

PAPER – 4 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

Question No. 1 is compulsory.

Attempt any **five** questions from the remaining **six** questions.

Working Notes should form part of the answer.

Question 1

- (a) The P/V Ratio of Delta Ltd. is 50% and margin of safety is 40%. The company sold 500 units for ₹ 5,00,000. You are required to calculate:
- (i) Break even point, and
 - (ii) Sales in units to earn a profit of 10% on sales
- (b) X executes a piece of work in 120 hours as against 150 hours allowed to him. His hourly rate is ₹ 10 and he gets a dearness allowance @ ₹ 30 per day of 8 hours worked in addition to his wages. You are required to calculate total wages received by X under the following incentive schemes:
- (i) Rowan Premium Plan, and
 - (ii) Emerson's Efficiency Plan
- (c) A new customer with 10% risk of non-payment desires to establish business connections with you. He would require 1.5 month of credit and is likely to increase your sales by ₹ 1,20,000 p.a. Cost of sales amounted to 85% of sales. The tax rate is 30%. Should you accept the offer if the required rate of return is 40% (after tax)?
- (d) Beeta Ltd. has furnished the following information:
- | | |
|---------------------------|-------|
| - Earning per share (ESP) | ₹ 4 |
| - Dividend payout ratio | ₹ 25% |
| - Market price per share | ₹ 40 |
| - Rate of tax | 30% |
| - Growth rate of dividend | 8% |

The company wants to raise additional capital of ₹ 10 lakhs including debt of ₹ 4 lakhs. The cost of debt (before tax) is 10% upto ₹ 2 lakhs and 15% beyond that.

Compute the after tax cost of equity and debt and the weighted average cost of capital.

(4 x 5 = 20 Marks)

Answer

- (a) (i) P/V Ratio - 50%
- Margin of Safety - 40%

Sales 500 Units for ₹ 5,00,000

Sales Per Unit - ₹ 1000

Calculation of Break Even Point (BEP)

$$\text{Margin of Safety Ratio} = \frac{\text{Sales} - \text{BEP}}{\text{Sales}} \times 100$$

$$40 = \frac{5,00,000 - \text{BEP}}{5,00,000} \times 100$$

$$\text{BEP} = ₹ 3,00,000$$

$$\text{BEP Per Unit} = 3,00,000/1000 = 300 \text{ Units}$$

(ii) Sales in units to earn a profit of 10 % on sales

$$\text{Sales} = \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P/V Ratio}}$$

Let the sales be x

$$\text{Profit} = 10\% \text{ of } x \text{ i.e. } 0.1X.$$

Thus -

$$x = \frac{₹ 1,50,000 + 0.1X}{50\%}$$

$$\text{or } x = ₹ 3,75,000$$

To find out sales in units amount of sales ₹ 3,75,000 is to be divided by Selling Price Per unit

Thus -

$$\begin{aligned} \text{Sales (in units)} &= \frac{3,75,000}{1000} \\ &= 375 \text{ Units} \end{aligned}$$

Working Notes

$$\begin{aligned} 1. \text{ Selling price} &= ₹ 5,00,000/₹ 500 \\ &= ₹ 1000 \text{ per unit} \end{aligned}$$

2. Variable cost per unit

$$\text{Selling Price} - (\text{Selling Price} \times \text{P/V Ratio})$$

$$1000 - (1000 \times 50\%) = ₹ 500$$

3. Profit at present level of sales

$$\text{Margin of Safety} = \frac{\text{Profit}}{\text{P/V Ratio}}$$

$$\text{Margin of Safety} = 40\% \text{ of } ₹ 5,00,000 = ₹ 2,00,000$$

$$2,00,000 = \frac{\text{Profit}}{50\%}$$

$$\text{Profit} = ₹ 1,00,000$$

4. Fixed Cost

$$= (\text{Sales} \times \text{P/V Ratio}) - \text{Profit}$$

$$= 5,00,000 \times 50\% - 1,00,000 = ₹ 1,50,000$$

Note: Alternative ways of calculation of 'Break Even Point' and required sales to earn a profit of 10% of sales' can be adopted to solve the problem.

