

INTERMEDIATE: GROUP – II

PAPER – 4: COST AND MANAGEMENT ACCOUNTING

Suggested Answers/ Solution

PART I – Case Scenario based MCQs

1. (c) ₹ 1,50,000 (A)

Fixed Overhead Cost Variance = Absorbed Fixed Overheads - Actual Fixed Overheads

Absorbed Fixed Overheads = (Budgeted Fixed Overheads / Budgeted Production) x Actual Production

= (₹ 20,00,000 / 10,000 units) x 9,500 units

= ₹ 19,00,000

Adjusted Actual Fixed Overheads = ₹ 19,50,000 + ₹ 1,00,000
= ₹ 20,50,000

Fixed Overhead Cost Variance = ₹ 19,00,000 - ₹ 20,50,000
= ₹ 1,50,000 (Adverse)

2. (d) ₹ 1,00,000 (A)

Fixed Overhead Volume Variance = (Actual Production - Budgeted Production) x Standard Fixed Overhead Rate per Unit

Standard Fixed Overhead Rate per Unit = ₹ 20,00,000 / 10,000 units
= ₹ 200 per unit

Fixed Overhead Volume Variance = (9,500 units - 10,000 units) x ₹ 200

= 500 units x ₹ 200

= ₹ 1,00,000 (Adverse)

3. (c) 0

Variable Overhead Efficiency Variance = (Standard Hours for Actual Production - Actual Hours Worked) x Standard Variable Overhead Rate

Standard Hours for Actual Production = 9,500 units x 1.5 hours/unit
= 14,250 hours

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Variable Overhead Efficiency Variance = $(14,250 - 14,250) \times ₹ 50 = 0$

4. (b) ₹ 42,500 (A)

Variable Overhead Expenditure Variance = (Standard Rate - Actual Rate) x Actual Hours Worked

Total Variable Overhead for Actual Hours: $(10,000 \times ₹ 50) + (4,250 \times ₹ 60) = ₹ 5,00,000 + ₹ 2,55,000 = ₹ 7,55,000$

Variable Overhead Expenditure Variance = $(₹ 50 \times 14,250 \text{ hours}) - ₹ 7,55,000$

= ₹ 42,500 (Adverse)

5. (b) ₹ 50,000 (A)

Fixed Overhead Expenditure Variance = Budgeted Fixed Overheads - Actual Fixed Overheads

= ₹ 20,00,000 - ₹ 20,50,000

= ₹ 50,000 (Adverse)

6. (b) ₹ 75,47,750

Funds required for foreign order:

Costs	Amounts
Direct material per unit	90
Add: Direct labour per unit	60
Add: special services per unit	40
	190
Add: packaging per unit (20% x prime cost, 20% x (90 + 60 + 80))	46
Variable cost per unit	236
Total variable cost (236x30,000)	70,80,000
Add: freight	80,000
Add: professional fees	25,000
Add: custom charges (500kg x 80% x 80 x 6)	1,92,000
	73,77,000
Add: shipping ((500x80%/10) x 2,800)	1,12,000
Add: insurance	1,11,000
Funds required	76,00,000

Net amount of interest earned (interest earned in 9.25% and paid is 6.50% for 3 months) = $76,00,000 \times (9.25\% - 6.50\%) \times 3/12 = 52,250$

So, net cash outflow due to export order = $76,00,000 - 52,250 = 75,47,750$

7. (a) \$ 4.23

Minimum price :-

Variable cost (net)	75,47,750
Add: fixed cost recovery (110 x 10,000 units)	11,00,000
Add: loss of profit (200 x 10,000 units)	<u>20,00,000</u>
Minimum price	<u>1,06,47,750</u>
Minimum price per unit 1,06,47,750/30,000	<u>₹ 354.925</u>
Minimum price is \$ (\$1 = ₹ 83.864)	<u>\$4.23</u>

8. (c) ₹ 39,94,250

PROFIT EARNED:

SALES (\$4.90 x 30,000 x RS. 86)	₹ 1,26,42,000
(-) Variable cost (net)	(75,47,750)
(-) allotted fixed cost (10,000 units x110)	<u>(11,00,000)</u>
PROFIT	<u>₹ 39,94,250</u>

9. (d) ₹ 50,94,250

CASH INFLOW:

SALES (\$4.90 x 30,000 x RS. 86)	₹ 1,26,42,000
(-) Variable cost (net)	<u>(75,47,750)</u>
CASH INFLOW	<u>₹ 50,94,250</u>

10. (a) ₹ 19,94,250

Incremental benefits:

SALES (\$4.90 x 30,000 x RS. 86)	₹ 1,26,42,000
(-) Variable cost (net)	(75,47,750)
(-) allotted fixed cost (10,000 units x110)	(11,00,000)
(-) loss of profit (10,000x200)	<u>(20,00,000)</u>
Incremental benefits	<u>19,94,250</u>

