PAPER – 12 : MANAGEMENT ACCOUNTING

SUGGESTED ANSWER

SECTION – A

1.

(i) (C)

(ii) (B)

(iii) (B)

(iv) (B)

(v) (A)

(vi) (C)

(vii) (A)

(viii) (C)

(ix) (B)

(x) (A)

(xi) (B)

(xii) (C)

(xiii) (B)

(xiv) (D)

(xv) (D)

SECTION – B

2. (a):

The distinction between Management Accounting and Financial Accounting is given below:

Sl.	Basis for Comparison	Financial Accounting	Management Accounting
1	Purpose	Financial Accounting classifies, analyses, records, and summarizes the financial transactions of a particular period of the company.	Management Accounting helps management to make effective decisions about the business.
2	Application	Financial Accounting is prepared to reflect true and fair picture of financial affairs.	Management Accounting helps management to take meaningful steps and strategize.
3	Scope	The scope is pervasive, but not as much as the management accounting.	The scope is much broader.
4	Information type	Quantitative.	Quantitative and qualitative.
5	Inter-dependence	It is not dependent on management accounting.	Management Accounting is basically decision making accounting and depends on information created by Financial Accounting as well as Cost Accounting.

6	Statutory requirement	It is legally mandatory to prepare financial accounts of all companies. (for example, Companies Act 2013 and relevant rules of Accounting Standards furnishes the statutory requirements)	Management Accounting has no statutory requirement.
7	Format	Financial accounting has specific formats for presenting and recording information.	There's no set format for presenting information in Management Accounting.
8	Users	Mainly for potential investors as well as all stakeholders.	Only for management.
9	Verifiable	The information presented is verifiable.	The information presented is predictive and not immediately Verifiable

2. (b):

1. Calculation of Cost Driver Rates

Calculation of the rate for each cost driver:

- **Order Processing Rate:**
  = Total Order Processing Cost / Total Orders Processed
  = ₹ 7,50,000 / 600 Orders
  = ₹ 1,250 per order
- **Machine Processing Rate:**
  = Total Machine Processing Cost / Total Machine Hours Worked
  = ₹ 25,00,000 / 50,000 Machine Hours
  = ₹ 50 per machine hour
- **Product Inspection Rate:**
  = Total Product Inspection Cost / Total Inspection Hours
  = ₹ 5,00,000 / 20,000 Inspection Hours
  = ₹ 25 per inspection hour

2. Statement of Manufacturing Cost per Unit (Using Activity-Based Costing)

Particulars	Robo-Welder (RW-1) (₹)	Robo-Painter (RP-2) (₹)
A. Direct Costs per Unit		
Direct Material Cost	700.00	800.00
Direct Labour Cost	720.00	960.00
Total Direct Cost per Unit	1,420.00	1,760.00
B. Overhead Costs (Allocation)		
Order Processing (400 orders x ₹1,250) (200 orders x ₹1,250)	5,00,000	2,50,000
Machine Processing (22,500 hours x ₹50) (27,500 hours x ₹50)	11,25,000	13,75,000
Product Inspection (5,000 hours x ₹25) (15,000 hours x ₹25)	1,25,000	3,75,000
Total Overhead Cost	17,50,000	20,00,000
C. Overhead Cost per Unit		
Budgeted Production Volume (Units)	6,400	7,700
Overhead Cost per Unit (Total Overhead / Production Volume)	273.44	259.74
D. Total Manufacturing Cost per Unit (A + C)	1,693.44	2,019.74

3. (a):

Final Statement of Cost-Effective Decision

1. Component D: Buy all 3,000 units from the market as buying is cheaper than variable cost of production.
2. Component B & C: Manufacture full requirements (3,500 and 2,000 units) in the Normal Shift.
3. Component A:

- Manufacture 1,375 units in Normal Shift (utilizing balance hours).
- Manufacture 1,500 units in Second Shift (utilizing exactly 3,000 hours to optimize step costs).
- Buy 125 units from the market.

Workings:

1. Analysis of Variable Costs & Ranking (Normal Shift)

First, we calculate the Variable Cost (VC) of making each unit in the normal shift and compare it with the buying price to find the savings. We also identify the machine hours required per unit.

- Machine Hours per Unit = Direct Expenses ÷ ₹40 per hour.
- Variable Cost (VC) = Direct Material + Direct Labour + Direct Expenses.
- Saving = Buy Price - VC.

Particulars	A	B	C	D
Direct Material	120	140	150	120
Direct Labour	60	80	120	80
Direct Expenses	80	60	80	80
Total VC (Normal)	260	280	350	280
Buy Price	300	320	400	270
Saving by Making	40	40	50	(10)
Decision for D				BUY ALL 3,000 units
Machine Hrs/ Unit	2	1.5	2	N/A
Saving per Hour	₹ 20	₹ 26.67	₹ 25	-
Ranking	III	I	II	-

Observation for Component D:

Since the Variable Cost of Making (₹ 280) is higher than the Buy Price (₹ 270), Component D should be bought entirely regardless of capacity. This saves ₹ 10 per unit immediately.

