

MOCK TEST PAPER
INTERMEDIATE: GROUP – I
PAPER – 3: COST AND MANAGEMENT ACCOUNTING
SUGGESTED ANSWERS/ HINTS

1. (a) **Statement of Cost and Profit per batch**

Particulars	Jan.	Feb.	March	April	May	June	Total
Batch output (in units)	310	300	320	280	300	320	1,830
Sale value (₹)	2,480	2,400	2,560	2,240	2,400	2,560	14,640
Material cost (₹)	1,150	1,140	1,180	1,130	1,200	1,220	7,020
Direct wages (₹)	120	140	150	140	150	160	860
Chargeable expenses* (₹)	600	672	672	621	780	800	4,145
Total cost (₹)	1,870	1,952	2,002	1,891	2,130	2,180	12,025
Profit per batch (₹)	610	448	558	349	270	380	2,615
Total cost per unit (₹)	6.03	6.51	6.26	6.75	7.10	6.81	6.57
Profit per unit (₹)	1.97	1.49	1.74	1.25	0.90	1.19	1.43

Overall position of the order for 1,200 units

Sales value of 1,800 units @ ₹ 8 per unit	₹ 14,400
Total cost of 1,800 units @ ₹ 6.57 per unit	<u>₹ 11,826</u>
Profit	<u>₹ 2,574</u>

* $\frac{\text{Chargeable expenses}}{\text{Direct labour hour for the month}} \times \text{Direct labour hours for batch}$

(b) (i) Calculation of Economic Order Quantity

$$\text{EOQ} = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 9,680 \text{ units} \times \text{Rs.}200}{\text{Rs.}400 \times 20\%}} = 220 \text{ units}$$

(ii) Evaluation of Profitability of Different Options of Order Quantity

(A) When EOQ is ordered

		(₹)
Purchase Cost	(9,680 units × ₹ 400)	38,72,000
Ordering Cost	[(9,680 units/220 units) × ₹ 200]	8,800
Carrying Cost	(220 units × ½ × ₹ 400 × 20%)	8,800
Total Cost		38,89,600

(B) When Quantity Discount is accepted

		(₹)
Purchase Cost	(9,680 units × ₹ 380)	36,78,400
Ordering Cost	[(9,680 units/4,840 units) × ₹ 200]	400
Carrying Cost	(4,840 units × ½ × ₹ 380 × 20%)	1,83,920
Total Cost		38,62,720

Advise – The total cost of inventory is lower if quantity discount is accepted. The company would save ₹ 26,880 (₹ 38,89,600 - ₹ 38,62,720).

(c) **Master Budget for the year ending _____**

Particulars	(₹)	(₹)	(₹)
Sales:			
Acrylic finish wooden sheets			70,00,000
Lacquer finish wooden sheets			30,00,000
Total Sales			1,00,00,000
Less: Cost of production:			
Direct materials (65% of ₹ 1,00,00,000)		65,00,000	
Direct wages (25 workers × ₹ 1,500 × 12 months)		4,50,000	
Prime Cost		69,50,000	
Fixed Factory Overhead:			
Works manager's salary (5,500 × 12 months)	66,000		
Foreman's salary (4,500 × 12 months)	54,000		
Depreciation	1,26,000		
Light and power	30,000	2,76,000	
Variable Factory Overhead:			
Stores and spares (2.5% of ₹ 1,00,00,000)	2,50,000		
Repairs and maintenance	80,000		
Sundry expenses	45,000	3,75,000	
Works Cost			76,01,000
Gross Profit (Sales – Works cost)			23,99,000
Less: Adm., selling and distribution expenses			3,99,000
Net Profit			20,00,000

(d) (i) **Estimated Net Realisable Value Method:**

	Buttermilk Amount (₹)	Butter Amount (₹)
Sales Value	8,40,000 (₹ 30 × 28 × 1000)	76,80,000 (₹ 480 × 16 × 1000)
Less: Post split-off cost (Further processing cost)	-	(1,20,000)
Net Realisable Value	8,40,000	75,60,000
Apportionment of Joint Cost of ₹ 51,00,000* in ratio of 1:9	5,10,000	45,90,000

