Working notes:**

Factory cost (33,00,000 x 0.25)	INR 8,25,000
Add: Freight (50,000 x 0.25)	<u>INR 12,500</u>
F.O.B. (Free On Board)	<u>INR 8,37,500</u>
Containers (2,00,000 x 0.25)	INR 50,000
Insurance (1,500 x 75)	INR 1,12,500
Ocean freight (2,000 x 75)	INR 1,50,000
CIF (Cost, Insurance and Freight)	= 8,37,500 + 1,12,500 + 1,50,000
	= INR 11,00,000
Custom duty	= 20% x 11,00,000 = INR 2,20,000
IGST	= 18% x (11,00,000 + 2,20,000)
	= INR 2,37,600
Penalty	= INR 15,000
Commission	
Indian	= 6% x 8,25,000 = INR 49,500
Srilankan	= 12% x 8,25,000 = INR 99,000

<b>Particulars</b>	<b>Amount (INR)</b>
Factory cost	8,25,000
Containers (50,000-38,000)	12,000
Insurance	1,12,500
Ocean freight	1,50,000
Freight inwards	12,500
Commission (49,500+99,000)	1,48,500
Custom duty non-refundable 20%* 2,20,000	44,000
<b>TOTAL</b>	<b>13,04,500</b>

2. (a) Good units =  $8,000 * (1-5\%) = 7,600$  UNITS

Normal loss to be absorbed in good units. No abnormal loss.

Particulars	Product Zenga (INR)
Factory cost	4,50,000
Other cost except commission, insurance and custom duty to be absorbed on the basis of quantity i.e. 12:8 or 3:2 $(12,000+1,50,000+12,500)*2/5$	69,800
Commission, insurance and custom duty to be absorbed on value basis 15:18 or 5:6 $(1,48,500+1,12,500+44,000)*6/11$	1,66,363.63
Total Cost	6,86,163.63
Number of good units	7,600 units
Per unit Cost	<b>90.28</b>

3. (b) Good units =  $12000 * (1-5\%) = 11400$  units

Particulars	Product Xendga (INR)
Factory cost	3,75,000
Other cost $(12,000+1,50,000+12,500)*3/5$	1,04,700
Commission, insurance and custom duty $(1,48,500+1,12,500+44,000)*5/11$	1,38,636.36
Total Cost	618,336.36
Number of good units	11,400 units
Per unit Cost	<b>54.24</b>

- 4 (a) Custom duty  $80\% \times 2,20,000 = 1,76,000$   
 Add: IGST  $= 2,37,600$   
**4,13,600**

5. (c) Normal loss upto 8%

Abnormal loss 1%

Total cost of xendga INR 6,18,336.36

Total cost of zenga INR 6,86,163.63

Particulars	XENGDA (INR)	ZENGA (INR)	(INR)
Normal loss of 8%	960 units	640 units	
Good units after normal loss	11,040 units	7,360 units	
Per unit cost to be absorbed in	56 $(6,18,336.36/11,040)$	93.23 $(6,86,163.63/7,360)$	

good units (total costs/no of good units after normal loss)			
Abnormal loss in units 1%	120 units	80 units	
Loss in Profit & Loss	$56 \times 120 = 6,720$	$93.23 \times 80 = 7,458.4$	14,178.4

6. (a) Material Mix Variance (Cotton + Polyester) =  $\{(RSQ \times SP) - (AQ \times SP)\}$   
 $= \{7,08,570 - 7,10,000\}$   
 $= 1,430 (A)$
- Material Yield Variance (Cotton + Polyester) =  $\{(SQ \times SP) - (RSQ \times SP)\}$   
 $= \{7,51,770 - 7,08,570\}$   
 $= 43,200 (F)$
7. (d) Material Price Variance (Cotton + Polyester) =  $\{(AQ \times SP) - (AQ \times AP)\}$   
 $= \{7,10,000 - 6,72,500\}$   
 $= 37,500 (F)$
8. (c) Material Cost Variance (Cotton + Polyester) =  $\{(SQ \times SP) - (AQ \times AP)\}$   
 $= \{7,51,770 - 6,72,500\}$   
 $= 79,270 (F)$

### Working Note

#### Material Variances:

Material	SQ (WN-1)	SP (₹)	SQ × SP (₹)	RSQ (WN-2)	RSQ × SP (₹)	AQ	AQ × SP (₹)	AP (₹)	AQ × AP (₹)
Cotton	9,397 m	50	4,69,850	8,857 m	4,42,850	9,000 m	4,50,000	48	4,32,000
Polyester	7,048 m	40	2,81,920	6,643 m	2,65,720	6,500 m	2,60,000	37	2,40,500
	<b>16,445 m</b>		<b>7,51,770</b>	<b>15,500 m</b>	<b>7,08,570</b>	<b>15,500 m</b>	<b>7,10,000</b>		<b>6,72,500</b>

