



## Guideline Answers for Cost Accounting and Financial Management

Exam Date: 20.03.2015

**Solution to Question 1(a):**

**[5 Marks]**

### Adjusted Profit and Loss Account

Particulars	₹	M	Particulars	₹	M
To Depreciation	12,00,000	½	By balance in P&L at year beginning	24,00,000	½
To Loss on Sale of Investments	3,00,000	½	By Gain on Sale of Fixed Assets	6,00,000	½
To Provision for Taxation	6,00,000	½	By Funds from Operations (bal. fig.)	<b>14,00,000</b>	½
To Transfer to Asset Replacement Reserve	2,00,000	½			
To Proposed Dividend	7,00,000	½			
To balance in P&L A/c at year-end	14,00,000	½			
<b>Total</b>	<b>44,00,000</b>		<b>Total</b>	<b>44,00,000</b>	

**Note:** Securities Premium collected will not affect the computation of Funds from Operations.

(½ Mark)

**Solution to Question 1(b):**

**[5 Marks]**

Let the EBIT at the Indifference Point level be ₹E (amounts in ₹)

Particulars	Alternative 1	Alternative 2
<b>Description</b>	ESC = ₹ 6 Lakhs, and Debt = ₹ 4 Lakhs	ESC = ₹ 4 Lakhs, Debt = ₹ 4 Lakhs and PSC = ₹ 2 Lakhs
EBIT	E	E
<b>Less:</b> Interest at 12% of ₹ 4,00,000 (½ Mark)	48,000	48,000
EBT (½ Mark)	E – 48,000	E – 48,000
<b>Less:</b> Tax at 35% (½ Mark)	0.35E – 16,800	0.35E – 16,800
EAT (½ Mark)	0.65E – 31,200	0.65E – 31,200
<b>Less:</b> Preference Dividend (14% of ₹ 2,00,000) (½ Mark)	Nil	28,000
Residual Earnings for Equity Shareholders (½ Mark)	0.65E – 31,200	0.65E – 59,200
Number of Equity Shares	60,000 Shares	40,000 Shares
EPS = $\frac{\text{Residual Earnings}}{\text{No. of Equity Shares}}$ (½ Mark)	$\frac{0.65E - 31,200}{60,000 \text{ Shares}}$	$\frac{0.65E - 59,200}{40,000 \text{ Shares}}$

For indifference between the above alternatives, EPS should be equal. So,  $\frac{0.65E - 31,200}{60,000} = \frac{0.65E - 59,200}{40,000}$  (½ Mark)

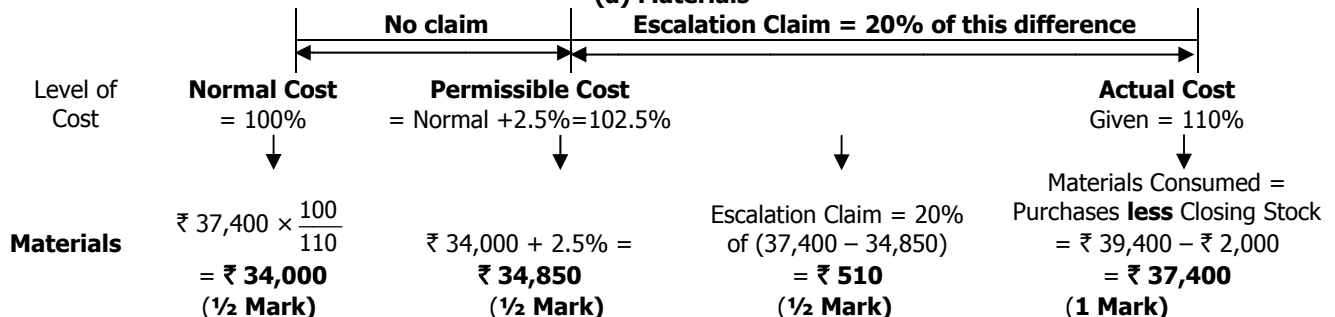
On cross multiplication and simplification, 1.30 E – 62,400 = 1.95 E – 1,77,600. So, 0.65E = 1,15,200. (½ Mark)

So, E =  $\frac{1,15,200}{0.65} = \mathbf{1,77,231}$  (½ Mark) So, for same EPS, required **EBIT = ₹ 1,77,231**. **EPS = ₹ 1.40**

**Solution to Question 1(c):**

**[5 Marks]**

### (a) Materials





	(b) Labour		
	No claim	Escalation Claim = 40% of this difference	
Level of Cost	<b>Normal Cost</b> = 100%	<b>Permissible Cost</b> = Normal + 2.5% = 102.5%	<b>Actual Cost</b> Given = 115%
<b>Labour</b>	$\text{₹ } 64,975 \times \frac{100}{115}$ <b>= ₹ 56,500</b> (½ Mark)	$\text{₹ } 56,500 + 2.5\% =$ <b>₹ 57,912.50</b> (½ Mark)	Escalation Claim = 40% of (64,975 – 57,912.50) <b>= ₹ 2,825</b> (½ Mark)
			Wages incurred = Paid + P'ble = ₹ 63,250 + ₹ 1,725 <b>= ₹ 64,975</b> (1 Mark)

**Solution to Question 1(d):** [5 Marks]

**Note:** In this question, even if the method of Inventory Valuation is not specified, WAC Method will be applied, since Cost break-up of Opening WIP is given, and degree of completion of Opening WIP is not given.