* [(₹ 100 × 50 × 1000) + ₹ 1,00,000] = ₹ 51,00,000

(ii) Incremental revenue from further processing of Butter into Ghee

(₹ 480 × 16 × 1000 - ₹ 360 × 20 × 1000)	₹ 4,80,000
Less: Incremental cost of further processing of Butter into Ghee	₹ 1,20,000
Incremental operating income from further processing	₹ 3,60,000

The operating income of 'Buttery Butter' will be reduced by ₹ 3,60,000 in February if it sells 20 tonne of Butter to 'Healthy Bones', instead of further processing of Butter into Ghee for sale. Thus, 'Buttery Butter' is advised not to accept the offer and further process butter to make Ghee itself.

$$\begin{aligned}
 2. \quad (a) \quad (i) \quad \text{Material Cost Variance (A + B)} &= \{(SQ \times SP) - (AQ \times AP)\} \\
 ₹ 3,625 &= (SQ \times SP) - ₹ 59,825 \\
 (SQ \times SP) &= ₹ 63,450 \\
 (SQ_A \times SP_A) + (SQ_B \times SP_B) &= ₹ 63,450 \\
 (940 \text{ kg} \times SP_A) + (705 \text{ kg} \times ₹ 30) &= ₹ 63,450 \\
 (940 \text{ kg} \times SP_A) + ₹ 21,150 &= ₹ 63,450 \\
 (940 \text{ kg} \times SP_A) &= ₹ 42,300
 \end{aligned}$$

$$SP_A = \frac{Rs.42,300}{940 \text{ kg}}$$

$$\text{Standard Price of Material-A} = ₹ 45$$

Working Note:

SQ i.e. quantity of inputs to be used to produce actual output

$$= \frac{1,480 \text{ kg}}{90\%} = \mathbf{1,645 \text{ kg}}$$

$$SQ_A = \frac{800 \text{ kg}}{(800 + 600)} \times 1,645 \text{ kg} = 940 \text{ kg}$$

$$SQ_B = \frac{600 \text{ kg}}{(800 + 600)} \times 1,645 \text{ kg} = 705 \text{ kg}$$

$$\begin{aligned}
 (ii) \quad \text{Material Price Variance (A + B)} &= \{(AQ \times SP) - (AQ \times AP)\} \\
 ₹ 175 &= (AQ \times SP) - ₹ 59,825 \\
 (AQ \times SP) &= ₹ 60,000 \\
 (AQ_A \times SP_A) + (AQ_B \times SP_B) &= ₹ 60,000 \\
 (900 \text{ kg} \times ₹ 45 \text{ (from (i) above)}) + (AQ_B \times ₹ 30) &= ₹ 60,000 \\
 ₹ 40,500 + (AQ_B \times ₹ 30) &= ₹ 60,000 \\
 (AQ_B \times ₹ 30) &= ₹ 19,500
 \end{aligned}$$

$$AQ_B = \frac{19,500}{30} = 650 \text{ kg}$$

$$\text{Actual Quantity of Material B} = 650 \text{ kg.}$$

$$\begin{aligned}
 (iii) \quad (AQ \times AP) &= ₹ 59,825 \\
 (AQ_A \times AP_A) + (AQ_B \times AP_B) &= ₹ 59,825 \\
 (900 \text{ kg} \times AP_A) + (650 \text{ kg (from (ii) above)} \times ₹ 32.5) &= ₹ 59,825 \\
 (900 \text{ kg} \times AP_A) + ₹ 21,125 &= ₹ 59,825 \\
 (900 \text{ kg} \times AP_A) &= ₹ 38,700
 \end{aligned}$$

$$AP_A = \frac{38,700}{900} = 43$$

Actual Price of Material-A = ₹ 43

(iv) Total Actual Quantity of Material-A and Material-B

$$= AQ_A + AQ_B$$

$$= 900 \text{ kg} + 650 \text{ kg (from (ii) above)}$$

$$= 1,550 \text{ kg}$$

Now,

$$\text{Revised } SQ_A = \frac{800 \text{ kg}}{(800 + 600)} \times 1,550 \text{ kg} = 886 \text{ kg}$$

$$\text{Revised } SQ_B = \frac{600 \text{ kg}}{(800 + 600)} \times 1,550 \text{ kg} = 664 \text{ kg}$$