#### WN-1: Standard Quantity (SQ):

$$\text{Cotton} - \left( \frac{8,000\text{m}}{0.9 \times 14,000\text{m}} \times 14,800\text{m} \right) = 9,396.8 \text{ or } 9,397 \text{ m}$$

$$\text{Polyester} - \left( \frac{6,000\text{m}}{0.9 \times 14,000\text{m}} \times 14,800\text{m} \right) = 7,047.6 \text{ or } 7048 \text{ m}$$

#### WN- 2: Revised Standard Quantity (RSQ):

$$\text{Cotton} - \left( \frac{8,000\text{m}}{14,000\text{m}} \times 15,500\text{m} \right) = 8,857.1 \text{ or } 8857 \text{ m}$$

$$\text{Polyester} - \left( \frac{6,000\text{m}}{14,000\text{m}} \times 15,500\text{m} \right) = 6,642.8 \text{ or } 6643 \text{ m}$$

9. (b) Labour Efficiency Variance (Skilled + Unskilled) =  $\{(SH \times SR) - (AH \times SR)\}$   
 = {61,496 – 63,920}  
 = 2,424 (A)
- Labour Yield Variance (Skilled + Unskilled) =  $\{(SH \times SR) - (RSH \times SR)\}$   
 = {61,496 – 63,052}  
 = 1,556 (A)
10. (a) Labour Cost Variance (Skilled + Unskilled) =  $\{(SH \times SR) - (AH \times AR)\}$   
 = {61,496 – 62,380}  
 = 884 (A)

**Working Note**

**Labour Variances:**

Labour	SH (WN-3)	SR (₹)	SH × SR (₹)	RSH (WN-4)	RSH × SR (₹)	AH	AH × SR (₹)	AR (₹)	AH × AR (₹)
Skilled	1,116 hrs	37.50	41,850	1144	42,900	1,200	45,000	35.50	42,600
Unskilled	893 hrs	22.00	19,646	916	20,152	860	18,920	23.00	19,780
	2,009 hrs		61,496	2,060	63,052	2,060	63,920		62,380

**WN- 3: Standard Hours (SH):**

$$\text{Skilled labour-} \left( \frac{0.95 \times 1,000\text{hr.}}{0.90 \times 14,000\text{m.}} \times 14,800\text{m.} \right) = 1,115.87 \text{ or } 1,116 \text{ hrs.}$$

$$\text{Unskilled labour-} \left( \frac{0.95 \times 800\text{hr.}}{0.90 \times 14,000\text{m.}} \times 14,800\text{m.} \right) = 892.69 \text{ or } 893 \text{ hrs.}$$

**WN- 4: Revised Standard Hours (RSH):**

$$\text{Skilled labour-} \left( \frac{1,000\text{hr.}}{1,800\text{hr.}} \times 2,060\text{hr.} \right) = 1,144.44 \text{ or } 1,144 \text{ hrs.}$$

$$\text{Unskilled labour-} \left( \frac{800\text{hr.}}{1,800\text{hr.}} \times 2,060\text{hr.} \right) = 915.56 \text{ or } 916 \text{ hrs.}$$

11. (d) Break-even point =  $\frac{\text{Fixed Costs} + \text{Targeted Profit}}{(\text{Selling Price per Unit} - \text{Variable Cost per Unit})}$   
 = (5,00,000 + 2,00,000)/100 = 7,000 units

12. (d) Expected Output = Input Material – Normal Loss  
 Expected Output = 1,200 Kg – 96 Kg = 1,104 kg  
 Abnormal loss = 1,104 kg – 1,100 kg = 4 kg
13. (b) Overhead Rate = Total Estimated Machine Hours / Total Estimated Overhead Cost  
 = ₹ 6,00,000 / 30,000 = ₹ 20  
 Allocated Overhead = Overhead Rate x Machine Hours Used by the Job  
 = ₹ 20 x 300 hrs = ₹ 6,000
14. (c) Efficiency Ratio = Activity Ratio / Capacity Utilization Ratio  
 = 0.95 / 0.85 = 1.117 or 112%
15. (b) Total cost ₹ 20,000 + (300 units x (₹ 20 + ₹ 10)) = ₹ 29,000

**PART-II– Descriptive Questions**

1. (a) Increase in hourly rate of wages under Rowan Plan is ₹ 30 i.e. (₹ 180 – ₹ 150)

$$\frac{\text{Time Saved}}{\text{Time Allowed}} \times ₹ 150 = ₹ 30 \text{ (Please refer Working Note)}$$

$$\text{Or, } \frac{\text{Time Saved}}{50 \text{ hours}} \times ₹ 150 = ₹ 30$$

$$\text{Or, Time saved} = \frac{1,500}{150} = 10 \text{ hours}$$

Therefore, Time Taken is 40 hours i.e. (50 hours – 10 hours)