**Note:** The question relates to preparation of accounts for Process 3, i.e. a subsequent process. Hence, Materials are categorized into two items – (1) Material A representing Process II Material input into Process III, and (2) Material B representing Consumable Materials directly input into Process III. (½ Mark)

**Statement of Equivalent Production**

Item	Input	Item	Output	Material A		Material B		Labour		Overhead	
				%	E.U.	%	E.U.	%	E.U.	%	E.U.
Opg WIP	2,000	Tfr to Pr-4	17,000	100%	17,000	100%	17,000	100%	17,000	100%	17,000
Tfr from Process2	20,000	Nml Loss	1,800	—	—	—	—	—	—	—	—
		Abn. Gain	(800)	100%	(800)	100%	(800)	100%	(800)	100%	(800)
		Closing WIP	4,000	100%	4,000	80%	3,200	60%	2,400	40%	1,600
<b>Total</b>	<b>22,000</b>	<b>Total</b>	<b>22,000</b>		<b>20,200</b>		<b>19,400</b>		<b>18,600</b>		<b>17,800</b>
					<b>1 Mark</b>		<b>1 Mark</b>		<b>1 Mark</b>		<b>1 Mark</b>

**Note: Normal Loss** = 10% of Expected Production = 10% of [Opening WIP + Fresh Units – Closing WIP]  
 = 10% of (2,000 + 20,000 – 4,000) = **1,800 units.** (½ Mark)

**Abnormal Gain** = Total Scrapped Units **Less** Normal Loss = 1,000 – 1,800 = **800 units.** (indicated as –ve)

**Solution to Question 2(a):** [8 Marks]

**Profitability Statement**

Particulars	Company A	Company B
EBIT at 30% on Assets Employed ₹ 10,000	3,000	3,000
<b>Less:</b> Interest at 12% on Debt Funds	720	120
EBT	2,280	2,880
<b>Less:</b> Tax at 40%	912	1,152
<b>EAT</b> <span style="float: right;"><b>1 Mark</b></span>	<b>1,368</b>	<b>1,728</b>
ROCE (pre-tax) = $\frac{\text{EBIT}}{\text{Capital Employed}}$ <span style="float: right;"><b>1 Mark</b></span>	$\frac{\text{₹ } 3,000}{\text{₹ } 10,000} = \text{30.00\%}$	$\frac{\text{₹ } 3,000}{\text{₹ } 10,000} = \text{30.00\%}$
ROCE (post-tax) = $\frac{\text{EAT} + \text{Interest}}{\text{Equity} + \text{Debt}}$ <span style="float: right;"><b>1 Mark</b></span>	$\frac{\text{₹ } 1,368 + \text{₹ } 720}{\text{₹ } 10,000} = \text{20.88\%}$	$\frac{\text{₹ } 1,728 + \text{₹ } 120}{\text{₹ } 10,000} = \text{18.48\%}$
ROE (pre-tax) = $\frac{\text{EBT}}{\text{Equity}}$ <span style="float: right;"><b>1 Mark</b></span>	$\frac{\text{₹ } 2,280}{\text{₹ } 4,000} = \text{57.00\%}$	$\frac{\text{₹ } 2,880}{\text{₹ } 9,000} = \text{32.00\%}$



Particulars	Company A	Company B
ROE (post-tax) = $\frac{EAT}{Equity}$ <b>1 Mark</b>	$\frac{₹ 1,368}{₹ 4,000} = 34.20\%$	$\frac{₹ 1,728}{₹ 9,000} = 19.20\%$
<b>Relationship between ROCE (i.e. ROA) and ROE</b>		
(a) <b>Pre-Tax: ROE =</b> <b>1 Mark</b> $ROCE + \frac{Debt}{Equity} \times (ROCE - Interest Rate)$	$30\% + \frac{6}{4} (30\% - 12\%) = 57.00\%$	$30\% + \frac{1}{9} (30\% - 12\%) = 32.00\%$
(b) <b>Post-Tax: ROE =</b> <b>1 Mark</b> $ROCE (1-T) + \frac{Debt}{Equity} \times [ROCE \times (1-T) - Interest \times (1-T)]$	See Note below = <b>34.20%</b>	See Note below = <b>19.20%</b>

**Note:**  $(1 - T) = 100\% - \text{Tax Rate}$ , where  $T = \text{Tax Rate}$ , i.e. 40% in this case. Hence,  $(1 - T) = 0.6$  or **60%**.