2. Allocation of Normal Shift Capacity (12,000 Hours)

We allocate the 12,000 available hours based on the ranking

Priority	Product	Units Required	Hrs/Unit	Total Hours Need	Hours Allocated	Units to Make	Balance Units
1	B	3,500	1.5	5,250	5,250	3,500	0
2	C	2,000	2.0	4,000	4,000	2,000	0
3	A	3,000	2.0	6,000	2,750 (Bal)	1,375	1,625
	Total			15,250	12,000		

- Balance Hours for A: 12,000 - 5,250 - 4,000 = 2,750 hours.
- Units of A in Normal Shift: 2,750 / 2 = 1,375 units.
- Remaining A to Produce: 3,000 - 1,375 = 1,625 units.

3. Evaluation of Second Shift for Balance of Component A
We must decide whether to Make or Buy the remaining 1,625 units of A.

- Hours Required: 1,625 units x 2 hrs = 3,250 hours
- Second Shift Costs:
- Labour increases by 20% (₹60 to ₹72).
- New VC for A = 120 (Mat) + 72 (Lab) + 80 (Exp) = ₹272.
- Saving per unit vs Buy (₹300) = 300 - 272 = ₹28.
- Fixed Cost: ₹6,000 for every 1,000 hours or part thereof.

Optimization Analysis:
We analyze the fixed cost to see if we should produce all 1,625 units.

- **Scenario 1:** Make all 1,625 units (3,250 hours)
- Total Variable Saving: 1,625 x 28 = ₹45,500
- Fixed Cost: 3,250 hrs (need 4 slabs of 1,000 hrs)
- Additional Fixed cost = 4 x 6,000 = ₹24,000
- Net Benefit: 45,500 - 24,000 = ₹21,500

- **Scenario 2: Limit to 3,000 hours (1,500 units) to avoid the 4th fixed cost slab.**
- Total Variable Saving: 1,500 x 28 = ₹42,000
- Fixed Cost Steps: 3,000 hrs (need 3 slabs of 1000 hrs)
- Additional Fixed cost = ₹3 x 6,000 = ₹18,000
- Net Benefit: 42,000 - 18,000 = ₹24,000

Conclusion:
Scenario 2 yields a higher net benefit (₹24,000 vs ₹21,500).

- The incremental saving from the last 125 units (125x28 = ₹3,500) is less than the incremental fixed cost to produce them (₹ 6,000).
- Therefore, manufacture 1,500 units in second shift (utilizing exactly 3,000 hours), and
- buy the last 125 units instead of making them in the second shift.

3. (b):
Part (i): Determination of Transfer Price for Division A

1. Calculation of Total Capital Employed (Investment)
The return on investment (ROI) is calculated on the total assets employed by the division.

- Fixed Assets: ₹ 5,00,000
- Current Assets (excluding Debtors): ₹ 3,00,000
- Debtors: ₹ 2,00,000
- Total Capital Employed: ₹ 5,00,000 + ₹ 3,00,000 + ₹ 2,00,000 = ₹ 10,00,000

2. Calculation of Required Return

- Target ROI: 28% on Capital Employed
- Required Return Amount: 28% of ₹ 10,00,000 = ₹ 2,80,000

3. Calculation of Total Cost

- Variable Cost: ₹ 10 per unit × 4,00,000 units = ₹ 40,00,000
- Annual Fixed Cost: ₹ 8,00,000
- Total Cost: ₹ 40,00,000 + ₹ 8,00,000 = ₹ 48,00,000

4. Calculation of Transfer Price

- Total Sales Revenue Required = Total Cost + Required Return
- Total Revenue = ₹ 48,00,000 + ₹ 2,80,000 = ₹ 50,80,000
- Transfer Price per Unit = Total Revenue / Total Units
- Transfer Price = ₹ 50,80,000 / 4,00,000 units = ₹ 12.70 per unit

Part (ii): Impact of External Sales on Transfer Price

In this scenario, Division A has a dual role: selling internally and externally. The problem states that Division A cannot increase output beyond 4,00,000 units, implying a capacity constraint.

1. Analysis of the External Sale

- Quantity sold externally: 20% of 4,00,000 = 80,000 units
- External Selling Price: ₹ 14 per unit
- Remaining capacity for internal transfer: 4,00,000 - 80,000 = 3,20,000 units

2. Calculation of Revised Transfer Price

Since the division still aims to achieve the same overall Return on Investment (ROI) of ₹ 2,80,000, the profit earned from external sales will subsidize or affect the price charged to internal divisions.