11. (c) Replaced- 30 employees, left and discharged- 18 employees and recruited & joined- 42 employees

(i) **Number of employees replaced:**

Employee Turnover rate (Replacement method)

$$= \left(\frac{\text{No. of Replacements}}{\text{Average number of employees on roll}} \times 100 \right)$$

Or,
$$\left(\frac{15}{100} \right) = \left(\frac{\text{No. of replacements}}{200} \right)$$

Or, Number of Replacements =
$$\left(\frac{200 \times 15}{100} \right) = 30$$

(ii) Number of employees left and discharged:

Employee turnover rate (Separation method)

$$= \left(\frac{\text{No. of Separations (S)}}{\text{Average number of employees on roll}} \times 100 \right)$$

Or, $\left(\frac{9}{100} \right) = \left(\frac{S}{200} \right)$

Or, $S = 18$

Hence, number of employees left and discharged = 18

(iii) Number of employees recruited and joined:

Employee turnover rate (Flux method)

$$= \left(\frac{\text{No. of Separations (S) + No. of Accessions (A)}}{\text{Average number of employees on roll}} \times 100 \right)$$

Or, $\left(\frac{30}{100} \right) = \left(\frac{18 + A}{200} \right)$

Or, $A = \left(\frac{6000}{100} - 18 \right) = 42$

Hence, number of employees recruited and joined = 42

12. (c) Losses on the sale of investments not treated in Financial Accounts

13. (d) 1,00,000 units

Current Year production = 60% of 2,00,000 units

= 1,20,000 units

Previous Year production = $\left(\frac{1,20,000 \text{ units}}{1.5 \text{ times}} \right)$

= 80,000 units

Particulars	Previous Year	Current Year	Difference
Sales (Units)	80,000	1,20,000	40,000
Total Cost (₹)	44,72,000	59,28,000	14,56,000

Variable Cost per unit = $\frac{\text{Change in Total Cost}}{\text{Change in sales volume}}$

$$= \left(\frac{\text{₹ } 14,56,000}{40,000 \text{ units}} \right)$$

= ₹ 36.40 per unit

Total Fixed Cost (₹) = ₹ 59,28,000 - (1,20,000 units × ₹ 36.40)

= ₹ 15,60,000

Break- even point (in units) = $\frac{\text{Fixed Cost}}{\text{Contribution per unit}}$

$$= \left(\frac{\text{₹ } 15,60,000}{\text{₹ } 52 - \text{₹ } 36.40} \right)$$

$$= 1,00,000 \text{ units}$$

14. (c) **Marketing and Sales support-** ₹ 28,62,01,000, **Operations-** ₹ 18,03,52,500, **I.T. Cost-** ₹ 30,71,90,000 and **Support functions-** ₹ 19,92,56,500

Calculation of total cost for 'Max Jivan' Insurance policy

	Particulars	Amount (₹)	Amount (₹)
a.	Marketing and Sales support:		
	- Policy development cost	4,86,50,000	
	- Cost of marketing	19,30,71,000	
	- Sales support expenses	4,44,80,000	28,62,01,000
b.	Operations:		
	- Policy issuance cost	4,10,05,000	
	- Policy servicing cost	13,40,65,500	
	- Claim management cost	52,82,000	18,03,52,500
c.	IT Cost		30,71,90,000
d.	Support functions		
	- Postage and logistics	4,50,36,000	
	- Facilities cost	6,49,82,500	
	- Employees cost	2,25,18,000	
	- Office administration cost	6,67,20,000	19,92,56,500
	Total Cost		97,30,00,000

15. (a) ₹ 65,00,000

Calculation of Net joint costs to be allocated:

Particulars	Amount (₹)
Joint Costs	1,30,00,000
Less: Net Realizable value of by-product R ¹² (81,250 kg. × ₹ 40)	32,50,000
Net joint costs to be allocated	97,50,000

Therefore, the amount of joint product cost to be allocated to P² by using the physical volume method

$$= \left(\frac{\text{Physical quantity of P}^2}{\text{Total quantity}} \right) \times \text{Net joint costs to be allocated}$$

$$= \left(\frac{3,90,000 \text{ kg}}{5,85,000 \text{ kg}} \right) \times ₹ 97,50,000 = ₹ 65,00,000$$

PART-II Descriptive Questions

1. (a) (i) **Statement of Joint Cost allocation of inventories of gasoline, diesel and Heavy fuel oil (HFO)**

(By using Net Realisable Value Method)