**For Company A:**  $30\% \times (100\% - 40\%) + \frac{6}{4} [30\% \times (100\% - 40\%) - 12\% \times (100\% - 40\%)] = 34.20\%$  [**½ Mark**]

**For Company B:**  $30\% \times (100\% - 40\%) + \frac{1}{9} [30\% \times (100\% - 40\%) - 12\% \times (100\% - 40\%)] = 19.20\%$  [**½ Mark**]

**Observation:** Both Companies have the same pre-tax ROCE 30%. However, Company A is able to maximize the gains to Equity Shareholders (i.e. higher ROE), on account of use of low-cost Debt Funds at 12% (ROCE > Interest Rate). Company B does not use much low-cost Debt, and is not able to maximize the gains to Equity Shareholders.

**Solution to Question 2(b):**

[**8 Marks**]

**Operating Cost Statement for alternatives modes of conveyance (amounts in ₹)**

Item	New Nano Car	Old Innova Car	Taxi
<b>Fixed Costs per annum</b>			
Depreciation <b>1 Mark</b>	$\frac{₹ 1,35,000 - ₹ 25,000}{5 \text{ years}} = 22,000$	$\frac{₹ 1,60,000 - ₹ 40,000}{5 \text{ years}} = 24,000$	
Repairs and Servicing	12,000	18,000	
Taxes and Insurance	3,200	2,400	
<b>Total (A) 1 Mark</b>	<b>37,200</b>	<b>44,400</b>	
<b>Variable Costs per annum:</b>			
Petrol / Diesel per km <b>1 Mark</b>	$\frac{₹ 68}{20 \text{ Kms}} = ₹ 3.40$	$\frac{₹ 42}{15 \text{ Kms}} = ₹ 2.80$	Given ₹ 10.00
For 10,800 Kms( <b>B</b> )	$10,800 \text{ km} \times ₹ 3.40 = 36,720$	$10,800 \text{ km} \times ₹ 2.80 = 30,240$	$10,800 \text{ km} \times ₹ 10 = 1,08,000$
For 18,000 km ( <b>C</b> )	$18,000 \text{ km} \times ₹ 3.40 = 61,200$	$18,000 \text{ km} \times ₹ 2.80 = 50,400$	$18,000 \text{ km} \times ₹ 10 = 1,80,000$
<b>Total Cost for 10,800 km (A+B) ½ Mark</b>	<b>73,920</b>	<b>74,640</b>	<b>1,08,000</b>
<b>Total Cost for 18,000 km (A+C) ½ Mark</b>	<b>98,400</b>	<b>94,800</b>	<b>1,80,000</b>

**Conclusion:**

- For the present official travel of 10,800 km pa, the Total Cost for the New Nano Car Option is most preferable as the Least Cost Option. [**½ Mark**]
- When official travel increases to 18,000 km pa, the Old Innova Car Option is most preferable as the Least Cost Option. [**½ Mark**]

**BEP** of the two Options represent Cost Break Even Point, i.e. **Indifference Point**, which is computed as under –

$$\text{Indifference Point} = \frac{\text{Difference in Fixed Costs between Innova and Nano}}{\text{Difference in Variable Cost per Km of Innova and Nano}} = \frac{₹ 44,400 - ₹ 37,200}{₹ 3.40 - ₹ 2.80} = 12,000 \text{ km} \quad \mathbf{1 \text{ Mark}}$$

At 12,000 Km per year, the Costs of operation of the two cars will break-even (i.e. the same), as shown below:

$$\text{Total Cost} = \text{Fixed Cost} + \text{Variable Cost at 12,000 km}$$

**For Nano Car:** Total Cost = 37,200 + (12,000 km × ₹ 3.40) = 37,200 + 40,800 = **₹ 78,000**

**For Innova Car:** Total Cost = 44,400 + (12,000 km × ₹ 2.80) = 44,400 + 33,600 = **₹ 78,000**



**Solution to Question 3(a):**

[4 Marks]

**1. Maturity Value of Investment of 12,00,000 at 12%, compounded monthly, for 5 years**

Maturity Value  $A = P(1 + R)^{NK}$ , where,  $P = 12,00,000$ ,  $R = \frac{12}{12} = 1\%$ ,  $NK = 5 \times 12 = 60$ . **1 Mark**

So, Maturity Value  $A = 12,00,000(1 + 1\%)^{60} = 12,00,000 \times 1.81669670 = \text{₹ } 21,80,036$ , **1 Mark**

**2. Present Value of above Maturity Value, for investing in Savings Institutions:**

Present Value =  $\frac{A_n}{(1 + R)^n}$  Here,  $A = 21,80,036$ ,  $R = \frac{8\%}{4} = 0.02$  and  $N = 5 \times 4 = 20$ .