(v) Material Mix Variance (A + B) = {(RSQ × SP) – (AQ × SP)}

$$= \{(RSQ_A \times SP_A) + (RSQ_B \times SP_B) - 60,000\}$$

$$= (886 \text{ kg (from (iv) above)} \times ₹ 45 \text{ (from (i) above)})$$

$$+ (664 \text{ kg (from (iv) above)} \times ₹ 30) - ₹ 60,000$$

$$= (39,870 + 19,920) - 60,000 = ₹ 210 \text{ (A)}$$

(b) (i) **Computation of Sale Price Per Bottle**

Output: 60,000 Bottles

	(₹)
Variable Cost:	
Material	2,70,000
Labour (₹ 1,97,000 × 80%)	1,57,600
Factory Overheads (₹1,20,000 × 60%)	72,000
Administrative Overheads (₹ 52,000 × 35%)	18,200
Commission (9% on ₹9,00,000 (Working Note -1))	81,000
Fixed Cost:	
Labour (₹ 1,97,000 × 20%)	39,400
Factory Overheads (₹ 1,20,000 × 40%)	48,000
Administrative Overheads (₹ 52,000 × 65%)	33,800
Total Cost	7,20,000
Profit (20% of ₹ 9,00,000)	1,80,000
Sales Proceeds	9,00,000
Sales Price per bottle $\left(\frac{\text{Rs. } 9,00,000}{60,000} \right)$	15

(ii) **Calculation of Break-even Point**

$$\begin{aligned}\text{Sales Price per Bottle} &= ₹ 14 \\ \text{Variable Cost per Bottle} &= \frac{\text{Rs.5,93,400 (workingnote -2)}}{60,000 \text{ bottles}} = ₹ 9.89 \\ \text{Contribution per Bottle} &= ₹ 14 - ₹ 9.89 = ₹ 4.11 \\ \text{Break -even Point (in number of Bottles)} &= \frac{\text{Fixed cost}}{\text{Contribution per bottle}} \\ &= \frac{\text{Rs.1,21,200}}{\text{Rs.4.11}} = 29,489 \\ \text{Break- even Point (in Sales Value)} &= 29,489 \text{ Bottles} \times ₹ 14 \\ &= ₹ 4,12,846\end{aligned}$$

Working Note

(1) Let the Sales Price be 'X'

$$\text{Commission} = \frac{9X}{100}$$

$$\text{Profit} = \frac{20X}{100}$$

$$X = ₹ 2,70,000 + ₹ 1,57,600 + ₹ 72,000 + ₹ 18,200 + ₹ 39,400 + ₹ 48,000 + ₹ 33,800 + \frac{9X}{100} + \frac{20X}{100}$$

$$X = ₹ 6,39,000 + \frac{9X}{100} + \frac{20X}{100}$$

$$100X - 9X - 20X = 6,39,00,000$$

$$71X = 6,39,00,000$$

$$X = \frac{6,39,00,000}{71} = ₹ 9,00,000$$

(2)

Total Variable Cost		(₹)
Material		2,70,000
Labour		1,57,600
Factory Overheads		72,000
Administrative Overheads		18,200
Commission [(60,000 Bottles × ₹ 14) × 9%]		75,600
		5,93,400

3. (a) (i)

Statement of Equivalent Production

Particulars	Input Units	Particulars	Output Units	Equivalent Production			
				Sugarcane		Labour & O.H.	
				%	Units	%	Units
Opening WIP	4,500	Completed and transferred to Process - II	39,500	100	39,500	100	39,500
Units introduced	1,00,000	Normal Loss (55%* of 1,00,000)	55,000	--	--	--	--
		Abnormal loss	1,000	100	1,000	80	800
		Closing WIP	9,000	100	9,000	80	7,200
	1,04,500		1,04,500		49,500		47,500

* 100 kg of sugarcane extracts only 45 litre of juice. Thus, normal loss = 100 – 45 = 55%

(ii) **Statement showing cost for each element**

Particulars	Sugarcane (₹)	Labour (₹)	Overhead (₹)	Total (₹)
Cost of opening work-in-process	50,000	15,000	45,000	1,10,000
Cost incurred during the month	5,00,000	2,00,000	6,00,000	13,00,000
Total cost: (A)	5,50,000	2,15,000	6,45,000	14,10,000
Equivalent units: (B)	49,500	47,500	47,500	
Cost per equivalent unit: (C) = (A ÷ B)	11.111	4.526	13.579	29.216