	Products			Total
	Gasoline	Diesel	Heavy fuel oil (HFO)	
	(₹)	(₹)	(₹)	
Final sales value of total production (Working Note 1)	13,17,600 (3,294 × ₹ 400)	15,84,900 (5,283 × ₹ 300)	13,69,800 (6,849 × ₹ 200)	42,72,300
Less: Additional cost	-	-	(7,44,000)	(7,44,000)
Net realisable value (at split-off point)	13,17,600	15,84,900	6,25,800	35,28,300
Joint cost allocated (Working Note 2)	5,60,156	6,73,795	2,66,049	15,00,000

- (ii) **Cost of goods sold**

(By using Net Realisable Value Method)

	Products			Total
	Gasoline	Diesel	Heavy fuel oil (HFO)	
	(₹)	(₹)	(₹)	
Allocated joint cost (from (i))	5,60,156	6,73,795	2,66,049	15,00,000
Additional costs	--	--	7,44,000	7,44,000
Cost of goods available for sale (CGAS)	5,60,156	6,73,795	10,10,049	22,44,000
Less: Cost of ending inventory (Working Note 1)	2,75,485 (CGAS × 49.18%)	68,862 (CGAS × 10.22%)	33,231 (CGAS × 3.29%)	3,77,578
Cost of goods sold	2,84,671	6,04,933	9,76,818	18,66,422

Working Notes

1. **Total production of three products for the year**

Products	Quantity sold (in gallon)	Quantity of ending inventory (in gallon)	Total production	Ending inventory percentage (%)
(1)	(2)	(3)	(4) = [(2) + (3)]	(5) = (3)/ (4)
Gasoline	1,674	1,620	3,294	49.18

Diesel	4,743	540	5,283	10.22
Heavy fuel oil (HFO)	6,624	225	6,849	3.29

2. Joint cost apportioned to each product

$$\frac{\text{Total Joint cost}}{\text{Total Net Realisable Value}} \times \text{Net Realisable Value of each product}$$

Total cost of Gasoline	$\frac{\text{₹ } 15,00,000}{\text{₹ } 35,28,300} \times \text{₹ } 13,17,600$	₹ 5,60,156
Total cost of Diesel	$\frac{\text{₹ } 15,00,000}{\text{₹ } 35,28,300} \times \text{₹ } 15,84,900$	₹ 6,73,795
Total cost of Heavy fuel oil (HFO)	$\frac{\text{₹ } 15,00,000}{\text{₹ } 35,28,300} \times \text{₹ } 6,25,800$	₹ 2,66,049

(b)

Stores Ledger Control A/c

Particulars	(₹)	Particulars	(₹)
To Balance b/d	9,000	By Work in Process	48,000
To General Ledger Adjustment A/c	48,000	By Overhead Control A/c	6,000
To Work in Process A/c	24,000	By Overhead Control A/c (Deficiency)	1,800*
		By Balance c/d	25,200
	81,000		81,000

*Deficiency assumed as normal (alternatively can be treated as abnormal loss)

Work in Progress Control A/c

Particulars	(₹)	Particulars	(₹)
To Balance b/d	18,000	By Stores Ledger Control a/c	24,000
To Stores Ledger Control A/c	48,000	By Costing P/L A/c (Balancing figures being Cost of finished goods)	1,20,000
To Wages Control A/c	18,000	By Balance c/d	12,000
To Overheads Control a/c	72,000		
	1,56,000		1,56,000

Overheads Control A/c

Particulars	(₹)	Particulars	(₹)
To Stores Ledger Control A/c	6,000	By Work in Process A/c	72,000
To Stores Ledger Control A/c	1,800	By Balance c/d (Under absorption)	13,800

To Wages Control A/c (₹ 21,000- ₹18,000)	3,000		
To Gen. Ledger Adjust. A/c	75,000		
	85,800		85,800

Costing Profit & Loss A/c

Particulars	(₹)	Particulars	(₹)
To Work in progress	1,20,000	By Gen. ledger Adjust. A/c (Sales) (1,20,000 + 12,000)	1,32,000
To Gen. Ledger Adjust. A/c (Profit)	12,000		
	1,32,000		1,32,000

(c) Calculation of earnings for workers under different incentive plans:

Halsey's Premium Plan:

	Worker – A	Worker – B
Actual time taken	40 hours	40 hours
Standard time for actual Production	44 hours $(\frac{176 \text{ Pcs} \times 15 \text{ Min.}}{60 \text{ Min.}})$	35 hours $(\frac{140 \text{ Pcs} \times 15 \text{ Min.}}{60 \text{ Min.}})$
Minimum Wages	₹ 1,600 (40 hours x ₹ 40)	₹ 1,600 (40 hours x ₹ 40)
Bonus	₹ 80 {50% (44-40) x ₹40}	No bonus
Earning	<u>₹ 1,680</u>	<u>₹ 1,600</u>

Rowan's Premium Plan:

Minimum Wages (as above)	₹ 1,600	₹ 1,600
Bonus	= ₹ 145.45 $(\frac{4 \text{ hours}}{44 \text{ hours}} \times 40 \text{ hours} \times ₹40)$	No bonus
Earning	<u>₹ 1,745.45</u>	<u>₹ 1,600</u>

2. (a) (i) Statement Showing Distribution of Overheads of Baba Ltd.