**1 Mark**

So, Present Value =  $21,80,036 \times \left(\frac{1}{1.02}\right)^{20} = 21,80,036 \times 0.67297133 = \text{₹ } 14,67,102$  **[1/2 Mark]**

So, X should sell his property for atleast **₹ 14,67,102** now. **[1/2 Mark]**

**Solution to Question 3(b):**

[12 Marks]

**1. Computation of Sales Variances (Margin Approach)**

**2 Marks**

Col. (1): BQ × BM	Col. (2): AQ × BM	Col. (3): AQ × AM
80,000 units × ₹ 0.5 pu = <b>₹ 40,000</b>	72,000 units × ₹ 0.5 pu = <b>₹ 36,000</b>	72,000 units × ₹ 0.39 pu = <b>₹ 28,000</b>

**Sales Margin Volume Variance**  
= ₹ 40,000 – ₹ 36,000 = ₹ 4,000 A

**Sales Margin Price Variance**  
= ₹ 36,000 – ₹ 28,000 = ₹ 8,000 A

**1 Mark**

**3 Marks**

**Total Sales Margin Variance = ₹ 40,000 – ₹ 28,000 = ₹ 12,000 A**

**Note:** SMPV = Sales Margin Price Variance is the same as Sales Price Variance (SPV).

- Budgeted Margin = Budgeted Price – Standard Cost = 4.00 – 3.50 = **₹ 0.50 per unit. [1/2 Mark]**
- Actual Margin = Actual Price – Standard Cost =  $\left(\frac{\text{₹ } 2,80,000}{72,000 \text{ units}} - 3.50\right) = \text{₹ } 0.39 \text{ per unit. [1/2 Mark]}$

**2. Computation of Material Cost Variances**

**2 Marks**

Col. (1): Std Cost = SQ × SP	Col. (2): AQ × SP	Col. (3): Actual Cost = AQ × AP
(72,000 × 1 kg) × ₹ 1 = <b>₹ 72,000</b>	78,400 kg × ₹ 1 = <b>₹ 78,400</b>	(Given) <b>₹ 73,600</b>

**Material Usage Variance**  
= ₹ 72,000 – ₹ 78,400 = ₹ 6,400 A

**Material Price Variance**  
= ₹ 78,400 – ₹ 73,600 = ₹ 4,800 F

**Total Material Cost Variance = ₹ 72,000 – ₹ 73,600 = ₹ 1,600 A**

**3. Computation of Labour Cost Variances**

**2 Marks**

Col. (1): Std Cost = SH × SR	Col. (2): AH × SR	Col. (3): Actual Cost = AH × AR
(72,000 × 1 hour) × ₹ 1.5 ph = <b>₹ 1,08,000</b>	70,400 hrs × ₹ 1.50 = <b>₹ 1,05,600</b>	(Given) <b>₹ 1,04,800</b>

**Labour Efficiency Variance**  
= ₹ 1,08,000 – ₹ 1,05,600 = ₹ 2,400 F

**Labour Rate Variance**  
= ₹ 1,05,600 – ₹ 1,04,800 = ₹ 800 F

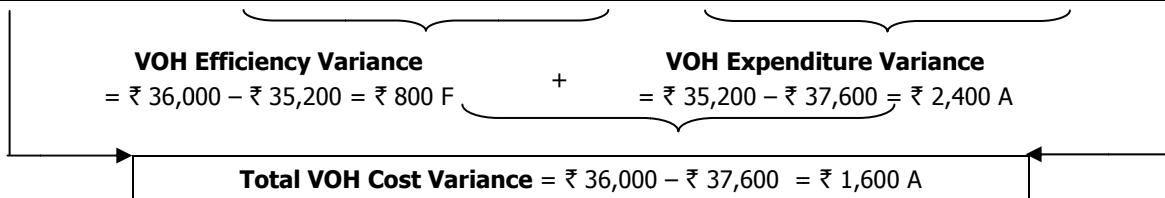
**Total Labour Cost Variance = ₹ 1,08,000 – ₹ 1,04,800 = ₹ 3,200 F**



**4. Computation of VOH Cost Variances**

**2 Marks**

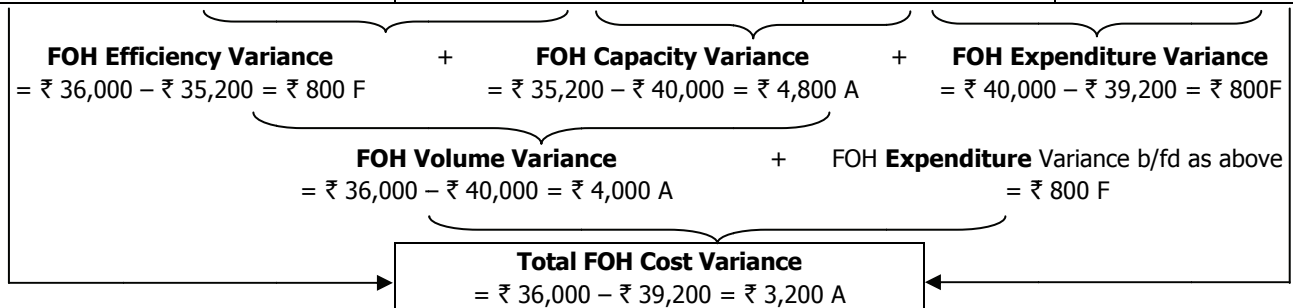
<b>Col. (1): Std Cost = SH × SR</b>	<b>Col. (2): AH × SR</b>	<b>Col. (3): Actual Cost = AVOH</b>
$(72,000 \times 1 \text{ hour}) \times ₹ 0.5 \text{ ph} = ₹ 36,000$	$70,400 \text{ hrs} \times ₹ 0.50 = ₹ 35,200$	(Given) ₹ 37,600