(iii) **Statement of Distribution of cost**

	Amount (₹)	Amount (₹)
1. Value of units completed and transferred (39,500 units × ₹ 29.216)		11,54,032
2. Value of Abnormal Loss:		
- Sugarcane (1,000 units × ₹ 11.111)	11,111	
- Labour (800 units × ₹ 4.526)	3,621	
- Overheads (800 units × ₹ 13.579)	10,863	25,595
3. Value of Closing W-I-P:		
- Sugarcane (9,000 units × ₹ 11.111)	99,999	
- Labour (7,200 units × ₹ 4.526)	32,587	
- Overheads (7,200 units × ₹ 13.579)	97,769	2,30,355

(iv) **Process-I A/c**

Particulars	Units	(₹)	Particulars	Units	(₹)
To Opening W.I.P:			By Normal Loss	55,000	--
- Sugarcane	4,500	50,000	By Abnormal loss (₹25,595 + ₹18)	1,000	25,613

			(difference due to approximation))		
- Labour	--	15,000	By Process-II A/c	39,500	11,54,032
- Overheads	--	45,000	By Closing WIP	9,000	2,30,355
To Sugarcane introduced	100,000	5,00,000			
To Direct Labour		2,00,000			
To Overheads		6,00,000			
	104,500	14,10,000		104,500	14,10,000

(b) Workings

Basic wage rate : ₹ 300 per hour

Overtime wage rate before and after working hours : ₹ 300 × 180% = ₹ 540 per hour

Overtime wage rate for Sundays and holidays : ₹ 300 × 230% = ₹ 690 per hour

Computation of average inflated wage rate (including overtime premium):

Particulars	Amount (₹)
Annual wages for the previous year for normal time (1,00,000 hrs. × ₹ 300)	3,00,00,000
Wages for overtime before and after working hours (20,000 hrs. × ₹ 540)	1,08,00,000
Wages for overtime on Sundays and holidays (5,000 hrs. × ₹ 690)	34,50,000
Total wages for 1,25,000 hrs.	4,42,50,000

$$\text{Average inflated wage rate} = \frac{\text{Rs. } 4,42,50,000}{1,25,000 \text{ hours}} = ₹ 354$$

(i) Where overtime is worked regularly as a policy due to workers' shortage:

The overtime premium is treated as a part of employee cost and job is charged at an inflated wage rate. Hence, employee cost chargeable to job 'A'

$$= \text{Total hours} \times \text{Inflated wage rate} = 1,125 \text{ hrs.} \times ₹ 354 = ₹ 3,98,250$$

(ii) Where overtime is worked irregularly to meet the requirements of production:

Basic wage rate is charged to the job and overtime premium is charged to factory overheads as under:

$$\text{Employee cost chargeable to Job 'A': } 1,125 \text{ hours @ ₹ 300 per hour} = ₹ 3,37,500$$

$$\text{Factory overhead: } \{100 \text{ hrs.} \times ₹ (540 - 300)\} + \{25 \text{ hrs.} \times ₹ (690 - 300)\}$$

$$= \{₹ 24,000 + ₹ 9,750\} = ₹ 33,750$$

(iii) Where overtime is worked at the request of the customer, overtime premium is also charged to the job as under:

			(₹)
Job 'A' Employee cost	1,125 hrs. @ ₹ 300	=	3,37,500
Overtime premium	100 hrs. @ ₹ (540 - 300)	=	24,000
	25 hrs. @ ₹ (690 - 300)	=	<u>9,750</u>
Total			<u>3,71,250</u>

4. (a)

Cost Sheet (For the month)