(b) (i)	Rowan Premium Plan	₹
	Normal wages (10 x 120)	1,200
	D.A. for 15 days (30 x 15)	450

Bonus :

$$\text{Bonus hours} = \frac{120 - 30}{150} = 24 \text{ Hours}$$

$$\text{Bonus (24 x 10)} = 240$$

$$\text{Total Wages} = 1890$$

(ii) Emersion's Efficiency Plan

$$\text{Normal wages} = 1200$$

$$\text{D.A. (15 x 30)} = 450$$

$$\text{Bonus :} = \frac{\text{Time Allowed} - \text{Time Taken}}{\text{Time Taken}} \times 100$$

$$\text{Efficiency Level} = \frac{150}{120} \text{ hours} \times 100 = 125 \%$$

$$\text{Rate of Bonus up to 100\%} = 20\%$$

$$\text{From 101\% to 125\%} = \frac{25\%}{45\%}$$

$$\begin{aligned} \text{Bonus being 45\% normal wages} &= \frac{45}{100} \times 1200 \\ &= 540 \\ \text{Total Wages} &= 2190 \end{aligned}$$

(c) Evaluation of Credit to New Customer**A. Profit on Additional Sales**

Increase in Annual Sales	1,20,000
Less: Cost of Sales being 85%	<u>1,02,000</u>
	18,000
Less: Bad Debts Loss (10% on sales)	<u>12,000</u>
Profit before Tax	6,000
Less: Tax @ 30%	<u>1,800</u>
Net Profit after Tax	<u>4,200</u>

B. Opportunity Cost of Investment

in Receivables (12,750 x 40) 5,100

C. Net Benefit/Loss (A-B) (900)

Decision: Since the estimated profit after tax on additional sales ₹ 4200 is less than the required return on additional investment of ₹ 5,100 in receivables, hence the offer should not be accepted.

Working Notes:

$$(i) \text{ Receivables Turnover} = \frac{12}{1.5} = 8 \text{ Times}$$

(ii) Average Investment in Receivables

$$\begin{aligned} &= \frac{\text{Cost of Sales}}{\text{Receivables Turnover}} = \frac{1,02,000}{8} \\ &= ₹ 12,750 \end{aligned}$$

(iii) Opportunity Cost of Funds Blocked = 12,750 x 40/100 = 5,100

(d) (i) Cost of Equity Share Capital (K_e)

$$K_e (\text{after tax}) = \frac{\text{DPS}}{\text{MPS}} \times 100 + G$$

$$\text{DPS} = 25\% \text{ of } ₹ 4 = ₹ 1.00$$

$$K_e = \frac{\frac{1}{0.40} \times 100}{1 + 0.08}$$

$$K_e = 10.5\%$$

(ii) Cost of Debt (K_d)

$$K_d \text{ (After tax)} = \frac{\text{Interest}}{\text{Net Proceeds}} \times 100 \times (1 - T)$$

$$\text{Interest on ₹ 2,00,000 @ 10\%} = 20,000$$

$$\text{Interest on ₹ 2,00,000 @ 15\%} = \underline{30,000}$$

$$50,000$$

$$K_d = \frac{50,000}{4,00,000} \times 100 \times (1 - 0.3)$$

$$= 8.75\%$$

(iii) Weighted Average Cost of Capital (WACC)

Source (1)	Amount (2) In ₹	Weights (3)	Cost of Capital (4)	Weighted Average Cost (5) = (3)x(4)
Equity	6,00,000	0.6	0.105	0.063
Debt	4,00,000	0.4	0.0875	0.035
Weighted Average Cost of Capital				0.098 or 9.8%

[Note: K_e can be computed alternatively taking growth rate into consideration ($D_0(1+g)/P_0 + g$). The values of K_e and WACC then would change accordingly as 10.7% and 9.92% respectively.]

Question 2

- (a) X Ltd. recovers overheads at a pre-determined rate of ₹ 50 per man-day. The total factory overheads incurred and the man-days actually worked were ₹ 79 lakhs and 1.5 lakhs days respectively. During the period 30,000 units were sold. At the end of the period 5,000 completed units were held in stock but there was no opening stock of finished goods. Similarly, there was no stock of uncompleted units at the beginning of the period but at the end of the period there were 10,000 uncompleted units which may be treated as 50% complete.

On analyzing the reasons, it was found that 60% of the unabsorbed overheads were due to defective planning and the balance were attributable to increase in overhead cost.