**5. Computation of FOH Cost Variances**

**3 Marks**

<b>Col. (1): Std Cost = AO × SR</b>	<b>Col.(2): AH × SR</b>	<b>Col.(3): BFOH</b>	<b>Col.(4): AFOH</b>
$72,000 \text{ units} \times ₹ 0.5 \text{ p.u.} = ₹ 36,000$	$70,400 \text{ hrs} \times ₹ 0.5 \text{ ph} = ₹ 35,200$	(Given) ₹ 40,000	(Given) ₹ 39,200



**Solution to Question 4(a):**

**[8 Marks]**

**1. Trading and P&L Account for the year (to compute Depreciation and Net Profit)**

**2 Marks**

Particulars	₹	Particulars	₹
To Materials Consumed	22,50,000	By Sales	90,00,000
To Wages	18,00,000		
To Manufacturing Exps: (Cash Expenses ₹ 2,00,000 × 12)	24,00,000		
To Depreciation (balancing figure)	<b>3,00,000</b>		
To Gross Profit (25% on Sales)	22,50,000		
<b>Total</b>	<b>90,00,000</b>	<b>Total</b>	<b>90,00,000</b>
To Administration Expenses	6,00,000	By Gross Profit b/d	22,50,000
To Sales Promotion Expenses	12,00,000		
To Net Profit (balancing figure)	<b>4,50,000</b>		
<b>Total</b>	<b>22,50,000</b>	<b>Total</b>	<b>22,50,000</b>

**2. Statement of Working Capital Requirements (Cash Cost Approach)**

Particulars	Computation	₹	Marks
<b>A. Current Assets</b>			
Raw Material Stock (based on RM Consumed)	$₹ 22,50,000 \times \frac{1}{12}$	1,87,500	1/2
Finished Goods Stock (based on Cash COP)	$(₹ 22,50,000 + ₹ 18,00,000 + ₹ 24,00,000) \times \frac{2}{12}$	10,75,000	1/2
Debtors (based on Sales Less Profit & Deprn)	$(₹ 90,00,000 - ₹ 4,50,000 - ₹ 3,00,000) \times \frac{3}{12}$	20,62,500	1/2
Prepaid Sales Promotion Expenses (given)	$\frac{₹ 12,00,000}{4}$	3,00,000	1/2
Cash and Bank balances (given)		2,50,000	1/2
<b>Total</b>		<b>38,75,000</b>	1/2



Particulars	Computation	₹	Marks
<b>B. Current Liabilities</b>			
Creditors (based on RM Consumed)	$₹ 22,50,000 \times \frac{1.5}{12}$	2,81,250	1/2
Wages Payable (given)	$₹ 18,00,000 \times \frac{1}{12}$	1,50,000	1/2
Manufacturing OH Payable (given)	Amount given in Question	2,00,000	
Administration OH Payable (given)	$₹ 6,00,000 \times \frac{1}{12}$	50,000	1/2
<b>Total</b>		6,81,250	1/2
<b>C. Net Working Capital</b>	<b>A – B</b>	<b>31,93,750</b>	1/2
D. Safety Margin	5% on ₹ 31,93,750	1,59,688	1/2
<b>E. Required Working Capital</b>	<b>C + D</b>	<b>33,53,438</b>	1/2

Solution to Question 4(b):

[8 Marks]

**1. Computation of Profit Volume Ratio**

	Sales			Profit			PV Ratio	
	Actual	Over / (Under)	Budget	Actual	Over / (Under)	Budget	$= \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$	
North	1,100	(400)	1,500	135	(180)	315	$\frac{180}{400} \times 100 = 45\%$	1 Mark
East	1,450	150	1,300	210	90	120	$\frac{90}{150} \times 100 = 60\%$	1 Mark
South	1,200	(200)	1,400	330	(110)	440	$\frac{110}{200} \times 100 = 55\%$	1 Mark

**2. Computation of Fixed Costs and BEP**

	Actual Sales	PVR	Contribution	Actual Profit	Fixed Cost	BEP
	(1) = Given	(2) (WN 1)	(3) = (1 × 2)	(4) = Given	(5) = (3) – (4)	(6) = (5) ÷ (2)
North	1,100	45%	495	135	360	800
East	1,450	60%	870	210	660	1,100
South	1,200	55%	660	330	330	600
<b>Total</b>	<b>3,750</b>	<b>54%</b>	<b>2,025</b>	<b>675</b>	<b>1,350</b>	<b>2,500</b>

2 Marks

1 Mark

1 Mark

**Note:** Overall PVR =  $\frac{\text{Total Contribution}}{\text{Total Sales Value}} \times 100 = \frac{2,025}{3,750} \times 100 = 54\%$  1 Mark

Overall BEP =  $\frac{\text{Total Fixed Costs}}{\text{Overall PV Ratio}} = \frac{1,350}{54\%} = 2,500$  (in ₹ 000s)