Effective Hourly Rate under Halsey System:

Time saved	= 10 hours	
Bonus @ 50%	= 10 hours x 50% x ₹ 150	= Rs 750
Total Wages	= (₹ 150 x 40 hours + ₹ 750)	= Rs 6,750
Effective Hourly Rate	= ₹ 6,750 ÷ 40 hours	= ₹ 168.75

**Working Note:**

Effective hourly rate

$$= \frac{(\text{Time Taken} \times \text{Rate per hour}) + \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour}}{\text{Time Taken}}$$

$$\text{Or, } ₹ 180 = \frac{\text{Time Taken} \times \text{Rate per hour}}{\text{Time Taken}} + \frac{\frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour}}{\text{Time Taken}}$$

$$\text{Or, } ₹ 180 - \frac{\text{Time Taken} \times \text{Rate per hour}}{\text{Time Taken}} = \frac{\text{Time Taken}}{\text{Time Allowed}} \times \text{Time Saved} \times \text{Rate per hour} \times \frac{1}{\text{Time Taken}}$$

$$\text{Or, } ₹ 180 - ₹ 150 = \frac{\text{Time Saved}}{\text{Time Allowed}} \times ₹ 150$$

(b)

	Particulars	Amount in ₹
<b>A</b>	<b>Operating costs:</b>	
	Petrol	400
	Oil	170
	Grease	90
	Wages to Driver	550
	Wages to Worker	350
	(A)	1,560
<b>B</b>	<b>Maintenance Costs:</b>	
	Repairs	170
	Overhead	60
	Tyres	150
	Garage Charges	100
	(B)	480
<b>C</b>	<b>Fixed Cost:</b>	
	Insurance	50
	License, Tax etc	80
	Interest	40
	Other Overheads	190
	Depreciation <u>(54,000 - 36,000)</u> 5 x 12	300
	(C)	660
	<b>Total Cost (A + B + C)</b>	<b>2,700</b>

- (i) Cost per days maintained = ₹ 2700/30 days = ₹ 90  
 (ii) Cost per days operated = ₹ 2700/25 days = ₹ 108  
 (iii) Cost per hours operated = ₹ 2700/300 hours = ₹ 9  
 (iv) Cost per kilometres covered = ₹ 2700/2500 kms = ₹ 1.08  
 (v) Cost per commercial tonne kms = ₹ 2700/5000 tonne kms = ₹ 0.54

\*Commercial tonne kms = Total distance travelled x Average load  

$$= \frac{(4 \text{ tonnes} + 0 \text{ tonnes})}{2} \times 2500 \text{ kms}$$

$$= 5000 \text{ tonne kms}$$

(c) (i) Calculation of most Economical Production Run

$$= \sqrt{\frac{2 \times 60,000 \times ₹ 4,800}{12 \times 12}} = 2,000 \text{ Vaccine}$$

(ii) Calculation of Extra Cost due to processing of 15,000 vaccines in a batch

	When run size is 2,000 vaccines	When run size is 15,000 vaccines
Total set up cost	$= \frac{60,000}{2,000} \times ₹ 4,800$ = ₹ 1,44,000	$= \frac{60,000}{15,000} \times ₹ 4,800$ = ₹ 19,200
Total Carrying cost	$\frac{1}{2} \times 2,000 \times ₹ 144$ = ₹ 1,44,000	$\frac{1}{2} \times 15,000 \times ₹ 144$ = ₹ 10,80,000
Total Cost	₹ 2,88,000	₹ 10,99,200

Thus, extra cost = ₹ 10,99,200 – ₹ 2,88,000 = ₹ 8,11,200

2. (a) (i) **Statement of Equivalent Production**

Particulars	Input Units	Particulars	Output Units	Equivalent Production			
				Material		Labour & O.H.	
				%	Units	%	Units
Opening WIP	31,000	Completed and transferred to Process (Soldering)	5,42,500	100	5,42,500	100	5,42,500
Units introduced	5,89,000	Normal Loss (5% of 6,20,000)	31,000	--	--	--	--
		Abnormal loss (Balancing figure)	15,500	100	15,500	80	12,400
		Closing WIP	31,000	100	31,000	80	24,800
	6,20,000		6,20,000		5,89,000		5,79,700

**Statement showing cost for each element**

Particulars	Materials (₹)	Labour (₹)	Overhead (₹)	Total (₹)
Cost of opening work-in-process	12,40,000	2,32,500	6,97,500	21,70,000
Cost incurred during the month	2,29,40,000	55,64,500	1,66,93,500	4,51,98,000
Less: Realisable Value of normal scrap (₹ 20 × 31,000 units)	(6,20,000)	--	--	(6,20,000)
Total cost: (A)	2,35,60,000	57,97,000	1,73,91,000	4,67,48,000
Equivalent units: (B)	5,89,000	5,79,700	5,79,700	
<b>Cost per equivalent unit: (C) = (A ÷ B)</b>	<b>40.00</b>	<b>10.00</b>	<b>30.00</b>	<b>80.00</b>