Particulars	Basis	Total	Production Departments			Service Departments	
			X1	Y2	Z3	QC	M
			(₹)	(₹)	(₹)	(₹)	(₹)
Direct wages	Actual	13,56,000	-	-	-	12,00,000	1,56,000
Rent & rates	Area	40,00,000	8,00,000	10,00,000	12,00,000	8,00,000	2,00,000

General lighting	Light points	4,80,000	80,000	1,20,000	1,60,000	80,000	40,000
Indirect wages	Direct wages	15,51,200	4,80,000	3,20,000	4,80,000	2,40,000	31,200
Power	H.P.	12,00,000	4,80,000	2,40,000	4,00,000	80,000	—
Depreciation of machines	Value of machines	80,00,000	19,20,000	25,60,000	32,00,000	1,60,000	1,60,000
Sundries	Direct wages	77,56,000	24,00,000	16,00,000	24,00,000	12,00,000	1,56,000
		2,43,43,200	61,60,000	58,40,000	78,40,000	37,60,000	7,43,200

(ii) Redistribution of Service Department's Expenses over Production Departments

	X1 (₹)	Y2 (₹)	Z3 (₹)	QC (₹)	M (₹)
Total overhead distributed as above	61,60,000	58,40,000	78,40,000	37,60,000	7,43,200
Dept. QC Overheads apportioned (20:30:40:—:10)	7,52,000	11,28,000	15,04,000	-37,60,000	3,76,000
Dept. M overheads apportioned (40:20:30:10:—)	4,47,680	2,23,840	3,35,760	1,11,920	-
Dept. QC Overheads apportioned (20:30:40:—:10)	22,384	33,576	44,768	-1,11,920	11,192
Dept. M overheads apportioned (40:20:30:10:—)	4,477	2,238	3,358	1,119	-11,192
Dept. QC Overheads apportioned (20:30:40:—:10)	224	336	448	-1,119	112
Dept. M overheads apportioned (40:20:30:10:—)	45	22	34	11	-112
Dept. QC Overheads apportioned (20:30:40:—:10)	2	3	5	-11	-
Total	73,86,812	72,28,015	97,28,373		
Working hours	6,140	8,950	4,838		
Rate per hour	1,203	808	2,011		

(iii) Determination of total cost of a bicycle:

Particulars	(₹)
Direct material cost	20,000
Direct labour cost	12,000
Overhead cost (See working note)	14,885
	46,885

Working Note:

Overhead cost

$$= (\text{₹ } 1,203 \times 4 \text{ hrs.}) + (\text{₹ } 808 \times 5 \text{ hrs.}) + (\text{₹ } 2,011 \times 3 \text{ hrs.})$$

$$= \text{₹ } 4,812 + \text{₹ } 4,040 + \text{₹ } 6,033 = \text{₹ } 14,885$$

(b) Determination of total sales value of Luxury pens

Particulars	Amount per Batch (₹)	Amount for 2,400 units or 20 batches (₹)
Direct materials	57,375	11,47,500
Direct wages	6,750	1,35,000
Batch set-up cost	18,900	3,78,000
Production overheads (20% of direct wages)	1,350	27,000
Total Production Cost	84,375	16,87,500
Selling, distribution and administration cost (15% of Total Production cost)	12,656	2,53,125
Total Cost	97,031	19,40,625
Add: Profit (25% of Sales value or 1/3 rd of Total cost)	32,344	6,46,875
Total Sales value	1,29,375	25,87,500

3. (a) Statement of Cost of YSPP Ltd. for the year ended 31st March:

S. NO.	PARTICULARS	(₹)	(₹)
(I)	Material consumed:		
	Raw materials purchased	35,00,00,000	
	Freight inwards	39,22,100	
	Add: opening stock of raw materials	63,00,000	
	Less: closing stock of raw materials	(33,60,000)	35,68,62,100
(II)	Direct employee (labour) cost:		
	Wages paid to factory workers	1,02,20,000	
	Contribution made towards employees' PF & ESIS	12,60,000	1,14,80,000
(III)	Direct expenses:		