- Target Total Revenue: ₹ 50,80,000 (as calculated in Part i)
- Less: Revenue from External Sales:
  80,000 units × ₹ 14 = ₹ 11,20,000
- Revenue Required from Internal Sales:
  ₹ 50,80,000 - ₹ 11,20,000 = ₹ 39,60,000
- New Transfer Price per Unit:
- Revenue Required / Internal Units
  ₹ 39,60,000 / 3,20,000 units = ₹ 12.375 OR ₹ 12.38 per unit

3. Conclusion

- Effect: The transfer price charged to other divisions will decrease from ₹ 12.70 to ₹ 12.38 (approx).

4. (a):

Calculation of Contribution per Child:

Particulars	Amount (₹)
Revenue per trip per child	4,000
Less: Variable Costs	
- Train fare	1,700
- Meals	300
- Craft Materials	600
Total Variable Costs	2,600
Contribution per Child	1,400

1. Calculate "Average" Step Costs per Child

We convert the step costs into an approximate variable cost per child to use in the standard formula.

- Room Rent: ₹760 for 4 children = ₹190 per child.
- Transport: ₹1,200 for 6 children = ₹200 per child.
- Total Estimated Variable Cost (EVC):
- Pure Variable (Food, Fare, Craft): ₹ 2,600
- Approx. Room Cost: ₹ 190
- Approx. Transport Cost: ₹ 200
- Total EVC: ₹ 2,990

2. Calculate "Effective" Contribution

- Revenue per Child: ₹ 4,000
- Less: Total Approx. VC: ₹ 2,990
- Approx. Contribution: ₹ 1,010 per child.

3. Apply Standard BEP Formula

- Fixed Cost: ₹ 5,18,130
- Estimated BEP = Fixed Cost / Approx. Contribution
- The minimum number of children required to:
  Break-Even Point = ₹5,18,130 / ₹1,010 = 513
  The minimum number of children required to cross the Break-Even Point = 514

4. (b):

Part (I): Evaluation of the Proposal (Lid Based) (Cost per 1,000 Lids)

Objective: To determine the net cost of producing 1,000 lids in-house and compare it to the market purchase price.

1. Material Input:

- Lids required: 1,000
- Tins per lid: 1 / 5 = 0.2
- Total tins required: 1,000 x 0.2 = 200 tins

2. Calculation of Net Cost per 1,000 Lids:

Particulars	Calculation	Amount (₹)
A. Incremental Costs		
Opportunity Cost of Tins	200 tins x ₹8	1,600
Conversion Cost	1,000 lids x (₹ 50/100)	500
Gross Cost		2,100
B. Less: Recovery from Scrap		
Input Weight (Tins)	200 tins x 1 kg	200 kg
Less: Output Weight (Lids)	1,000 lids x 0.12 kg	(120 kg)
Scrap Weight (Off-cuts)		80 kg
Recovery Value	80 kg x ₹5	(400)
C. Net Cost per 1,000 Lids		1,700

3. Decision:

- Net Cost per Lid: ₹ 1,700 / 1,000 = ₹1.70
- Market Purchase Price: ₹2.00
- Conclusion: Since the cost to make a lid in-house (₹ 1.70) is lower than the cost to buy it (₹ 2.00), the proposal is financially viable and should be ACCEPTED.

Part (II): Statement of Estimated Monthly Savings

Objective: To quantify the total financial benefit considering the production constraint of 15,000 scrapped tins.

1. Production Volume:

- Maximum lids producible: 15,000 tins x 5 = 75,000 lids
- Balance lids to be purchased: 1,00,000 - 75,000 = 25,000 lids

2. Calculation of Savings:

Particulars	Calculation	Amount (₹)
A. Present Cost (Status Quo)		
Purchase of 1,00,000 Lids	1,00,000 x ₹2.00	2,00,000
Less: Revenue from Scrap Tins	15,000 x ₹8.00	(1,20,000)
Net Cost (Current)		80,000
B. Proposed Cost		
Purchase of 25,000 Lids	25,000 x ₹2.00	50,000
Cost of 75,000 Internal Lids	75,000 x ₹1.70	1,27,500
Gross Proposed Cost		1,77,500
Less: Scrap Tin Revenue	15,000 tins x ₹8.00	1,20,000
Net Cost (Proposed)		57,500
C. Net Monthly Savings	(A) - (B)	22,500

Recommendation:
The Company should accept the proposal to convert scrapped tins into lids, as it will generate a net monthly saving of ₹ 22,500.