Solution to Question 5(a): Any four points

[4 × 1 = 4 Marks]

- Applicability:** Seed Capital Assistance Scheme is designed by IDBI for professionally or technically qualified entrepreneurs and / or persons possessing relevant experience, skills and entrepreneurial traits. All the projects eligible for financial assistance from IDBI directly or indirectly through refinance are eligible under the scheme.
- Amount of Finance:** The project cost should not exceed ₹ 2 Crores. The maximum assistance under the scheme will be – (a) 50% of the required Promoter's Contribution, or (b) ₹ 15 Lakhs, whichever is lower.
- Interest and Charges:** The assistance is initially interest-free, but carries a service charge of 1% p.a. for the first five years and at increasing rate thereafter. When the financial position and profitability is favourable, IDBI may charge interest at a suitable rate even during the currency of the loan.
- Repayment:** Repayment Schedule is based on the repaying capacity of the unit. Initial Moratorium = Upto five years.



5. **Other Agencies:** For projects with a Project Cost exceeding ₹ 2 Crores, Seed Capital may be obtained from the Risk Capital and Technology Corporation Limited (RCTC). For small projects costing upto ₹ 5 Lakhs, assistance under the National Equity Fund of the SIDBI may be availed.

**Solution to Question 5(b):**

**[4 Marks]**

Resource Constraint means a situation where the required resources i.e. money, materials, men, methods and machinery are not fully available in order to meet the requirements. In Marginal Costing and decision-making, such a situation is called as **Key Factor** or **Critical Factor** situation. **[1 Mark]**

Under Resource Constraint situations, the Finance Manager adopts the following strategy – **Any 3 points [3 × 1 = 3 Marks]**

1. **Creation of database and sound MIS:** This will ensure that retrieval of data is both fast and accurate.
2. **Identification of key areas of decision-making:** This will highlight segments or business functions where the managers have to concentrate and take the correct decisions at the right time.
3. **Capital Structure Decisions:** The Finance Manager has to ensure that resources are made available without creating additional burden of debt. Leverage factor may work in reverse when sales are in a downward trend.
4. **Working Capital Management:** Working Capital Management assumes greater significance in a firm facing Resource Constraints. The Finance Manager has to balance liquidity and profitability aspects in this regard. Working Capital financing tools like Bills Discounting, Factoring, Commercial Paper should be judiciously used.
5. **Capital Budgeting Decisions:** Since funds may not be freely available, the Finance Manager has to invest in projects that maximise the return and minimise risk. Capital Rationing technique is applied when many projects are analysed. Hire Purchase or Leasing may be considered as an alternative mode of financing capital projects.

**Solution to Question 5(c):**

**[4 × 1 = 4 Marks]**

Batch Costing may be used in the following circumstances –

1. When the output of a job consists of a number of units and it is not economical to ascertain cost of every unit of output independently, e.g. printing of Visiting Cards.
2. When customer's annual requirement is to be supplied in uniform quantities over the year.
3. When certain features like size, colour, taste, quality etc. are required uniformly over a collection of units, e.g. garments of the same size, pharmaceuticals, etc.
4. When an internal manufacturing order is made out for production of components / sub-parts, e.g. component parts of automobiles, radio sets, watches, etc.

**Solution to Question 5(d): Any 4 points**

**[4 × 1 = 4 Marks]**

Particulars	Explicit Costs	Implicit Costs
1. <b>Meaning</b>	Costs which involve some cash payment or outflow of resources.	Cost which do not involve any cash payment at all.
2. <b>Also known as</b>	Out-of-Pocket Costs.	Economic / Notional / Imputed Costs.
3. <b>Measurement</b>	These are <b>actually incurred</b> , and hence can be easily and <b>objectively</b> measured.	They are not actually incurred. They cannot be easily measured and involve <b>subjective estimation</b> .
4. <b>Recording in books</b>	<b>Recorded</b> in books of account.	<b>Not recorded</b> in books of account.
5. <b>Purposes</b>	Accounting, Reporting, Cost Control & Decision Making.	Decision-Making like asset replacement, make or buy, etc.
6. <b>Examples</b>	Salaries, Wages, Advertisement, etc.	Interest on own Capital, Rent of own premises, Salary of Proprietor, etc. which are not actually paid.



**Solution to Question 6(a):**

**[5 Marks]**

**1. Computation of CFAT per annum**

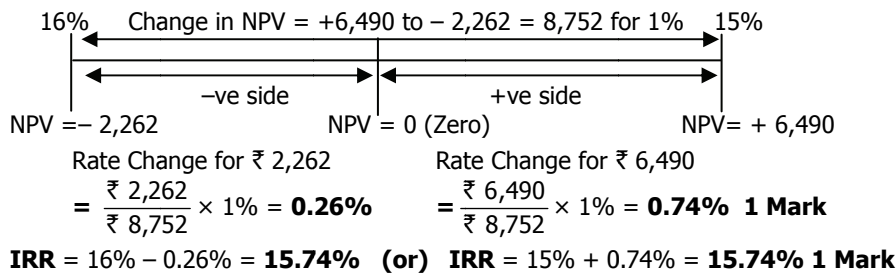
Particulars	₹
Operating PBT after Depreciation	68,000
<b>Less:</b> Tax at 45%	30,600
Profit After Tax	37,400
<b>Add:</b> Depreciation $\frac{₹ 3,60,000}{5 \text{ years}}$	72,000
<b>Cash Flow After Taxes</b>	<b>1,09,400</b>