	Hire charges paid for hiring specific equipment	8,40,000	
	Amount paid for power & fuel	16,17,000	
	Amortised cost of moulds and patterns	7,84,000	
	Job charges paid to job workers	28,42,000	60,83,000
	Prime cost		37,44,25,100
(IV)	Works/ factory overheads:		
	Lease rent paid for production assets	3,92,000	
	Depreciation on factory building	2,94,000	
	Depreciation on plant & machinery	4,41,000	
	Repairs & maintenance paid for plant & machinery	1,68,000	
	Insurance premium paid for plant & machinery	1,09,200	
	Insurance premium paid for factory building	63,350	
	Insurance premium paid for stock of raw materials & WIP	1,26,000	
	Salary paid to supervisors	4,41,000	20,34,550
	Gross factory cost		37,64,59,650
	Add: opening value of w-i-p		32,20,000
	Less: closing value of w-i-p		(30,45,000)
	Factory cost		37,66,34,650
(V)	Quality control cost:		
	Expenses paid for quality control check activities	68,600	
	Salary paid to quality control staffs	3,36,700	4,05,300
(VI)	Research & development cost paid for improvement in production process		63,700
(VII)	Administration cost related with production:		
	-Expenses paid for administration of factory work	4,15,100	

	-Salary paid to production control manager	33,60,000	37,75,100
(VIII)	Add: primary packing cost		3,36,000
	Cost of production		38,12,14,750
	Add: opening stock of finished goods		38,50,000
	Less: closing stock of finished goods		(63,00,000)
	Cost of goods sold		37,87,64,750
(IX)	Administrative overheads:		
	Depreciation on office building	1,96,000	
	Salary paid to manager-finance & accounts	32,13,000	
	Salary paid to general manager	43,96,000	
	Fee paid to auditors	6,30,000	
	Fee paid to independent directors	7,70,000	92,05,000
(X)	Selling overheads:		
	Repairs & maintenance paid for sales office building	63,000	
	Salary paid to manager- sales & marketing	35,42,000	36,05,000
(XI)	Distribution overheads:		
	Depreciation on delivery vehicles	3,01,000	
(XII)	Packing cost paid for re-distribution of finished goods	3,92,000	6,93,000
	Cost of sales		39,22,67,750

Note: Demurrage is a type of penalty, thus will not form part of cost.

(b) Basic Data:

A (Number of units to be purchased annually) = 10,000 units

O (Ordering cost per order) = ₹ 40

C (Annual cost of storage per unit) = ₹ 5

Purchase price per unit = ₹ 80 + ₹ 20 (Insurance charges)

= ₹ 100

(Note: Cash discount is treated as an interest and finance item and thus, it is ignored.)

Computations:

- (i) **Re-ordering level** = Maximum usage per period × Maximum lead time
 (ROL) = 40 units per day × 30 days
 = **1,200 units**
- (ii) **Maximum level** = ROL + ROQ – [Min. rate of consumption × Min. lead time] (Refer to working notes 1 and 2)
 = 1200 units + 400 units – [20 units per day × 10 days]
 = **1,400 units**
- (iii) **Minimum level** = ROL – [Average rate of consumption × Average re-order-period]
 = 1,200 units – (30 units per day × 20 days)
 = **600 units**
- (iv) **Danger level** = Average consumption × Lead time for emergency purchases
 = 30 units per day × 8 days
 = **240 units**

Working Notes:

1. Minimum rate of consumption per day (X)

$$\text{Av. rate of consumption} = \frac{\text{Minimum rate of consumption} + \text{Maximum rate of consumption}}{2}$$

$$30 \text{ units per day} = \frac{X \text{ units/day} + 40 \text{ units per day}}{2}$$

Or, X = 20 units per day.

2. Re-order Quantity (ROQ) or Economic Order Quantity (EOQ)

$$= \sqrt{\frac{2 \times 10,000 \text{ units} \times \text{Rs.} 40}{\text{Rs.} 5}}$$

= 400 units

4. (a) (i) **Statement Showing “Cost per unit - Traditional Method”**

Particulars of Costs	Hand towels (₹)	Kitchen towels (₹)	Gym towels (₹)
Direct Materials	450	400	600

Direct Labour [(4, 12, 8 hours) × ₹ 100]	400	1,200	800
Production Overheads [(10, 18, 14 hours) × ₹ 30]	300	540	420
Cost per unit	1,150	2,140	1,820

(ii) Statement Showing “Cost per unit - Activity Based Costing”