Alternative: (Total Cost Based)
Working Note:
1. Production of Lids from Scrap:

- Available Scrapped Tins = 15,000 tins
- Lids per Tin = 5 lids
- Total Lids Produced = 15,000 x 5 = 75,000 lids

2. Calculation of Scrap (Off-cuts):

- Total Weight Input (Tins) = 15,000 tins x 1 kg = 15,000 kg
- Total Weight Output (Lids) = 75,000 lids x 0.120 kg = 9,000 kg
- Weight of Off-cuts = 15,000 - 9,000 = 6,000 kg

Part (I): Evaluation of the Proposal

Comparative Cost Statement (Monthly Basis)

Particulars	Option A: Status Quo (Buy All)	Option B: Proposal (Make + Buy Bal.)
A. Requirements		
Total Requirement of Lids	1,00,000	1,00,000
(-) Produced Internally	Nil	(75,000)
Balance to be Purchased	1,00,000	25,000
B. Cost Analysis (₹)		
Cost of Purchase (@ ₹2/lid)	2,00,000	50,000
Conversion Cost (@ ₹0.50/lid) (75,000 x 50/100)	Nil	37,500
(B) Total Direct Outflow	2,00,000	87,500
C. Revenue / Opportunity (₹)		
Sale of Scrapped Tins (@ ₹8/tin)	(1,20,000)	Nil
Sale of Off-cuts (@ ₹5/kg) (6,000 kg x 5)	Nil	(30,000)
(C) Total Recovery	(1,20,000)	(30,000)
D. Net Cost to Company (B - C)	80,000	57,500

Conclusion:
The Net Cost under the Proposal (₹ 57,500) is lower than the Status Quo (₹ 80,000). Therefore, the proposal is financially viable.

Part (II): Statement of Estimated Savings

Incremental Savings Analysis

Particulars	Computation	Amount (₹)
(A) Benefits (Inflows)		
Savings in Purchase Cost of Lids	75,000 lids x ₹ 2.00	1,50,000
Revenue from Sale of Off-cuts	6,000 kg x ₹ 5.00	30,000
Total Benefits		1,80,000
(B) Costs (Outflows)		
Loss of Revenue from Scrapped Tins	15,000 tins x ₹ 8.00	1,20,000
Conversion Costs	75,000 lids x ₹ 0.50	37,500
Total Costs		1,57,500
(C) Net Monthly Savings	(A) - (B)	22,500
(D) Annual Savings	₹ 22,500 × 12	2,70,000

Recommendation:
The company should ACCEPT the proposal as it results in a net monthly saving of ₹ 22,500 (Annual Savings: ₹ 2,70,000) while fulfilling 75% of the lid requirement internally.

5. (a):

1. Budgeted profit (for 2024–25)

Product	Budgeted units	SP/unit (₹)	Cost/unit (₹)	Profit/unit (₹)	Total Profit (₹)
X	25,000	40	28	12	3,00,000
Y	20,000	60	48	12	2,40,000
Z	15,000	80	64	16	2,40,000

- Total Budgeted Profit = 3,00,000 + 2,40,000 + 2,40,000 = ₹ 7,80,000

2. Actual profit (for 2024–25)

Product	Actual units	Actual SP (₹)	Actual Cost (₹)	Profit/unit (₹)	Total Profit (₹)
X	20,000	42	30	12	2,40,000
Y	22,000	56	50	6	1,32,000
Z	16,000	81	63	18	2,88,000

- Total Actual Profit = 2,40,000 + 1,32,000 + 2,88,000 = ₹ 6,60,000

Profit Variance Analysis Let:
- Standard profit/unit = Standard SP − Standard Cost
- Actual profit/unit = Actual SP − Actual Cost

Decompose total profit variance into:

1. Cost variance
2. Sales price variance
3. Sales volume variance

1. Cost variance (on actual quantity at standard SP)

Cost variance = [(Std cost−Actual cost)×Actual qty]

- X: (28 − 30) × 20,000 = (−2) × 20,000 = ₹ 40,000 (A)
- Y: (48 − 50) × 22,000 = (−2) × 22,000 = ₹ 44,000 (A)
- Z: (64 − 63) × 16,000 = 1 × 16,000 = ₹ 16,000 (F)

Cost variance:

Total = −40,000 − 44,000 + 16,000 = ₹ 68,000 (Adverse)

2. Sales price variance (on actual quantity)

Sales price variance = [(Actual SP−Std SP)×Actual qty]

- X: (42 − 40) × 20,000 = 2 × 20,000 = ₹ 40,000 (F)
- Y: (56 − 60) × 22,000 = (−4) × 22,000 = ₹ 88,000 (A)
- Z: (81 − 80) × 16,000 = 1 × 16,000 = ₹ 16,000 (F)

Net sales price variance:

Total = 40,000 − 88,000 + 16,000 = ₹ 32,000 (Adverse)

3. Sales volume variance (at standard profit per unit)

Sales volume variance = [(Actual qty−Budget qty)×Std profit/unit]

Standard profit per unit:

- X: 40 − 28 = 12
- Y: 60 − 48 = 12
- Z: 80 − 64 = 16

Now:

- X: (20,000 − 25,000) × 12 = (−5,000) × 12 = ₹ 60,000 (A)
- Y: (22,000 − 20,000) × 12 = 2,000 × 12 = ₹ 24,000 (F)
- Z: (16,000 − 15,000) × 16 = 1,000 × 16 = ₹ 16,000 (F)

Net sales volume variance:

Total = −60,000 + 24,000 + 16,000 = ₹ 20,000 (Adverse)

Reconciliation

Total profit variance:

- Budgeted profit − Actual profit
  = 7,80,000 − 6,60,000 = ₹ 1,20,000 (Adverse)

Sum of component variances:

- Cost variance (A) ₹ 68,000
- Sales price variance (A) ₹ 32,000
- Sales volume variance (A) ₹ 20,000

  Total = 68,000 + 32,000 + 20,000 = ₹ 1,20,000 (Adverse)

5. (b):

Material Variances for Chem Co Ltd.