Level of Capacity	30%		50%		100%	
	60,000 units		1,00,000 units		2,00,000 units	
	Per unit (₹)	Total (₹)	Per unit (₹)	Total (₹)	Per unit (₹)	Total (₹)
Works Cost	380.00	2,28,00,000	360.00	3,60,00,000	310.00	6,20,00,000
Add: Fixed administration expenses	6.00	3,60,000	3.60	3,60,000	1.80	3,60,000
Add: Fixed marketing expenses	8.00	4,80,000	4.80	4,80,000	2.40	4,80,000
Add: Variable distribution cost	30.00	18,00,000	30.00	30,00,000	30.00	60,00,000
Add: Special Costs:						
- Gift items costs	-	-	-	-	30.00	60,00,000
- Customers' prizes*	-	-	2.00	2,00,000	1.00	2,00,000
- Refreshments	-	-	2.00	2,00,000	1.00	2,00,000
- Television programme sponsorship cost	-	-	20.00	20,00,000	10.00	20,00,000
Cost of sales	424.00	2,54,40,000	422.40	4,22,40,000	386.20	7,72,40,000
Profit (Bal. fig.)	176.00	1,05,60,000	137.60	1,37,60,000	113.80	2,27,60,000
Sales revenue	600.00	3,60,00,000	560.00	5,60,00,000	500.00	10,00,00,000

* Customers' prize cost:

Particulars	Amount (₹)
1 st Prize	60,000
2 nd Prize	50,000
3 rd Prize	40,000
Consolation Prizes (10 × ₹ 5,000)	50,000
Total	2,00,000

Comparison of Profit

30% capacity	50% capacity	100% capacity
$\frac{\text{Rs.176}}{\text{Rs.600}} \times 100$	$\frac{\text{Rs.137.6}}{\text{Rs.560}} \times 100$	$\frac{\text{Rs.113.8}}{\text{Rs.500}} \times 100$
29.33 %	24.57%	22.76%

Profit (in value as well as in percentage) is higher at 30% level of capacity than that at 50% and 100% level of capacity.

(b)

	Standard Qty/Hrs.	Standard Rate (₹)	Actual Rate (₹)	Variation in Rate (₹)	Escalation Claim (₹)
	(a)	(b)	(c)	(d) = (c) – (b)	(e) = (a) × (d)
Materials					
A	6,000	50.00	48.00	(–) 2.00	(–) 12,000
B	3,000	80.00	79.00	(–) 1.00	(–) 3,000
C	2,500	60.00	66.00	(+) 6.00	15,000
Materials escalation claim: (A)					0
X	3,000	70.00	72.00	(+) 2.00	6,000
Y	2,500	75.00	75.00	–	–
Z	3,000	65.00	66.00	(+) 1.00	3,000
Wages escalation claim: (B)					9,000
Final claim: (A + B)					9,000

Statement showing final price payable

Agreed price		₹ 18,70,000
Agreed escalation:		
Material cost	--	
Labour cost	₹ 9,000	₹ 9,000
Final price payable		₹ 18,79,000

The claim of ₹ 18,94,100 is based on the total increase in cost. This can be verified as shown below:

Statement showing total increase in cost

	Standard Cost			Actual Cost			Increase/ (Decrease)
	Qty/hrs	Rate (₹)	Amount (₹)	Qty/hrs	Rate (₹)	Amount (₹)	
	(a)	(b)	(c) = (a) × (b)	(d)	(e)	(f) = (d) × (e)	
I. Materials							
A	6,000	50.00	3,00,000	6,050	48.00	2,90,400	
B	3,000	80.00	2,40,000	2,950	79.00	2,33,050	
C	2,500	60.00	1,50,000	2,600	66.00	1,71,600	
			6,90,000			6,95,050	5,050
II. Wages							
X	3,000	70.00	2,10,000	3,100	72.00	2,23,200	
Y	2,500	75.00	1,87,500	2,450	75.00	1,83,750	
Z	3,000	65.00	1,95,000	3,100	66.00	2,04,600	
			5,92,500			6,11,550	19,050
							24,100

Contract price	₹ 18,70,000
Add: Increase in cost	<u>₹ 24,100</u>
The final price claimed by the company	<u>₹ 18,94,100</u>

This claim is not admissible because escalation clause covers only that part of increase in cost, which has been caused by inflation.

Note: It is fundamental principle that the contractee would compensate the contractor for the increase in costs which are caused by factors beyond the control of contractor and not for increase in costs which are caused due to inefficiency or wrong estimation.