**(ii) Statement of Distribution of cost**

	Amount (₹)	Amount (₹)
1. Value of units completed and transferred (5,42,500 units × ₹ 80)		4,34,00,000
2. Value of Abnormal Loss:		
- Materials (15,500 units × ₹ 40)	6,20,000	
- Labour (12,400 units × ₹ 10)	1,24,000	
- Overheads (12,400 units × ₹ 30)	3,72,000	11,16,000
3. Value of Closing W-I-P:		
- Materials (31,000 units × ₹ 40)	12,40,000	
- Labour (24,800 units × ₹ 10)	2,48,000	
- Overheads (24,800 units × ₹ 30)	7,44,000	22,32,000
<b>Total</b>		<b>4,67,48,000</b>

**(iii) Process Account (Mounting)**

Particulars	Units	(₹)	Particulars	Units	(₹)
To Opening W.I.P:			By Normal Loss (₹ 20 × 31,000 units)	31,000	6,20,000
- Materials	31,000	12,40,000	By Abnormal loss	15,500	11,16,000
- Labour	--	2,32,500	By Process A/c (Soldering)	5,42,500	4,34,00,000
- Overheads	--	6,97,500	By Closing WIP	31,000	22,32,000
To Materials introduced	5,89,000	2,29,40,000			
To Direct Labour		55,64,500			
To Overheads		1,66,93,500			
	6,20,000	4,73,68,000		6,20,000	4,73,68,000

**(iv) Normal Loss A/c**

Particulars	Units	(₹)	Particulars	Units	(₹)
To Process Account (Mounting)	31,000	6,20,000	By Cost Ledger Control A/c	31,000	6,20,000
	31,000	6,20,000		31,000	6,20,000

**Abnormal Loss A/c**

Particulars	Units	(₹)	Particulars	Units	(₹)
To Process Account (Mounting)	15,500	11,16,000	By Cost Ledger Control A/c	15,500	3,10,000

			By Costing Profit & Loss A/c		8,06,000
	15,500	11,16,000		15,500	11,16,000

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

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

3. (a)

<b>Contribution per tonne</b>	<b>(₹)</b>
Sales Price	185.00
Variable Cost:	
Material (W.N.-1)	90.00
Labour (W.N.-2)	13.00
Variable Overhead (W.N.-3)	40.00
Contribution	42.00
Profit Required (₹7,56,000 / 1,26,000 tonnes)	6.00
Balance Contribution <i>per tonne</i> for meeting Fixed Costs	36.00
Fixed Costs (W.N.-4)	54,72,000
Quantity Required (₹54,72,000 ÷ ₹36)	1,52,000 tonnes

#### Working Notes

1. Materials Cost per tonne in Year II ₹90

$$\left( \frac{₹1,29,60,000}{1,44,000 \text{ tonnes}} \right)$$

2. Labour Cost per tonne in Year II	₹13
$\left( \frac{₹18,72,000}{1,44,000 \text{tonnes}} \right)$	
3. Variable portion of Factory, Administration and Sell. Expenditure, etc	₹
Total in Year II	1,12,32,000
Less: Increase otherwise than on account of increased turnover	<u>8,10,000</u>
	1,04,22,000
Less: Amount Spent in Year I	<u>97,02,000</u>
Increase	<u>7,20,000</u>
Increase in Quantity Sold	18,000 tonnes
Variable Expenses per tonne	₹40
$\left( \frac{₹7,20,000}{18,000 \text{tonnes}} \right)$	
4. Fixed portion of Factory, Administration and Selling Expenses (Yr. 2)	₹1,12,32,000
Variable Expenses @ ₹ 40 per tonne	<u>₹57,60,000</u>
Fixed Portion	<u>₹54,72,000</u>

**(b) Cost Sheet**

Particulars	Units	Amount (₹)
<b>Material</b>		
Opening stock	10,000	5,00,00,000
Add: Purchases	4,90,000	25,20,00,000
Less: Closing stock	(17,500)	(85,00,000)
	4,82,500	<b>29,35,00,000</b>
Less: Normal wastage of materials realized @ ₹ 350 per unit	(2,000)	(7,00,000)
Material consumed		29,28,00,000
Direct employee's wages and allowances		5,50,50,000
Direct expenses- Royalty paid for production		3,10,50,000
<b>Prime cost</b>	4,80,500	<b>37,89,00,000</b>
Factory overheads - Consumable stores, depreciation etc.		3,42,00,000
Rearrangement design of factory machine		75,00,000
<b>Gross Works Cost</b>	4,80,500	<b>38,64,00,000</b>
Add: Opening WIP	20,000	1,20,00,000
Less: Closing WIP	(10,000)	(60,50,000)