Working Note 1: Standard Input for Actual Output

Since standard yield = 75%, the standard input required to produce 1,800 kg output is: Standard Input = Actual Output/Standard Yield %=1,800/0.75=2,400 kg

Standard Mix for 2,400 kg input:

Material	Standard Mix %	Quantity (kg)	Standard Price (₹/kg)	Standard Cost (₹)
A	80%	1,920	50	96,000
B	20%	480	100	48,000
Total		2,400		1,44,000

Working Note 2: Actual Cost Calculation

Material	Actual Qty (kg)	Actual Price (₹/kg)	Actual Cost (₹)
A	1,400	60	84,000
B	600	90	54,000
Total	2,000		1,38,000

(I) Material Price Variance Formula:

MPV = (Standard Price−Actual Price) × Actual Quantity

Material	(SP - AP)	× Actual Qty	Amount (₹)
A	(50 - 60) = -10	× 1,400	14,000 (A)
B	(100 - 90) = 10	× 600	6,000 (F)

Total Material Price Variance = ₹ 8,000 (Adverse)

Working Note 3: Revised Standard Quantities (for Mix Variance)

To calculate mix variance, restate the actual total input (2,000 kg) in standard proportions:

Material	Standard Mix %	Revised Standard Qty (kg) (for 2,000 kg input)
A	80%	1,600
B	20%	400
Total		2,000

(II) Material Mix Variance Formula:

MMV = (Revised Std Qty − Actual Qty) × Standard Price

Material	(Revised Std Qty - Actual Qty)	× Standard Price	Amount (₹)
A	(1,600 - 1,400) = 200	× 50	10,000 (F)
B	(400 - 600) = -200	× 100	20,000 (A)

Total Material Mix Variance = ₹ 10,000 (Adverse)

(III) Material Yield Variance

= (Standard Quantity for Actual Output – Actual Quantity in standard Proportion) × Standard Rate

Material A = (1920 – 1600) × 50 = 16000 (F)

Material B = (480 – 400) × 100 = 8000 (F)

₹ 24,000 (Favourable)

Calculation of Standard Quantities

Standard Input for Actual Output (1,800 kg):

Standard Input=1,800/0.75=2,400 kg

Standard Quantities (SQ):

- Material A: 2,400 × 80% = 1,920 kg
- Material B: 2,400 × 20% = 480 kg

Revised Standard Quantities (RSQ) for Actual Input (2,000 kg):

- Material A: 2,000 × 80% = 1,600 kg
- Material B: 2,000 × 20% = 400 kg

Alternative:

Material Yield Variance

Step 1:

Calculate Standard Output for Actual Input

Standard Output=Actual Total Input × Standard Yield %=2,000×0.75 = 1,500 kg

Step 2:

Calculate Standard Cost per kg of Output

Std Cost per kg =Total Std Cost for Actual Output/Actual Output

=1,44,000/1,800=₹80 per kg

Step 3:

Calculate Yield Variance Formula:

Yield Variance = (Actual Output−Std Output for Actual Input) × Std Cost per kg

= (1,800−1,500) × 80 = 300×80 = ₹24,000

Material Yield Variance = ₹ 24,000 (Favourable)

Alternative Presentation:

Working Note 1:

Variance Analysis -

Material	(I) SP × SQ	(II) SP × RSQ	(III) SP × AQ	(IV) AP × AQ
A	50 × 1,920 = 96,000	50 × 1,600 = 80,000	50 × 1,400 = 70,000	60 × 1,400 = 84,000
B	100 × 480 = 48,000	100 × 400 = 40,000	100 × 600 = 60,000	90 × 600 = 54,000
Total	1,44,000	1,20,000	1,30,000	1,38,000

Where:

- SP = Standard Price per kg
- SQ = Standard Quantity for Actual Production
- RSQ = Revised Standard Quantity (for actual total input)
- AQ = Actual Quantity used
- AP = Actual Price per kg

Calculation of Variances:

Variance Type	Formula	Material A (₹)	Material B (₹)	Total (₹)
Material Yield Variance	(I) − (II)	96,000 − 80,000 = 16,000 (F)	48,000 − 40,000 = 8,000 (F)	24,000 (F)
Material Mix Variance	(II) − (III)	80,000 − 70,000 = 10,000 (F)	40,000 − 60,000 = 20,000 (A)	10,000 (A)
Material Price Variance	(III) − (IV)	70,000 − 84,000 = 14,000 (A)	60,000 − 54,000 = 6,000 (F)	8,000 (A)