Products	Hand towels	Kitchen towels	Gym towels
Production (units)	9,000	15,000	60,000
	(₹)	(₹)	(₹)
Direct Materials	40,50,000 (9,000 units x ₹ 450)	60,00,000 (15,000 units x ₹ 400)	3,60,00,000 (60,000 units x ₹ 600)
Direct Labour (refer Part (i) above)	36,00,000 (9,000 units x ₹ 400)	1,80,00,000 (15,000 units x ₹ 1,200)	4,80,00,000 (60,000 units x ₹ 800)
Setup Costs @ ₹ 1,44,000 per setup	28,80,000 (20 setups x ₹ 1,44,000)	14,40,000 (10 setups x ₹ 1,44,000)	28,80,000 (20 setups x ₹ 1,44,000)
Inspection Costs @ ₹ 63,000 per inspection	63,00,000 (100 inspections x ₹ 63,000)	25,20,000 (40 inspections x ₹ 63,000)	37,80,000 (60 inspections x ₹ 63,000)
Purchase Related Costs @ ₹ 11,250 per purchase order	6,75,000 (60 purchase orders x ₹ 11,250)	11,25,000 (100 purchase orders x ₹ 11,250)	18,00,000 (160 purchase orders x ₹ 11,250)
Store delivery costs @ ₹ 14,400 per store delivery	6,48,000 (45 store delivery x ₹ 14,400)	11,52,000 (80 store delivery x ₹ 14,400)	18,00,000 (125 store delivery x ₹ 14,400)
Machine Related Costs @ ₹ 7.5 per hour	6,75,000 (90,000 hours x ₹ 7.5)	20,25,000 (2,70,000 hours x ₹ 7.5)	63,00,000 (8,40,000 hours x ₹ 7.5)
Total Costs	1,88,28,000	3,22,62,000	10,05,60,000
Cost per unit (Total Cost ÷ no. of Units)	2,092	2,151	1,676

Working Notes:

A. Number of Batches, Purchase Orders, Inspections and Store Deliveries-

	Particulars	Hand towels	Kitchen towels	Gym towels	Total
A.	Production (units)	9,000	15,000	60,000	
B.	Batch Size (units)	450	1,500	3,000	
C.	Number of Batches (A÷B)	20	10	20	50
D.	Number of Purchase Order per batch	3	10	8	

E.	Total Purchase Orders [C × D]	60	100	160	320
F.	Number of Inspections per batch	5	4	3	
G.	Total Inspections [C × F]	100	40	60	200
H.	Total Store Deliveries	45	80	125	250

B. Total Machine Hours-

	Particulars	Hand towels	Kitchen towels	Gym towels
A.	Machine Hours per unit	10	18	14
B.	Production (units)	9,000	15,000	60,000
C.	Total Machine Hours [A × B]	90,000	2,70,000	8,40,000

Total Machine Hours = 12,00,000

Total Production Overheads-

= 12,00,000 hrs. × ₹ 30 = ₹ 3,60,00,000

C. Cost Driver Rates-

Cost Pool	%	Overheads (₹)	Cost Driver Basis	Cost Driver (Units)	Cost Driver Rate (₹)
Setup	20%	72,00,000	Number of batches	50	1,44,000 per Setup
Inspection	35%	1,26,00,000	Number of inspections	200	63,000 per Inspection
Purchases	10%	36,00,000	Number of purchase order	320	11,250 per Purchase order
Store delivery	10%	36,00,000	Number of store deliveries	250	14,400 per store delivery
Machine Operation	25%	90,00,000	Machine Hours	12,00,000	7.5 per Machine Hour

(b) Workings:

1. Sale receipts

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Forecast sales (S)	1,000	1,000	1,000	1,250	1,500	2,000	1,900	2,200
	₹	₹	₹	₹	₹	₹	₹	₹
S×3000	30,00,000	30,00,000	30,00,000	37,50,000	45,00,000	60,00,000	57,00,000	66,00,000
Debtors pay:								
1 month 50%		15,00,000	15,00,000	15,00,000	18,75,000	22,50,000	30,00,000	28,50,000
2nd month 50%		-	15,00,000	15,00,000	15,00,000	18,75,000	22,50,000	30,00,000
	-	15,00,000	30,00,000	30,00,000	33,75,000	41,25,000	52,50,000	58,50,000

2. Variable overheads

Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,000	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹	₹
Var. overhead (Q×400)	4,00,000	5,00,000	6,00,000	8,00,000	7,60,000			
Var. overhead (Q×500)						11,00,000	11,00,000	11,50,000
Paid one month later		4,00,000	5,00,000	6,00,000	8,00,000	7,60,000	11,00,000	11,00,000

3. Wages payments

Month	Dec	Jan	Feb	Mar	Apr	May	Jun
Qty produced (Q)	1,250	1,500	2,000	1,900	2,200	2,200	2,300
	₹	₹	₹	₹	₹	₹	₹
Wages (Q × 800)	10,00,000	12,00,000	16,00,000				
Wages (Q × 1,000)				19,00,000	22,00,000	22,00,000	23,00,000
75% this month	7,50,000	9,00,000	12,00,000	14,25,000	16,50,000	16,50,000	17,25,000
25% next month		2,50,000	3,00,000	4,00,000	4,75,000	5,50,000	5,50,000
	7,50,000	11,50,000	15,00,000	18,25,000	21,25,000	22,00,000	22,75,000