<b>Factory/Works Cost</b>	4,90,500	<b>39,23,50,000</b>
Administration Overheads related to production		3,45,00,000
R&D expenses and Quality control cost		1,90,00,000
AMC cost of CCTV installed at factory premises		6,00,000
Guard Salaries for factory premises		14,00,000
Product Inspection		22,00,000
Add: Primary packaging cost @ ₹ 140 per unit		6,86,70,000
<b>Cost of production</b>	4,90,500	<b>51,87,20,000</b>
<b>Administration Overheads</b>		
Guard salaries for office		4,00,000
Audit and legal fees		29,00,000
Director's Salaries		60,00,000
EPF Director's Salaries @12%		7,20,000
AMC cost for CCTV installed at office.		2,00,000
<b>Selling and Distribution Overheads</b>		
Cost of maintaining website for online sale		60,75,000
Secondary packaging cost @ ₹ 20 per unit	4,90,500	98,10,000
Gift and snacks		30,50,000
Guard salaries for selling department		2,00,000
AMC cost for CCTV installed at selling department		2,00,000
Hiring charges of cars		25,00,000
Add: GST @5% on RCM basis		1,25,000
Television programme sponsorship cost		20,00,000
Customers' prize cost*		2,00,000
Selling expenses		3,94,50,000
<b>Cost of sales</b>		<b>58,64,75,000</b>
Add: Profit @ 25% on sales or 33.333% of cost		19,54,89,712
<b>Sales value</b>		<b>78,19,64,712</b>

**\*Customers' prize cost:**

	Amount (₹)
1 <sup>st</sup> Prize	1,00,000
2 <sup>nd</sup> Prize	50,000
3 <sup>rd</sup> Prize	20,000

Consolation Prizes (3 × ₹10,000)	30,000
<b>Total</b>	<b>2,00,000</b>

**\*Customers' prize cost:**

	Amount (₹)
1 <sup>st</sup> Prize	1,00,000
2 <sup>nd</sup> Prize	50,000
3 <sup>rd</sup> Prize	20,000
Consolation Prizes (3 × ₹10,000)	30,000
<b>Total</b>	<b>2,00,000</b>

**4. Computation of overhead absorption rate  
(as per the blanket rate)**

Department	Budgeted factory Overheads (₹)	Budgeted direct wages (₹)
Operating	35,64,000	7,92,000
Assembly	9,66,000	24,15,000
Quality Control	4,20,000	10,50,000
Packing	12,37,500	6,93,000
<b>Total</b>	<b>61,87,500</b>	<b>49,50,000</b>

$$\begin{aligned} \text{Overhead absorption rate} &= \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct wages}} \times 100 \\ &= \frac{61,87,500}{49,50,000} \times 100 \\ &= 125\% \text{ of Direct wages} \end{aligned}$$

**Selling Price of the Job No. 157**

Particulars	Operating (₹)	Assembly (₹)	Quality Control (₹)	Packing (₹)	Total (₹)
Direct Materials	11,880	4,140	1,800	2,970	20,790
Direct Wages	2,376	2,484	1,080	594	6,534
Rectification cost of normal defectives			495		495
Overheads [(125% × (6,534 + 495))]					8,786.25
<b>Total Factory Cost</b>					<b>36,605.25</b>
Add: Mark-up (25% × ₹ 36,605.25)					9,151.31
<b>Selling Price</b>					<b>45,756.56</b>

(b) As the machinery is used to a varying degree in different departments, the use of **departmental rates** is to be preferred. The overhead recovery rates in different departments would be as follows:

(i) **Operating Department:** The use of machine hours is the predominant factor of production in Operating Department. Hence, machine hour rate should be used to recover overheads.

The overhead recovery rate based on machine hours would be calculated as follows:

$$\begin{aligned}\text{Machine hour rate} &= \frac{\text{Budgeted factory Overheads}}{\text{Budgeted machine hours}} \\ &= \frac{\text{₹ } 35,64,000}{7,92,000} = \text{₹ } 4.50 \text{ per hour}\end{aligned}$$

(ii) **Assembly Department:** Direct labour hours is the main factor of production in Assembly Department. Hence, direct labour hour rate should be used to recover overheads.

The overhead recovery rate based on direct labour hours would be calculated as follows:

$$\begin{aligned}\text{Direct labour hour rate} &= \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct labour hours}} \\ &= \frac{\text{₹ } 9,66,000}{6,90,000} = \text{₹ } 1.40 \text{ per hour}\end{aligned}$$

(iii) **Quality Control Department:** Direct labour hours is the main factor of production in Quality Control Department. Hence, direct labour hour rate should be used to recover overheads.