6. (a):

Flexible Budget at 60% and 80% Capacity
(All figures in ₹ Lakhs, except per unit data)

Sl.	Particulars	50% Capacity	60% Capacity	80% Capacity
1	Production (Units)	5,00,000	6,00,000	8,00,000
2	Sales Revenue (Units × SP)	5,000	5,880	7,600
3	Variable Costs:			
	Material Cost	2,500	3,060	4,200
	Labour Cost (₹150/unit)	750	900	1,200
	Variable Factory OH (₹90/unit)	450	540	720
	Variable Admin OH (₹50/unit)	250	300	400
4	Total Variable Cost	3,950	4,800	6,520
5	Contribution (2 – 4)	1,050	1,080	1,080
6	Fixed Costs:			
	Fixed Factory OH	300	300	300
	Fixed Admin OH	250	250	250
7	Total Fixed Cost	550	550	550
8	Net Profit (5 – 7)	500	530	530

Comments:
Both capacity levels yield the same net profit of ₹530 Lakhs. From a pure profitability perspective, there is no financial benefit to increase capacity from 60% to 80%. Hence the company should operate at 60% capacity.

Working Note 1:
Determination of Production Volumes
Full Capacity Calculation:
100% Capacity = 5,00,000 / 50% = 10,00,000 units
Production at Required Levels:

- At 60% Capacity: 10,00,000 × 0.60 = 6,00,000 units
- At 80% Capacity: 10,00,000 × 0.80 = 8,00,000 units

Revised Costs and Prices at Different Capacities

Particulars	50% Capacity	60% Capacity	80% Capacity
Units Produced	5,00,000	6,00,000	8,00,000
Material Cost/Unit	₹500	₹510 (500 + 2%)	₹525 (500 + 5%)
Selling Price/Unit	₹1,000	₹980 (1000 - 2%)	₹950 (1000 - 5%)

Alternative Solution

Flexible Budget at Different Capacity Levels

(All figures in ₹ Lakhs except per unit figures)

Sl.	Particulars	50% Capacity	60% Capacity	80% Capacity
1	Production (units)	5,00,000	6,00,000	8,00,000
2	Material Cost			
	Cost per unit (₹)	500	500+10 = 510	500+25 = 525
	Total Cost (₹ Lakhs)	2,500	3,060	4,200
3	Labour Cost			
	Cost per unit (₹)	150	150	150
	Total Cost (₹ Lakhs)	750	900	1,200
4	Variable Overheads			
	Factory @ ₹90/unit	450	540	720
	Administration @ ₹50/unit	250	300	400
	Sub-total	700	840	1,120
5	Total Variable Cost (2+3+4)	3,950	4,800	6,520
6	Fixed Overheads			
	Factory	300	300	300
	Administration	250	250	250
	Sub-total	550	550	550
7	Total Cost of Production (5+6)	4,500	5,350	7,070
8	Selling Price per unit (₹)	1,000	980	950
9	Total Sales Revenue (₹ Lakhs)	5,000	5,880	7,600
10	Profit (9 - 7) (₹ Lakhs)	500	530	530

Comments:

Both capacity levels yield the same net profit of ₹530 Lakhs. From a pure profitability perspective, there is no financial benefit to increase capacity from 60% to 80%. Hence the company should operate at 60% capacity.

Working Note 1:

Determination of Production Volumes

Full Capacity Calculation:

100% Capacity = 5,00,000 / 50% = 10,00,000 units

Production at Required Levels:

- At 60% Capacity: 10,00,000 × 0.60 = 6,00,000 units
- At 80% Capacity: 10,00,000 × 0.80 = 8,00,000 units

6. (b):

(i) Schedule of Cash Collections Expected (April, May, June 2025)

(₹ in Lakhs)

Source of Collection	April 2025	May 2025	June 2025
From February Sales (₹120)			
2nd month credit (20%)	24	-	-
From March Sales (₹160)			
1st month credit (55%)	88	-	-
2nd month credit (20%)	-	32	-
From April Sales (₹200)			
Cash sales (25%)	50	-	-
1st month credit (55%)	-	110	-
2nd month credit (20%)	-	-	40
From May Sales (₹200)			
Cash sales (25%)	-	50	-
1st month credit (55%)	-	-	110
From June Sales (₹200)			
Cash sales (25%)	-	-	50
Total Cash Collections	162	192	200

(ii) Additional Collections if 1-Month Credit Enforced Strictly

(₹ in Lakhs)

Month	1-Month Delay (New)	2-Month Delay (Old)	Additional Collection (Net)
April	32 (March Sale)	24 (February Sale)	(32 - 24) = 8
May	40 (April Sale)	32 (March Sale)	(40 - 32) = 8
June	40 (May Sale)	40 (April Sale)	(40 - 40) = 0