5. (a) (i) **Computation of pre-determined overhead rate for each production department from budgeted data**

	Production Department		Service Department	
	P ₁	P ₂	S ₁	S ₂
Budgeted factory overheads for the year (₹)	27,51,000	24,50,000	8,00,000	6,00,000
Allocation of service department S ₁ 's costs to production departments P ₁ and P ₂ equally (₹)	4,00,000	4,00,000	(8,00,000)	--
Allocation of service department S ₂ 's costs to production departments P ₁ and P ₂ in the ratio of 2:1 (₹)	4,00,000	2,00,000	--	(6,00,000)
Total	35,51,000	30,50,000	--	--
Budgeted machine hours in department P ₁ (working note-1)	1,05,000	--		
Budgeted labour hours in department P ₂ (working note-1)	--	1,75,000		
Budgeted machine/ labour hour rate (₹)	33.82	17.43		

(ii) **Performance report for Jan, 2020**

(When 4,000 and 3,000 units of Products A and B respectively were actually produced)

	Budgeted (₹)	Actual (₹)
Raw materials used in Dept. P₁:		
A : 4,000 units × ₹ 120	4,80,000	4,89,000
B : 3,000 units × ₹ 150	4,50,000	4,56,000
Direct labour cost (on the basis of labour hours worked in department P ₂)		
A : 4,000 units × 2 hrs. × ₹ 72	5,76,000	5,91,900
B : 3,000 units × 2.5 hrs. × ₹ 75	5,62,500	5,52,000

Overhead absorbed on machine hour basis in Dept. P₁:		
A : 4,000 units × 1.5 hrs. × ₹ 33.82	2,02,920	1,96,420*
B : 3,000 units × 1 hr. × ₹ 33.82	1,01,460	1,33,630*
Overhead absorbed on labour hour basis in Dept. P₂:		
A : 4,000 units × 2 hrs. × ₹ 17.43	1,39,440	1,49,814**
B : 3,000 units × 2.5 hrs. × ₹ 17.43	1,30,725	1,35,198**
	26,43,045	27,03,962

* (Refer to working note 4)

** (Refer to working note 5)

Working notes:

1.

	Product A	Product B	Total
Budgeted output (units)	50,000	30,000	
Budgeted machine hours in Dept. P ₁	75,000 (50,000×1.5 hrs.)	30,000 (30,000×1 hr.)	1,05,000
Budgeted labour hours in Dept. P ₂	1,00,000 (50,000×2 hrs.)	75,000 (30,000×2.5 hrs.)	1,75,000

2.

	Product A	Product B	Total
Actual output (units)	4,000	3,000	
Actual machine hours utilized in Dept. P ₁	6,100	4,150	10,250
Actual labour hours utilised in Dept. P ₂	8,200	7,400	15,600

3. **Computation of actual overhead rates for each production department from actual data**

	Production Department		Service Department	
	P₁	P₂	S₁	S₂
Actual factory overheads for the month of Jan, 2020 (₹)	2,50,000	2,25,000	80,000	60,000
Allocation of service Dept. S ₁ 's costs to production Dept. P ₁ and P ₂ equally (₹)	40,000	40,000	(80,000)	—
Allocation of service Dept. S ₂ 's costs to production Dept. P ₁ and P ₂ in the ratio of 2:1 (₹)	40,000	20,000	—	(60,000)
Total	3,30,000	2,85,000	--	--
Actual machine hours in Dept. P ₁ (working note 2)	10,250	--		
Actual labour hours in Dept. P ₂ (working note 2)	--	15,600		
Actual machine/ labour hour rate (₹)	32.20	18.27		

4. **Actual overheads absorbed (based on machine hours)**

$$A : 6,100 \text{ hrs} \times ₹ 32.20 = ₹ 1,96,420$$

$$B : 4,150 \text{ hrs} \times ₹ 32.20 = ₹ 1,33,630$$

5. **Actual overheads absorbed (based on labour hours)**

$$A : 8,200 \text{ hrs} \times ₹ 18.27 = ₹ 1,49,814$$

$$B : 7,400 \text{ hrs} \times ₹ 18.27 = ₹ 1,35,198$$

(b) (i)

Traditional Absorption Costing

	BABYSOFT - Gold	BABYSOFT- Pearl	BABYSOFT- Diamond	Total
(a) Production of soaps (Units)	4,000	3,000	2,000	9,000
(b) Direct labour (minutes)	30	40	60	-
(c) Direct labour hours (a × b)/60 minutes	2,000	2,000	2,000	6,000