The overhead recovery rate based on direct labour hours would be calculated as follows:

$$\begin{aligned}\text{Direct labour hour rate} &= \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct labour hours}} \\ &= \frac{\text{₹ } 4,20,000}{3,00,000} = \text{₹ } 1.40 \text{ per hour}\end{aligned}$$

(iv) **Packing Department:** Direct labour hours is the main factor of production in Packing Department. Hence, direct labour hour rate should be used to recover overheads.

The overhead recovery rate based on direct labour hours would be calculated as follows:

$$\begin{aligned}\text{Direct labour hour rate} &= \frac{\text{Budgeted factory Overheads}}{\text{Budgeted direct labour hours}} \\ &= \frac{\text{₹ } 12,37,500}{4,95,000} = \text{₹ } 2.50 \text{ per hour}\end{aligned}$$

(c) **Selling Price of Job No. 157**

[based on the overhead rates calculated in (b) above]

Particulars	Operating (₹)	Assembly (₹)	Quality Control (₹)	Packing (₹)	Total (₹)
Direct Materials	11,880	4,140	1,800	2,970	20,790
Direct Wages	2,376	2,484	1,080	594	6,534
Rectification cost of normal defectives			495		495
Overheads (refer working note)					10,672
<b>Total Factory Cost</b>					<b>38,491</b>
Add: Mark-up (25% x ₹ 38,491)					9,622.75
<b>Selling Price</b>					<b>48,113.75</b>

**Working note:**

**Overhead Statement**

Department	Basis	Hours	Rate (₹)	Overheads (₹)
Operating	Machine hour	1,782	4.50	8,019
Assembly	Direct labour hour	828	1.40	1,159
Quality Control	Direct labour hour	360	1.40	504
Packing	Direct labour hour	396	2.50	990
			<b>Total</b>	<b>10,672</b>

(d) **Department-wise statement of under or over recovery of overheads**

(i) **As per the current policy**

Particulars	Operating (₹)	Assembly (₹)	Quality Control (₹)	Packing (₹)	Total (₹)
Direct wages (Actual)	9,50,400	18,63,000	8,10,000	8,91,000	45,14,400
Overheads recovered @ 125% of Direct wages: (A)	11,88,000	23,28,750	10,12,500	11,13,750	56,43,000
Actual overheads: (B)	38,61,000	5,79,600	2,52,000	13,36,500	60,29,100
<b>(Under)/Over recovery of overheads: (A-B)</b>	<b>(26,73,000)</b>	<b>17,49,150</b>	<b>7,60,500</b>	<b>(2,22,750)</b>	<b>(3,86,100)</b>

**(ii) As per the method suggested**

	Machine hours (Operating)	Direct labour hours (Assembly)	Direct labour hours (Quality Control)	Direct labour hours (Packing)	Total (₹)
Hours worked	9,50,400	6,21,000	2,70,000	5,94,000	
Rate/hour (₹)	4.50	1.40	1.40	2.50	
Overhead recovered (₹): (A)	42,76,800	8,69,400	3,78,000	14,85,000	70,09,200
Actual overheads (₹): (B)	38,61,000	5,79,600	2,52,000	13,36,500	60,29,100
<b>(Under)/Over recovery: (A-B)</b>	<b>4,15,800</b>	<b>2,89,800</b>	<b>1,26,000</b>	<b>1,48,500</b>	<b>9,80,100</b>

**5. (a) (i) Statement of Profit as per financial records**  
*(for the year ended March 31, 2024)*

	(₹)		(₹)
To Opening stock of Finished Goods	48,250	By Sales	13,96,500
To Work-in-process	38,000	By Closing stock of finished Goods	44,500
To Raw materials consumed	5,00,000	By Work-in-Process	36,200
To Direct labour	4,20,000	By Interest received	42,000
To Factory overheads	3,56,000	By Loss	3,35,050
To Administration overheads	2,10,000		
To Selling & distribution overheads	84,000		
To Dividend paid	98,000		
To Bad debts	16,000		
To Stores adjustment	50,000		
To Income tax	34,000		
	<b>18,54,250</b>		<b>18,54,250</b>

**Statement of Profit as per costing records**  
*(for the year ended March 31, 2024)*

	(₹)
Sales revenue (A) (14,250 units)	13,96,500
<b>Cost of sales:</b>	
Opening stock (545 units x ₹ 90)	49,050
Add: Cost of production of 14,165 units (Refer to working note 2)	14,08,560

Less: Closing stock (₹ 99.44 x 460 units)	45,742
Production cost of goods sold (14,250 units)	14,11,868
Selling & distribution overheads (14,250 units x ₹ 6)	<u>85,500</u>
Cost of sales: (B)	<u>14,97,368</u>
Profit/Loss: {(A) – (B)}	<u>(1,00,868)</u>