CASH BUDGET – SIX MONTHS ENDED JUNE

	Jan	Feb	Mar	Apr	May	Jun
	₹	₹	₹	₹	₹	₹
Receipts:						
Sales receipts	30,00,000	30,00,000	33,75,000	41,25,000	52,50,000	58,50,000
Freehold property	-	-	-	-	-	20,00,000
	30,00,000	30,00,000	33,75,000	41,25,000	52,50,000	78,50,000
Payments:						
Materials	10,00,000	12,50,000	15,00,000	20,00,000	19,00,000	22,00,000
Var. overheads	5,00,000	6,00,000	8,00,000	7,60,000	11,00,000	11,00,000
Wages	11,50,000	15,00,000	18,25,000	21,25,000	22,00,000	22,75,000
Machine	-	-	-	-	-	5,00,000
Tax	-	-	1,00,000	-	-	-
	26,50,000	33,50,000	42,25,000	48,85,000	52,00,000	60,75,000
Net cash flow	3,50,000	(3,50,000)	(8,50,000)	(7,60,000)	50,000	17,75,000
Balance b/f	50,000	4,00,000	50,000	(8,00,000)	(15,60,000)	(15,10,000)
Cumulative cash flow	4,00,000	50,000	(8,00,000)	(15,60,000)	(15,10,000)	2,65,000

5. (a) (i) Process I – Statement of Equivalent Production

Particulars	Completed Units	Closing stock of WIP			Equivalent Production units
		Units	% of Completion	Equivalent Units	
	(1)			(2)	(1) + (2)
Material	90,000	30,000	100%	30,000	1,20,000
Wages	90,000	30,000	50%	15,000	1,05,000
Overhead	90,000	30,000	50%	15,000	1,05,000

Process I

Particulars	Process Cost (₹)	Equivalent Production (units)	Process Cost p.u. (₹) (2)/(3)	WIP stock Equivalent units	Cost of WIP Stock (₹) (4) x (5)	Transfer to Process II (₹) (2)-(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Material	22,50,000	1,20,000	18.750	30,000	5,62,500	16,87,500
Wages	27,00,000	1,05,000	25.714	15,000	3,85,714	23,14,286
Overhead	18,00,000	1,05,000	17.143	15,000	2,57,143	15,42,857
	67,50,000				12,05,357	55,44,643

Process I A/c

	Particulars	Unit	(₹)		Particulars	Units	(₹)
To	Direct material	1,20,000	22,50,000	By	Process II A/c	90,000	55,44,643
To	Direct wages	--	27,00,000	By	Closing W-I-P	30,000	12,05,357
To	Factory overhead	--	18,00,000				
		1,20,000	67,50,000			1,20,000	67,50,000

(ii) Process II – Statement of Equivalent Production

Particulars	Completed Units	Closing stock of WIP			Equivalent Production units
		Units	% of Completion	Equivalent Units	
	(1)			(2)	(1) + (2)
Material	84,000	5,400*	100%	5,400	89,400
Wages	84,000	5,400	25%	1,350	85,350
Overhead	84,000	5,400	25%	1,350	85,350

*(90,000 - 84,000 - 600) units = 5,400 units

Process II

Particulars	Process Cost (₹)	Equivalent Production (units)	Process Cost p.u. (₹) (2)/(3)	WIP stock Equivalent units	Cost of WIP Stock (₹) (4) x (5)	Transfer to Finished Stock (₹) (2)-(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Material	55,44,643	89,400	62.021	5,400	3,34,911	52,09,732

Wages	5,25,000	85,350	6.151	1,350	8,304	5,16,696
Overhead	6,75,000	85,350	7.909	1,350	10,677	6,64,323
	67,44,643				3,53,892	63,90,751
Add: Packing Material Cost						6,00,000
Cost of Finished Stock						69,90,751

Process II A/c

	Particulars	Units	(₹)		Particulars	Units	(₹)
To	Process I	90,000	55,44,643	By	Finished Stock	84,000	69,90,751
To	Direct wages	--	5,25,000	By	Normal loss	600	--
To	Factory overhead	--	6,75,000	By	WIP stock	5,400	3,53,892
To	Packing charges	--	6,00,000				
		90,000	73,44,643			90,000	73,44,643

(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.

6. (a) Internal Users

Internal users, who use the Cost and Management Accounting information may include the followings:

(a) Policy Makers- The policy makers are those who formulate strategies

- (i) to achieve the goals (short & long term both) to fulfil the objectives of the organisation.
- (ii) to position the organisation into the competitive market environment.

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(iii) to design the organisational structure to get the policy and strategies implemented. etc.

(b) Managers- The managers use the information

(i) to know the cost of a cost object and cost centre

(ii) to know the price for the product or service

(iii) to measure and evaluate performance of responsibility centres

(iv) to know the profitability-product-wise, department-wise, customer-wise etc.

(v) to evaluate the strategic options and to make decisions

(c) Operational level staff- The operational level staff like supervisors, foreman, team leaders require information

(i) to know the objectives and performance goals for them

(ii) to know product and service specifications like volume, quality and process etc.

(iii) to know the performance parameters against which their performance is measured and evaluated.