**2. Determining appropriate Discount Rates**

For approximation purposes, we may compute  
 $\frac{\text{Initial Investment}}{\text{CFAT per annum}} = \frac{₹ 3,60,000}{₹ 1,09,400} = 3.29$ . Since this number 3.29 lies between 3.35 and 3.27 (from the tables given in the question) we take the appropriate Discount Factors as 15% and 16%. Alternatively, NPV can be calculated for each Discount Rate given in the question.

	14%	15%	16%	17%	18%
(a) Discounting Factor	3.43	3.35	3.27	3.20	3.13
(b) Cumulative Factor	3.43	3.35	3.27	3.20	3.13
(c) CFAT p.a. <b>(WN 1)</b>	₹ 1,09,400	₹ 1,09,400	₹ 1,09,400	₹ 1,09,400	₹ 1,09,400
(d) Total DCFAT (b × c)	₹ 3,75,242	₹ 3,66,490	₹ 3,57,738	₹ 3,50,080	₹ 3,42,422
(e) Initial Investment (given)	₹ 3,60,000	₹ 3,60,000	₹ 3,60,000	₹ 3,60,000	₹ 3,60,000
(f) NPV (d – e)	<b>₹ 15,242</b>	<b>₹ 6,490</b>	<b>₹ (2,262)</b>	<b>₹ (9,920)</b>	<b>₹ (17,578)</b>

From the above, i.e. with one +ve NPV and one -ve NPV, IRR is estimated using the number line, as under –



**Note:**

- IRR may be computed using any one +ve and one -ve NPV.
- However, the rates 15% and 16% are taken so as to bring out a better estimate of IRR, since the closer the range of Discount Rates, the better results of IRR estimate will be obtained.

**Solution to Question 6(b):**

**[6 Marks]**

**Simultaneous Equations** are framed and solved as under –

$X = 16,000 + 10\%Y$ .      So,       $X = 16,000 + \frac{1}{10}Y$ ..... **Equation 1**      [ $\frac{1}{2}$  Mark]

$Y = 24,000 + 20\%X$ .      So,       $Y = 24,000 + \frac{1}{5}X$ ..... **Equation 2**      [ $\frac{1}{2}$  Mark]

Substituting the value of X in Equation 2, we have,  $Y = 24,000 + \frac{1}{5}(16,000 + \frac{1}{10}Y)$ .

$Y = 24,000 + 3,200 + \frac{1}{50}Y$ .       $Y - \frac{1}{50}Y = 27,200$       i.e.  $\frac{49}{50}Y = 27,200$ .      So,  $Y = 27,200 \times \frac{50}{49} = 27,755$  **1 Mark**

Substituting the value of Y in Equation 1, we have  $X = 16,000 + (\frac{1}{10} \times 27,755) = 18,776$       [ $\frac{1}{2}$  Mark]

**Statement of OH (Simultaneous Equations Method)**

Particulars	A	B	C	X	Y	Total
OH as given	62,000	1,45,000	74,000	16,000	24,000	3,21,000
X's OH re-apportioned as (20 : 40 : 20 : - : 20)	3,755	7,511	3,755	(18,776)	3,755	Nil $\frac{1}{2}$
Y's OH re-apportioned as (10 : 60 : 20 : 10 :-)	2,776	16,652	5,551	2,776	(27,755)	Nil $\frac{1}{2}$
<b>Total OH after re-apportionment</b>	<b>68,531</b>	<b>1,69,163</b>	<b>83,306</b>	<b>Nil</b>	<b>Nil</b>	<b>3,21,000</b>
Budgeted Capacity Machine hours	4,500	10,000	7,400			
OH Recovery Rate per machine hour (₹)	<b>15.23</b>	<b>16.92</b>	<b>11.26</b>			<b>1 Mark</b>





Solution to Question 6(c):

[5 Marks]

**Memorandum Reconciliation Account**

Particulars	M	₹	Particulars	₹
To Overvaluation of Opg Stock in Cost Books	1/2	15,000	By Net Profit as per Financial Books ( <b>bal.fig</b> )	<b>1,44,000</b>
To SOH overabsorbed in Cost Records	1/2	19,500	By Expenses not considered in Cost Records	
To Incomes not considered in Cost A/cs			– Bad Debts	9,000
– Interest earned	1/2	3,750	– Preliminary Expenses written off	18,000
– Rent received	1/2	27,000	By POH underabsorbed in Cost Books	9,500
To Net Profit as per Cost Records ( <b>given</b> )		1,45,500	By AOH underabsorbed in Cost Books	22,750
			By Overvaluation of Clg Stock in Cost Books	7,500
<b>Total</b>		<b>2,10,750</b>	<b>Total</b>	<b>2,10,750</b>