**(ii) Statement of Reconciliation**

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

	(₹)	(₹)
Loss as per Cost Accounts		(1,00,868)
<b>Add:</b> Administration overheads over absorbed (₹ 2,34,760 – ₹ 2,10,000)	24,760	
Opening stock overvalued (₹ 49,050 – ₹ 48,250)	800	
Interest received	42,000	
Selling & distribution overheads over recovered (₹ 85,500 – ₹ 84,000)	<u>1,500</u>	69,060
		(31,808)
<b>Less:</b> Factory overheads over recovered (₹ 3,56,000 - ₹2,52,000)	1,04,000	
Closing stock overvalued (₹ 45,742 – ₹ 44,500)	1,242	
Stores adjustment	50,000	
Income tax	34,000	
Dividend	98,000	
Bad debts	<u>16,000</u>	(3,03,242)
Loss as per financial accounts		(3,35,050)

**Working notes:**

<b>1. Number of units produced</b>	
	Units
Sales	14,250
Add: Closing stock	460
Total	14,710
Less: Opening stock	545
Number of units produced	14,165

<b>2. Cost Sheet</b>	
	(₹)
Raw materials consumed	5,00,000
Direct labour	4,20,000
Prime cost	9,20,000
Factory overheads	2,52,000
(60% of direct wages)	
Factory cost	11,72,000
Add: Opening work-in-process	38,000
Less: Closing work-in-process	36,200
Factory cost of goods produced	11,73,800
Administration overheads	2,34,760
(20% of factory cost)	
Cost of production of 14,165 units (Refer to working note 1)	14,08,560
Cost of production per unit: ₹ 14,08,560 <hr style="width: 100px; margin-left: 0;"/> 14,165	99.44

(b)

**PPP Ltd.**

**Budget for 90% capacity level for the next year**

Budgeted production (units)	90,000	
	Per Unit (₹)	Amount (₹)
Direct Material (note 2)	22	19,80,000
Direct Labour (note 3)	12	10,80,000
Variable factory overhead (note 4)	2.10	1,89,000
Variable selling overhead (note 5)	4.40	3,96,000
<b>Variable cost</b>	<b>40.50</b>	<b>36,45,000</b>
Fixed factory overhead (note 4)		2,20,000
Fixed selling overhead (note 5)		1,15,000
Administrative overhead (note 6)		1,84,000
<b>Fixed cost</b>		<b>5,19,000</b>
<b>Total cost</b>		<b>41,64,000</b>
Add: Profit 25% on total cost		10,41,000
<b>Sales</b>		<b>52,05,000</b>
<b>Contribution (Sales – Variable cost)</b>		<b>15,60,000</b>

**Working Notes:**

- At 80% level of capacity (current year), the production is 80,000 units.

Thus, total level of capacity is 1,00,000 units.

Therefore, Year 2 is at 70% capacity and Year 3 is at 60% capacity as the production is increasing by 10% of its capacity consistently.

- Direct Material

	(₹)		(₹)
80% Capacity	16,00,000	70% Capacity	14,00,000
70% Capacity	14,00,000	60% Capacity	12,00,000
10% change in capacity	<b>2,00,000</b>	10% change in capacity	<b>2,00,000</b>

For 10% increase in capacity, the total direct material cost regularly changes by ₹ 2,00,000

Thus, Direct material cost (variable) = ₹ 2,00,000 ÷ 10,000 = ₹ 20

After 10% increase in price, direct material cost per unit = ₹ 20 × 1.10 = ₹ 22

Direct material cost at 90,000 budgeted units = 90,000 × ₹ 22 = ₹ 19,80,000

- Direct labour:

	(₹)		(₹)
80% Capacity	8,00,000	70% Capacity	7,00,000
70% Capacity	7,00,000	60% Capacity	6,00,000
10% change in capacity	<b>1,00,000</b>	10% change in capacity	<b>1,00,000</b>

For 10% increase in capacity, direct labour cost regularly changes by ₹ 1,00,000.

Direct labour cost per unit = ₹ 1,00,000 ÷ 10,000 = ₹ 10

After 20% increase in price, direct labour cost per unit = ₹ 10 × 1.20 = ₹ 12

Direct labour for 90,000 units = 90,000 units × ₹ 12 = ₹ 10,80,000.

- Factory overheads are semi-variable overheads:

	(₹)		(₹)
80% Capacity	3,60,000	70% Capacity	3,40,000
70% Capacity	3,40,000	60% Capacity	3,20,000
10% change in capacity	<b>20,000</b>	10% change in capacity	<b>20,000</b>

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Variable factory overhead = ₹ 20,000 ÷ 10,000 units = ₹ 2

Variable factory overhead for 80,000 units = 80,000 × ₹ 2  
= ₹ 1,60,000

Fixed factory overhead = ₹ 3,60,000 – ₹ 1,60,000 = ₹ 2,00,000.