Alternative:

Additional Collections if 1-Month Credit Enforced Strictly

March Sales (₹160L) - Made before April

- Original policy applies: 55% in April + 20% in May
- But: If applying the new policy to March sales collection happening in April/May, then:
- The 20% scheduled for May (₹32L) is brought forward to April
- Additional collection in April: ₹32L

April Sales (₹200L) - Made from April

- Old policy: 55% in May (₹110L) + 20% in June (₹40L)
- New strict policy: 75% in May (₹150L) + 0% in June
- The 20% (₹40L) that would have been collected in June is brought forward to May
- Additional collection in May: ₹40L

May Sales (₹200L) - Made from April

- Old policy: 55% in June (₹110L) + 20% in July (₹40L)
- New strict policy: 75% in June (₹150L) + 0% in July
- The 20% (₹40L) that would have been collected in July is brought forward to June
- Additional collection in June: ₹40L

7. (a):

(i) DuPont Analysis - Return on Equity (ROE)

Three-Step DuPont Formula

ROE=Net Profit Margin × Asset Turnover × Equity Multiplier

Step 1:

Net Profit Margin

Net Profit Margin=PAT / Sales=70,000/12,00,000=0.0583=5.83%

Step 2:

Asset Turnover Ratio

Asset Turnover=Sales / Total Assets=12,00,000/8,00,000=1.50 times

Step 3:

Equity Multiplier (Financial Leverage)

Equity Multiplier = Total Assets/Shareholder's Equity

= 8,00,000/4,00,000 = 2.00 times

ROE Calculation

ROE=5.83%×1.50×2.00 = 17.50%

Analysis:

Shareholders earn 17.50% return on their investment

Alternative Calculation:

ROE=PAT/Shareholder's Equity=70,000/4,00,000 = 17.50%

Analysis:

Shareholders earn 17.50% return on their investment

Working Notes

WN 1: Calculation of Net Profit After Tax (PAT)

Particulars	Amount (₹)
Net Operating Income (before tax)	1,20,000
Less: Tax @ 25%	(30,000)
Net Operating Income (after tax) = NOPAT	90,000
Less: Interest Expenses (after tax)	(20,000)
Net Profit After Tax (PAT)	70,000

Economic Value Added (EVA)

EVA = NOPAT − (Capital Employed × WACC)

Calculation

Particulars	Amount (₹)
NOPAT (Net Operating Profit After Tax)	90,000
Less: Capital Charge (₹6,00,000 × 10%)	(60,000)
Economic Value Added (EVA)	30,000

Interpretation

EVA = ₹30,000 (Positive)

Sagar Limited is creating shareholder value. The company generates ₹30,000 in excess returns over and above the minimum required return (WACC of 10%). This indicates efficient utilization of capital and value creation for shareholders.

(ii) Relationship Between DuPont ROE and EVA

- ROE of 17.50% exceeds WACC of 10% by 7.50 percentage points.
- This spread of 7.5% indicates positive value creation, which is confirmed by positive EVA ₹30,000 in absolute value after meeting all capital costs

7. (b):

CS LLP - Sailing Boat Contract Analysis
Profit/Contribution Analysis

Particulars	Amount (₹)
Contract Price (Revenue)	1,10,000
Less: Relevant Variable Costs	(1,02,120)
Contribution to Profit	7,880
Less: Fixed Overheads (Allocated) (9,360 hrs × ₹ 0.50)	4,680
Net Profit **Note:**The question asks "Calculate the profit / loss", and usually, that means the bottom-line figure. Showing both Contribution (₹7,880) and Net Profit (₹3,200) is the ultimate answer. Contribution (useful for the "short of work" decision/Marginal costing) and the Net Profit (satisfying the literal "Calculate Profit"/Absorption costing).	3,200

Relevant (Variable) Costs for 90 Boats

Cost Element	Calculation	Amount (₹)
Direct Materials	90 boats × ₹666.67	60,000
Direct Labour	9,360 hours × ₹4	37,440
Variable Overhead	9,360 hours × ₹0.50	4,680
Total Relevant Cost		1,02,120

Working Notes

WN 1: Calculation of Labour Hours (Initial 30 Boats)

Particulars	Calculation	Amount (₹)
Variable Overhead	Given	3,000
Rate per labour hour	Given	0.50
Total Labour Hours (30 boats)	₹3,000 ÷ ₹0.50	6,000 hours

Average time per boat (initial 30 boats) = 6,000 ÷ 30 = 200 hours per boat

WN 2: Learning Curve Calculation (80% Rate)

Concept: With an 80% learning curve, when cumulative output doubles, the average time per unit becomes 80% of the previous average.