Overhead rate per direct labour hour:

$$= \text{Budgeted overheads} \div \text{Budgeted labour hours}$$

$$= ₹ 1,98,000 \div 6,000 \text{ hours}$$

$$= ₹ 33 \text{ per direct labour hour}$$

Unit Costs:

	BABYSOFT- Gold (₹)	BABYSOFT- Pearl (₹)	BABYSOFT- Diamond (₹)
Direct Costs:			
- Direct Labour	5.00 $\left(\frac{10 \times 30}{60}\right)$	6.67 $\left(\frac{10 \times 40}{60}\right)$	10.00 $\left(\frac{10 \times 60}{60}\right)$
- Direct Material (Refer working note1)	167.50	215.50	248.50
Production Overhead:	16.50 $\left(\frac{33 \times 30}{60}\right)$	22.00 $\left(\frac{33 \times 40}{60}\right)$	33.00 $\left(\frac{33 \times 60}{60}\right)$
Total unit costs	189.00	244.17	291.50
Number of units	4,000	3,000	2,000
Total costs	7,56,000	7,32,510	5,83,000

Working note-1

Calculation of Direct material cost

	BABYSOFT- Gold (₹)	BABYSOFT- Pearl (₹)	BABYSOFT- Diamond (₹)
Essential oils	120.00 $\left(\frac{200 \times 60}{100}\right)$	165.00 $\left(\frac{300 \times 55}{100}\right)$	195.00 $\left(\frac{300 \times 65}{100}\right)$

Cocoa Butter	40.00 $\left(\frac{200 \times 20}{100}\right)$	40.00 $\left(\frac{200 \times 20}{100}\right)$	40.00 $\left(\frac{200 \times 20}{100}\right)$
Filtered water	4.50 $\left(\frac{15 \times 30}{100}\right)$	4.50 $\left(\frac{15 \times 30}{100}\right)$	4.50 $\left(\frac{15 \times 30}{100}\right)$
Chemicals	3.00 $\left(\frac{30 \times 10}{100}\right)$	6.00 $\left(\frac{50 \times 12}{100}\right)$	9.00 $\left(\frac{60 \times 15}{100}\right)$
Total costs	167.50	215.50	248.50

(ii) Activity Based Costing

	BABYSOFT- Gold	BABYSOFT- Pearl	BABYSOFT- Diamond	Total
Quantity (units)	4,000	3,000	2,000	-
Weight per unit (grams)	108 $\{(60 \times 0.8) + 20 + 30 + 10\}$	106 $\{(55 \times 0.8) + 20 + 30 + 12\}$	117 $\{(65 \times 0.8) + 20 + 30 + 15\}$	-
Total weight (grams)	4,32,000	3,18,000	2,34,000	9,84,000
Direct labour (minutes)	30	40	60	-
Direct labour hours	2,000 $\left(\frac{4,000 \times 30}{60}\right)$	2,000 $\left(\frac{3,000 \times 40}{60}\right)$	2,000 $\left(\frac{2,000 \times 60}{60}\right)$	6,000
Machine operations per unit	5	5	6	-
Total operations	20,000	15,000	12,000	47,000

Forklifting rate per gram = ₹ 58,000 ÷ 9,84,000 grams = ₹ 0.06 per gram

Supervising rate per direct labour hour = ₹ 60,000 ÷ 6,000 hours = ₹ 10 per labour hour

Utilities rate per machine operations = ₹ 80,000 ÷ 47,000 machine operations = ₹ 1.70 per machine operations

Unit Costs under ABC:

	BABYSOFT- Gold (₹)	BABYSOFT- Pearl (₹)	BABYSOFT- Diamond (₹)
Direct Costs:			
- Direct Labour	5.00	6.67	10.00
- Direct material	167.50	215.50	248.50

Production Overheads:			
Forklifting cost	6.48 (0.06 × 108)	6.36 (0.06 × 106)	7.02 (0.06 × 117)
Supervising cost	5.00 $\left(\frac{10 \times 30}{60}\right)$	6.67 $\left(\frac{10 \times 40}{60}\right)$	10.00 $\left(\frac{10 \times 60}{60}\right)$
Utilities	8.50 (1.70 × 5)	8.50 (1.70 × 5)	10.20 (1.70 × 6)
Total unit costs	192.48	243.70	285.72
Number of units	4,000	3,000	2,000
Total costs	7,69,920	7,31,100	5,71,440

(iii) **Comments:** The difference in the total costs under the two systems is due to the differences in the overheads borne by each of the products. The Activity Based Costs appear to be more precise.