Variable factory overhead after 5% increase = ₹ 2 × 1.05 = ₹ 2.10

Fixed factory overhead after 10% increase = ₹ 2,00,000 × 1.10  
= ₹ 2,20,000.

5. Selling overhead is semi-variable overhead:

	(₹)		(₹)
80% Capacity	4,20,000	70% Capacity	3,80,000
70% Capacity	3,80,000	60% Capacity	3,40,000
10% change in capacity	<b>40,000</b>	10% change in capacity	<b>40,000</b>

Variable selling overhead = ₹ 40,000 ÷ 10,000 units = ₹ 4

Variable selling overhead for 80,000 units = 80,000 × ₹ 4  
= ₹ 3,20,000.

Fixed selling overhead = ₹ 4,20,000 – ₹ 3,20,000 = ₹ 1,00,000

Variable selling overhead after 10% increase = ₹ 4 × 1.10  
= ₹ 4.40

Fixed selling overhead after 15% increase = ₹ 1,00,000 × 1.15  
= ₹ 1,15,000

6. Administrative overhead is fixed:

After 15% increase = ₹ 1,60,000 × 1.15 = ₹ 1,84,000

6. (a) The Practical difficulties with which a Cost Accountant is usually confronted with while installing a costing system in a manufacturing company are as follows:

- (i) *Lack of top management support:* Installation of a costing system does not receive the support of top management. They consider it as interference in their work. They believe that such, a system will involve additional paperwork. They also have a misconception in their minds that the system is meant for keeping a check on their activities.
- (ii) *Resistance from cost accounting departmental staff:* The staff resist because of fear of losing their jobs and importance after the implementation of the new system.
- (iii) *Non co-operation from user departments:* The foremen, supervisor and other staff members may not cooperate in providing requisite data, as this would not only add to their responsibilities but will also increase paper work of the entire team as well.

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- (iv) *Shortage of trained staff:* Since cost accounting system's installation involves specialised work, there may be a shortage of trained staff.

To overcome these practical difficulties, necessary steps required are:

- Sell the idea to top management and convince them of the utility of the system.
- Resistance and non co-operation can be overcome by behavioural approach. To deal with the staff concerned effectively.
- Proper training should be given to the staff at each level
- Regular meetings should be held with the cost accounting staff, user departments, staff and top management to clarify their doubts/ misgivings.

- (b) Buttermilk is a by-product of butter and treatment of by-product in cost accounting is as follows.

- (i) When they are of small total value, the amount realized from their sale may be dealt as follows:

- Sales value of the by-product may be credited to Profit and Loss Account and no credit be given in Cost Accounting. The credit to Profit and Loss Account here is treated either as a miscellaneous income or as additional sales revenue.
- The sale proceeds of the by-product may be treated as deduction from the total costs. The sales proceeds should be deducted either from production cost or cost of sales.

- (ii) When the by-products are of considerable total value: Where by-products are of considerable total value, they may be regarded as joint products rather than as by-products. To determine exact cost of by-products the costs incurred upto the point of separation, should be apportioned over by-products and joint products by using a logical basis.

- (iii) When they require further processing: In this case, the net realisable value of the by-product at the split-off point may be arrived at by subtracting the further processing cost from realisable value of by-product. If the value is small, it may be treated as discussed in (i) above.

- (c)

<b>Demerits of Fixed Budget</b>	
1.	It does not suite a dynamic organization and may give misleading results. A poor or good performance may remain un-noticed.
2.	It is not suitable for long period.

- |   |
|---|
| <ol style="list-style-type: none"><li>3. It is also found unsuitable particularly when the business conditions are changing constantly.</li><li>4. Accurate estimates are not possible.</li></ol> |
|---|

<b>Demerits of Flexible Budget</b>
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- |  |
|--|
| <ol style="list-style-type: none"><li>1. The formulation of flexible budget is possible only when there is proper accounting system maintained, perfect knowledge about the factors of production and various business circumstances is available.</li><li>2. Flexible Budget also requires the system of standard costing in business.</li><li>3. It is very expensive and labour oriented.</li></ol> |
|--|

**OR**

**(c)** Objectives of time keeping and time booking: Time keeping has the following two objectives:

- (i) *Preparation of Payroll:* Wage bills are prepared by the payroll department on the basis of information provided by the time keeping department.
- (ii) *Computation of Cost:* Labour cost of different jobs, departments or cost centers are computed by costing department on the basis of information provided by the time keeping department.

The objectives of time booking are as follows:

- (i) To ascertain the labour time spent on a job and the idle labour hours.
- (ii) To ascertain labour cost of various jobs and products.
- (iii) To calculate the amount of wages and bonus payable under the wage incentive scheme.
- (iv) To compute and determine overhead rates and absorption of overheads under the labour and machine hour method.
- (v) To evaluate the performance of labour by comparing actual time booked with standard or budgeted time.