Cumulative Average Time Calculation:

Cumulative Units	Calculation	Average Time per Unit (Hours)
30 boats	Given (base)	200.00
60 boats	200 × 0.80	160.00
120 boats	160 × 0.80	128.00

WN 3: Total Labour Hours Calculation

Production Level	Units	Average Hours/Unit	Total Hours
First 30 boats	30	200	6,000
First 120 boats (30 + 90)	120	128	15,360
Incremental (90 boats)	90	-	9,360

WN 4: Cost per Labour Hour

Labour cost per hour = Direct Labour ÷ Total hours = ₹24,000 ÷ 6,000 hours = ₹4 per hour WN 5: Direct Material per Boat

Material per boat = ₹20,000 ÷ 30 boats = ₹666.67 per boat

8. (a):

Swadist Ltd. - Strategic Decision Analysis

Given Pay-off Matrix (₹)

Strategy	N1 (High Increase)	N2 (No Change)	N3 (Decrease)
S1 (Revolutionary product, high price)	7,00,000	3,00,000	1,50,000
S2 (Moderate change, small price increase)	5,00,000	4,50,000	0
S3 (Small price change)	3,00,000	3,00,000	2,00,000

(i) Maximin Criterion

Strategy	Minimum Payoff (₹)
S1	1,50,000 (N3)
S2	0 (N3)
S3	2,00,000 (N3)

Decision

Select Strategy S3 – It guarantees a minimum profit of ₹2,00,000 regardless of market conditions.

(ii) Maximax Criterion

Strategy	Maximum Payoff (₹)
S1	7,00,000 (N1)
S2	5,00,000 (N1)
S3	3,00,000 (N1 or N2)

Decision

Select Strategy S1 – It offers the highest potential profit of ₹7,00,000 if market responds favorably.

(iii) Laplace Criterion

Probability for each state = 1/3 (since 3 states of nature)

Strategy	N1	N2	N3	Total Payoff (₹)	Average Payoff (₹)
S1	7,00,000	3,00,000	1,50,000	11,50,000	3,83,333
S2	5,00,000	4,50,000	0	9,50,000	3,16,667
S3	3,00,000	3,00,000	2,00,000	8,00,000	2,66,667

Calculations:

- S1: (7,00,000 + 3,00,000 + 1,50,000) ÷ 3 = ₹3,83,333
- S2: (5,00,000 + 4,50,000 + 0) ÷ 3 = ₹3,16,667
- S3: (3,00,000 + 3,00,000 + 2,00,000) ÷ 3 = ₹2,66,667

Decision

Select Strategy S1 – It provides the highest average expected value of ₹3,83,333.

(iv) Hurwicz Criterion [α = 0.4]

Coefficient of optimism (α) = 0.4

Coefficient of pessimism (1 - α) = 0.6

Strategy	Max Payoff (₹)	Min Payoff (₹)	Weighted Payoff (₹)
S1	7,00,000	1,50,000	(0.4 × 7,00,000) + (0.6 × 1,50,000) = 2,80,000 + 90,000 = 3,70,000
S2	5,00,000	0	(0.4 × 5,00,000) + (0.6 × 0) = 2,00,000 + 0 = 2,00,000
S3	3,00,000	2,00,000	(0.4 × 3,00,000) + (0.6 × 2,00,000) = 1,20,000 + 1,20,000 =2,40,000

Decision

Select Strategy S1 – It provides the highest weighted value of ₹3,70,000 under the realism criterion.

8. (b):

Characteristics of Responsibility Reporting:

1. Reports should fit the organization chart, that is, the report should be addressed to the individual responsible for the items covered by it, who, in turn, will be able to control those costs under his jurisdiction. Managers must be educated to use the results of the reporting system.
2. Report should be prompt and timely. Prompt issuance of a report requires that cost records be organized so that information is available when it is needed.
3. Reports should be issued with regularity. Promptness and regularity are closely tied up with the mechanical aids used to assemble and issue reports.
4. Reports should be easy to understand. Often, they contain accounting terminology that managers with little or no accounting training find difficult to understand, and vital information may be incorrectly communicated. Therefore, accounting terms should be explained or modified to fit the user. Top management should have some knowledge of the kind of items chargeable to an account as well as the methods used to compute overhead rates, make cost allocations and analyze variances.
5. Reports should convey sufficient but not excessive details. The amount and nature of the details depend largely on the management level receiving the report. Reports to management should neither be flooded with immaterial facts nor so condensed that management lacks vital information essential to carrying out its responsibilities.
6. Reports should give comparative figures, i.e., a comparison of actual with budgeted figures or of predetermined standards with actual results and the isolation of variances.
7. Reports should be analytical. Analysis of underlying papers, such as time tickets, scraps tickets, work orders, and materials requisitions, provide reasons for poor performance which might have been due to power failure, machine breakdown, an inefficient operator, poor quality of materials, or many other similar factors.
8. Reports should be stated in physical units as well as in terms of money since monetary information may give a foreman not trained in the language of the accountant a certain amount of difficulty.
9. Reports may tend to highlight departmental efficiencies and inefficiencies, results, achieved future goals or targets.