6. (a) To exercise control over cost, following steps are followed:

- (i) *Determination of pre-determined standard or results:* Standard cost or performance targets for a cost object or a cost centre is set before initiation of production or service activity. These are desired cost or result that need to be achieved.
- (ii) *Measurement of actual performance:* Actual cost or result of the cost object or cost centre is measured. Performance should be measured in the same manner in which the targets are set i.e. if the targets are set up operation-wise, and then the actual costs should also be collected and measured operation-wise to have a common basis for comparison.
- (iii) *Comparison of actual performance with set standard or target:* The actual performance so measured is compared against the set standard and desired target. Any deviation (variance) between the two is noted and reported to the appropriate person or authority.
- (iv) *Analysis of variance and action:* The variance in results so noted are further analysed to know the reasons for variance and appropriate action is taken to ensure compliance in future. If necessary, the standards are further amended to take developments into account.

(b)

Bill of Materials	Material Requisition Note
1. It is the document prepared by the engineering or planning department.	1. It is prepared by the production or other consuming department.
2. It is a complete schedule of component parts and raw materials required for a particular job or work order.	2. It is a document authorizing Store-keeper to issue materials to the consuming department.
3. It often serves the purpose of a material requisition as it shows the complete schedule of materials required for a particular job i.e. it can replace material requisition.	3. It cannot replace a bill of materials.
4. It can be used for the purpose of quotations.	4. It is useful in arriving historical cost only.
5. It helps in keeping a quantitative control on materials drawn through material requisition.	5. It shows the material actually drawn from stores.

(c) Financial expenses causing differences in Financial and Cost Accounts:

- (i) Interest on loans or bank mortgages.
- (ii) Expenses and discounts on issue of shares, debentures etc.
- (iii) Other capital losses i.e., loss by fire not covered by insurance etc.
- (iv) Losses on the sales of fixed assets and investments.
- (v) Goodwill written off.
- (vi) Preliminary expenses written off.
- (vii) Income tax, donations, subscriptions.
- (viii) Expenses of the company's share transfer office, if any.

(d) Standing Charges: These are the fixed costs that remain constant irrespective of the distance travelled. These costs include the following-

- Insurance
- License fees
- Salary to Driver, Conductor, Cleaners, etc. if paid on monthly basis
- Garage costs, including garage rent
- Depreciation (if related to efflux of time)
- Taxes
- Administration expenses, etc.

Running Charges: These costs are generally associated with the distance travelled. These costs include the following-

- Petrol and Diesel
- Lubricant oils,
- Wages to Driver, Conductor, Cleaners, etc. if it is related to operations
- Depreciation (if related to activity)
- Any other variable costs identified.

(e) Objectives of Budgetary Control System

1. **Portraying with precision the overall aims of the business** and determining targets of performance for each section or department of the business.
2. **Laying down the responsibilities** of each of the executives and other personnel so that everyone knows what is expected of him and how he will be judged. Budgetary control is one of the few ways in which an objective assessment of executives or department is possible.
3. **Providing a basis for the comparison** of actual performance with the predetermined targets and investigation of deviation, if any, of actual performance and expenses from the budgeted figures. This naturally helps in adopting corrective measures.

4. **Ensuring the best use of all available resources** to maximise profit or production, subject to the limiting factors. Since budgets cannot be properly drawn up without considering all aspects usually there is good co-ordination when a system of budgetary control operates.
5. **Co-ordinating the various activities** of the business, and centralising control and yet enabling management to decentralise responsibility and delegate authority in the overall interest of the business.
6. **Engendering a spirit of careful forethought**, assessment of what is possible and an attempt at it. It leads to dynamism without recklessness. Of course, much depends on the objectives of the firm and the vigour of its management.
7. **Providing a basis for revision** of current and future policies.
8. **Drawing up long range plans** with a fair measure of accuracy.
9. **Providing a yardstick** against which actual results can be compared.