(iv) to know divisional (responsibility centre) profitability etc.

(d) Employees- Employees are concerned with the information related with time and attendance, incentives for work, performance standards etc.

External Users

External users, who use the Cost and Management Accounting information may include the followings:

(a) Regulatory Authorities- Regulatory Authorities are concerned with cost accounting data and information for different purpose which includes tariff determination, providing subsidies, rate fixation etc. To do this the regulatory bodies require information on the basis of some standards and format in this regard.

(b) Auditors- The auditors while conducting audit of financial accounts or for some other special purpose audit like cost audit etc. require information related with costing and reports reviewed by management etc.

(c) Shareholders- Shareholders are concerned with information that effect their investment in the entity. Management communicates to the shareholders through periodic communique, annual reports etc. regarding new orders received, product expansion, market share for products etc.

(d) **Creditors and Lenders-** Creditors and lenders are concerned with data and information which affects an entity's ability to serve lenders or creditors. For example, any financial institutions which provides loan to an entity against book debts and inventories are more concerned with regular reporting on net debt position and stock balances.

(b) Methods for ascertaining Service Cost Unit

Composite Cost Unit

Sometime two measurement units are combined together to know the cost of service or operation. These are called composite cost units. For example, a public transportation undertaking would measure the operating cost per passenger per kilometer.

Examples of Composite units are Tonne- km., Quintal- km, Passenger-km., Patient-day etc. **Composite unit may be computed in two ways.**

- (i) Absolute (Weighted Average) basis.
- (ii) Commercial (Simple Average) basis.

In both bases of computation of service cost unit, weightage is also given to qualitative factors rather quantitative (which are directly related with variable cost elements) factors alone.

(i) **Weighted Average or Absolute basis** – It is a summation of the products of qualitative and quantitative factors. For example, to calculate absolute Tonne-Km for a goods transport is calculated as follows.:

$$\sum(\text{Weight Carried} \times \text{Distance})_1 + (\text{Weight Carried} \times \text{Distance})_2 + \dots + (\text{Weight Carried} \times \text{Distance})_n$$

Similarly, in case of Cinema theatres, price for various classes of seats is fixed differently. For example–

First class seat may be provided with higher quality service and hence charged at a higher rate, whereas Second Class seat may be priced less. In this case, appropriate weight to be given effect for First Class seat and Second Class seat – to ensure proper cost per composite unit.

(ii) **Simple Average or Commercial Basis** – It is the product of average qualitative and total quantitative factors. For example, in case of goods transport, Commercial Tonne-Km is arrived at by multiplying total distance km., by average load quantity.

$$\Sigma(\text{Distance}_1 + \text{Distance}_2 + \dots + \text{Distance}_n) \times \left(\frac{W_1 + W_2 + \dots + W_n}{n} \right)$$

In both the example, variable cost is dependent of distance and is a quantitative factor. Since, the weight carried does not affect the variable cost hence and is a qualitative factor.

Equivalent Cost Unit/ Equivalent Service Unit:

To calculate cost or pricing of two more different grade of services which uses common resources, **each grade of service is assigned a weight and converted into equivalent units.** Converting services into equivalent units make different grade of services equivalent and comparable.

(c)

	Points	Description
1.	Based on Estimates	Budgets are based on a series of estimates, which are based on the conditions prevalent or expected at the time budget is established. It requires revision in plan if conditions change.
2.	Time factor	Budgets cannot be executed automatically. Some preliminary steps are required to be accomplished before budgets are implemented. It requires proper attention and time of management. Management must not expect too much during the initial development period.
3.	Co-operation Required	Staff co-operation is usually not available during the initial budgetary control exercise. In a decentralised organisation, each unit has its own objective and these units enjoy some degree of discretion. In this type of organisation structure, coordination among different units is required. The success of the budgetary control depends upon willing co-operation and teamwork,
4.	Expensive	The implementation of budget is somewhat expensive. For successful implementation of the budgetary control, proper organisation structure with responsibility is prerequisite. Budgeting process start from the collection of information to for preparing the budget and performance analysis. It consumes valuable resources (in terms of qualified manpower, equipment, etc.) for this purpose; hence, it is an expensive process.
5.	Not a substitute for management	Budget is only a managerial tool and must be intelligently applied for management to get

		benefited. Budgets are not a substitute for good management.
6.	Rigid document	Budgets are sometime considered as rigid documents. But in reality, an organisation is exposed to various uncertain internal and external factors. Budget should be flexible enough to incorporate ongoing developments in the internal and external factors affecting the very purpose of the budget.

(d)

S. No.	Method of costing	Example of industry where this method is followed
(i)	Job Costing	Printing press
(ii)	Process Costing	Paper and Pulp
(iii)	Batch Costing	Bakery
(iv)	Multiple Costing	Bicycles