M  
1/2  
1/2  
1/2  
1/2  
1/2

Solution to Question 7(a): Any 4 points

[4 × 1 = 4 Marks]

The following are the methods of apportionment of joint costs over Joint Products –

Method	Brief Description
1. Physical Quantities Method	Based on Output Weight or Physical Measure, Kgs, Litres, etc.
2. Average Unit Cost Method	Based on Number of Units Produced
3. Survey / Technical Evaluation / Points Method	Based on – (a) Importance X Output Weight or Physical Measure, or (b) Importance X Number of Units Produced
4. Contribution Margin Method	Variable Costs are apportioned using any of the earlier 3 methods. Fixed Costs are apportioned in the Ratio of Contribution.
5. Market Value Methods	Under Market Value Methods, there are options as to Market Value, viz. – (a) Market Value at Split off, (b) Market Value after Further processing, Net Realisable Value at Split-Off where NRV = Final Sales Value <b>Less</b> Profit Margin <b>Less</b> S&D OH <b>Less</b> Further Processing Costs.

Solution to Question 7(b):

[4 Marks]

Explain the significance of (i) Capital Gearing Ratio, (ii) Dividend Yield Ratio.

**Solution:**

	Ratio	Formula	Significance
(i)	Capital Gearing Ratio	$\frac{\text{Preference Capital} + \text{Debt}}{\text{Equity Shareholders Funds}}$	Shows proportion of Fixed Charge (Dividend or Interest) Bearing Capital to Equity Funds, and the extent of advantage or leverage enjoyed by Equity Shareholders. <b>[1 Mark]</b>
(ii)	Dividend Yield (%)	$\frac{\text{Dividend}}{\text{Market Price per Share}}$	True Return on Investment, based on Market Value of Shares. <b>[1 Mark]</b>

Solution to Question 7(c):

[4 Marks]

Meaning	Treatment
<b>Night Shift Allowance:</b> Workers in Factories operating during night time are paid some extra amount known as 'Night Shift Allowance'. This is generally incurred due to the pressure of work beyond normal capacity level. <b>Note:</b> If Night Shift Allowance is treated as part of Direct Wages, then jobs carried out at night will be costlier than jobs performed during the day, leading to a cost anomaly. <b>[1 Mark]</b>	(a) <b>General:</b> Generally Night Shift Allowance is treated as POH and recovered as such. (b) <b>Specific Order:</b> If additional expenditure on night shift is incurred to meet some specific customer order, it should be charged directly to the order concerned. (c) <b>Abnormal:</b> If night shifts are run due to abnormal circumstances, such expense should be charged to Costing P&L A/c. <b>[3 Marks]</b>



**Solution to Question 7(d): Any 4 Points**

**[4 × 1 = 4 Marks]**

In the following special situations, EOQ and ROQ **may not be equal** –

1. Seasonal availability of Raw Materials (Bulk purchases higher than EOQ are made during the availability season.)
2. Peak Production Season (in case of seasonal industries / product with high demand during peak season, etc.)
3. Substantial lead time is involved (Higher quantities may be purchased every time to avoid stock-out situations.)
4. Availing of quantity-based discounts (Higher quantities may be purchased to avail discounts in price of Materials.)
5. When Supplier's minimum supply quantity exceeds the EOQ, e.g. if the Supplier is willing to supply only in minimum lots of 5,000 kgs or more, and EOQ is 3,000 kgs, the re-order quantity will be 5,000 kgs.
6. When certain purchases have to be compulsorily made to fulfil quota requirements, ROQ will be higher than EOQ.

**Solution to Question 7(e): Any one of the formula maybe given**

**[4 Marks]**

Give the formula for computing (i) Efficiency Ratio, (ii) Capacity Ratio, (iii) Calendar Ratio, and (iv) Activity Ratio.

**Solution:**

Ratio	Time-Based Formula	Output-Based Formula	Marks
<b>(i) Efficiency Ratio</b>	$\frac{\text{Standard Hours}}{\text{Actual Hours}}$	$\frac{\text{Actual Output}}{\text{Standard Output}}$	<b>1</b>
<b>(ii) Actual Capacity Utilisation Ratio</b>	(a) $\frac{\text{Actual Hours}}{\text{Budgeted Hours}}$ (or) (b) $\frac{\text{Actual Hours}}{\text{Possible Hours}}$	(a) $\frac{\text{Standard Output}}{\text{Budgeted Output}}$ (or) (b) $\frac{\text{Standard Output}}{\text{Possible Output}}$	<b>1</b>
<b>(iii) Calendar Ratio</b>	$\frac{\text{Actual Days}}{\text{Budgeted Days}}$ (or) $\frac{\text{Possible Hours}}{\text{Budgeted Hours}}$	$\frac{\text{Possible Output}}{\text{Budgeted Output}}$	<b>1</b>
<b>(iv) Volume or Level of Activity Ratio</b>	$\frac{\text{Standard Hours}}{\text{Budgeted Hours}}$	$\frac{\text{Actual Output}}{\text{Budgeted Output}}$	<b>1</b>