How would unabsorbed overheads be treated in cost accounts? (8 Marks)

- (b) The financial statements of a company contain the following information for the year ending 31st March, 2011:

Particulars	₹
Cash	1,60,000
Sundry Debtors	4,00,000
Short-term Investment	3,20,000
Stock	21,60,000
Prepaid Expenses	<u>10,000</u>
Total Current Assets	<u>30,50,000</u>
Current Liabilities	10,00,000
10% Debentures	16,00,000
Equity Share Capital	20,00,000
Retained Earnings	8,00,000
Statement of Profit for the year ended 31st March, 2011	
Sales (20% cash sales)	40,00,000
Less: Cost of goods sold	<u>28,00,000</u>
Profit before Interest & Tax	12,00,000
Less: Interest	<u>1,60,000</u>
Profit before tax	10,40,000
Less: Tax @ 30%	<u>3,12,000</u>
Profit After Tax	7,28,000

You are required to calculate:

- (i) Quick Ratio
 - (ii) Debt-equity Ratio
 - (iii) Return on Capital Employed, and
 - (iv) Average collection period (Assuming 360 days in a year).
- (8 Marks)

Answer

(a) Absorbed overheads = Actual Man days x Rate
 = 1,50,000 x 50
 = ₹ 75,00,000

Under absorption of overheads = Actual overheads – Absorbed overheads
 = 79,00,000 – 75,00,000 = ₹ 4,00,000

Reasons for under-absorption:

1. Defective Planning $4,00,000 \times 60\% = ₹2,40,000$
2. Increase in overhead cost $4,00,000 \times 40\% = ₹1,60,000$

Treatment in Cost Accounts:

- (i) The unabsorbed overheads of ₹ 2,40,000 on account of defective planning to be treated as abnormal and thus be charged to costing profit & loss account.
- (ii) The balance of unabsorbed overheads i.e. ₹ 1,60,000 be charged as below on the basis of supplementary overhead absorption rate

$$\begin{aligned}\text{Supplementary Rate} &= ₹ 1,60,000 / (30,000 + 5,000 + 50\% \text{ of } 10,000) \\ &= ₹ 4 \text{ per unit}\end{aligned}$$

$$(a) \text{ To Cost of Sales Account} = 30,000 \times 4 = ₹ 1,20,000$$

$$(b) \text{ To Finished Stock Account} = 5,000 \times 4 = ₹ 20,000$$

$$(c) \text{ To WIP Account} = 50\% \text{ of } 10,000 \times 4 = ₹ \underline{20,000}$$

$$₹ \underline{1,60,000}$$

$$\begin{aligned}(b) \quad (i) \quad \text{Quick Ratio} &= \frac{\text{Quick Assets}}{\text{Current Liabilities}} \\ \text{Quick Assets} &= \text{Current Assets} - \text{Stock} - \text{Prepaid Expenses} \\ &= 30,50,000 - 21,60,000 - 10,000 \\ \text{Quick Assets} &= 8,80,000 \\ \text{Quick Ratio} &= 8,80,000 / 10,00,000 \\ &= 0.88 : 1\end{aligned}$$

$$\begin{aligned}(ii) \quad \text{Debt-Equity Ratio} &= \frac{\text{Long term debt}}{\text{Shareholders Funds}} \\ &= \frac{16,00,000}{(20,00,000 + 8,00,000)} \\ &= 0.57:1\end{aligned}$$

(iii) Return on Capital Employed (ROCE)

$$\begin{aligned}\text{ROCE} &= \frac{\text{PBIT}}{\text{Capital Employed}} \times 100 \\ &= \frac{12,00,000}{44,00,000} \times 100 = 27.27\%\end{aligned}$$

[**Note:** ROCE can be computed alternatively taking Average total assets into consideration (EBIT (1 – T)/Average Total Assets). The value of ROCE would then change accordingly as 15.56%]

(iv) Average Collection Period

$$= \frac{\text{Sundry Debtors}}{\text{Credit Sales}} \times 360$$

$$= \frac{4,00,000}{32,00,000} \times 360$$

$$= 45 \text{ days}$$

Question 3

(a) The following details are available of Process X for August 2011:

(1) Opening work-in-progress	8,000 units
Degree of completion and cost:	
Material (100%)	₹ 63,900
Labour (60%)	₹ 10,800
Overheads (60%)	₹ 5,400
(2) Input 1,82,000 units at	₹ 7,56,900
(3) Labour paid	₹ 3,28,000
(4) Over heads incurred	₹ 1,64,000
(5) Units scrapped	14,000
Degree of completion:	
Material	100%
Labour and overhead	80%
(6) Closing work-in-process	18000 units
Degree of completion:	
Material	100%
Labour and overhead	70%
(7) 1,58,000 units were completed and transferred to next process.	
(8) Normal loss is 8% of total input including opening work-in-process	
(9) Scrap value is ₹. 8 per unit to be adjusted in direct material cost	

You are required to compute, assuming that average method of inventory is used:

(i) Equivalent production, and

(ii) Cost per unit (8 Marks)

(b) Alpha Ltd. has furnished the following Balance Sheet as on March 31, 2011:

Liabilities	₹	Assets	₹
Equity Share Capital (1,00,000) equity shares of ₹10 each)	10,00,000	Fixed Assets	30,00,000
General Reserve	2,00,000	Current Assets	18,00,000
15% Debentures	28,00,000		
Current Liabilities	8,00,000		
	48,00,000		48,00,000

Additional Information:

- | | |
|---|-----------|
| (1) Annual Fixed Cost other than Interest | 28,00,000 |
| (2) Variable Cost Ratio | 60% |
| (3) Total Assets Turnover Ratio | 2.5 |
| (4) Tax Rate | 30% |

You are required to calculate:

- (i) Earnings per Share (EPS), and
(ii) Combined Leverage. (8 Marks)

Answer

(a) (i) Statement of Equivalent Production

Particulars	Units	Material		Labour and Overhead	
		%	Units	%	Units
Production units completed	1,58,000	100	1,58,000	100	1,58,000
Normal Loss 8% of (1,82,000 + 8,000)	15,200	-	-	-	-
Closing WIP	18,000	100	18,000	70	12,600
Total	1,91,200	-	1,76,000	-	1,70,600
Less : Abnormal Gain	1,200	100	1,200	100	1,200
Total	1,90,000		1,74,800		1,69,400

(ii) Statement of cost

Particulars	Materials	Labour	Overhead
	₹	₹	₹
Opening WIP	63,900	10,800	5,400
Input of Materials	7,56,900	-	-
Expenses	-	3,28,000	1,64,000
Total	8,20,800	3,38,800	1,69,400
Less : Sale of Scrap (15,200 x 8)	1,21,600	-	-
Net cost	6,99,200	3,38,800	1,69,400
Equivalent Units	1,74,800	1,69,400	1,69,400
Cost Per Unit	₹ 4.00	₹ 2.00	₹ 1.00

Total cost per unit = 4+2+1 = ₹ 7.00

Note: The treatment of scrap can be done alternatively as follows and rest of the problem (Calculation of Cost per Equivalent units and Statement of Cost) can be solved accordingly.

Statement of Equivalent Production:

Output	Units	Materials		Labour		Overheads	
Units to Next process	158000	100	158000	100	158000	100	158000
Closing WIP	18000	100	18000	70	12600	70	12600
Abnormal gain	(1200)	100	(1200)	80	(960)	80	(960)
Equivalent Units	174800		174800		169640		169640

Normal Loss = 8% of (opening WIP + New Inputs)
 = 8% of (8000+182000) = 15200 Units

(b) Total Assets = ₹ 48,00,000

Total Assets Turnover Ratio = 2.5

Total Sales = 48,00,000 × 2.5 = ₹ 1,20,00,000

Computation of Profit after Tax (PAT)

Particulars	Amount
Sales	1,20,00,000
Less: Variable Cost (60% of Sales Contribution)	<u>72,00,000</u>
Contribution	48,00,000

Less: Fixed Cost (other than Interest)	<u>28,00,000</u>
	20,00,000
Less: Interest on Debentures (15% of 28,00,000)	<u>4,20,000</u>
PBT	15,80,000
Less: Tax @ 30%	<u>4,74,000</u>
PAT	11,06,000

$$(i) \quad EPS = \frac{PAT}{\text{No. of Equity Shares}}$$

$$= \frac{11,06,000}{1,00,000} = ₹ 11.06$$

$$(ii) \quad DCL = \frac{\text{Contribution}}{EBIT} \times \frac{EBIT}{PBT}$$

$$\text{Or} = \frac{\text{Contribution}}{PBT}$$

$$= \frac{48,00,000}{15,80,000} = 3.04$$

Question 4

- (a) The Trading and Profit and Loss Account of Beta Ltd. for the year ended 31st March, 2011 is given below:

Particulars		Amount (₹)	Particulars (₹)		Amount (₹)
To Opening Stock:			By Sales (Credit)		20,00,000
Raw Materials	1,80,000		By Closing Stock:		
Work- in- progress	60,000		Raw Materials	2,00,000	
Finished Goods	<u>2,60,000</u>	5,00,000	Work-in-progress	1,00,000	
To Purchases (credit)		11,00,000	Finished Goods	<u>3,00,000</u>	6,00,000
To Wages		3,00,000			
To Production Expenses		2,00,000			
To Gross Profit c/d		<u>5,00,000</u>			
		<u>26,00,000</u>			<u>26,00,000</u>
To Administration Expenses		1,75,000	By Gross Profit b/s		5,00,000
To Selling Expenses		75,000			
To Net Profit		<u>2,50,000</u>			
		<u>5,00,000</u>			<u>5,00,000</u>

The opening and closing balances of debtors were ₹ 1,50,000 and ₹ 2,00,000 respectively whereas opening and closing creditors were ₹ 2,00,000 and ₹ 2,40,000 respectively.

You are required to ascertain the working capital requirement by operating cycle method.

(8 Marks)

- (b) The following information have been extracted from the cost records of a manufacturing company:

Stores	₹
* Opening balance	9,000
* Purchases	48,000
* Transfer from WIP	24,000
* Issue to work-in-progress	48,000
* Issue for repairs	6,000
* Deficiency found in stock	1,800
Work-in-Progress:	
* Opening balance	18,000
* Direct Wages applied	18,000
* Overhead charged	72,000
* Closing balance	12,000
Finished Production :	
* Entire production is sold at a profit of 10% on cost from work-in-progress	
* Wages paid.	21,000
* Overhead incurred	75,000

Draw the Stores Leger Control A/c, Work-in-Progress Control A/c, Overheads Control A/c and Costing Profit and Loss A/c.

(8 Marks)

Answer

(a) Computation of Operating Cycle

(1) Raw Material Storage Period (R)

$$\begin{aligned} \text{Raw Material Storage Period (R)} &= \frac{\text{Average Stock of Raw Material}}{\text{Daily Average Consumption of Raw material}} \\ &= \frac{(1,80,000 + 200,000)/2}{10,80,000/360} = 63.33 \text{ Days} \end{aligned}$$

$$\text{Raw Material Consumed} = \text{Opening Stock} + \text{Purchases} - \text{Closing Stock}$$

$$= 1,80,000 + 11,00,000 - 2,00,000 = ₹10,80,000$$

(2) **Conversion/Work-in-Process Period (W)**

$$\begin{aligned} \text{Conversion/Processing Period} &= \frac{\text{Average Stock of WIP}}{\text{Daily Average Production cost}} \\ &= \frac{(60,000 + 1,00,000)/2}{15,40,000/360} = 18.7 \text{ days} \end{aligned}$$

Production Cost:

Opening Stock of WIP	=	60,000
Add: Raw Material Consumed	=	10,80,000
Add: Wages	=	3,00,000
Add: Production Expenses	=	<u>2,00,000</u>
		16,40,000
Less: Closing Stock of WIP	=	<u>1,00,000</u>
Production Cost		<u>15,40,000</u>

(3) **Finished Goods Storage Period (F)**

$$\begin{aligned} \text{Finished Goods Storage Period} &= \frac{\text{Average Stock of Finished Goods}}{\text{Daily Average Cost of Good Sold}} \\ &= \frac{(2,60,000 + 3,00,000)/2}{15,00,000/360} = 67.19 \text{ Days} \end{aligned}$$

Cost of Goods Sold	₹
Opening Stock of Finished Goods	2,60,000
Add: Production Cost	<u>15,40,000</u>
	18,00,000
Less: Closing Stock of Finished Goods	<u>3,00,000</u>
	<u>15,00,000</u>

(4) **Debtors Collection Period (D)**

$$\text{Debtors Collection Period} = \frac{\text{Average Debtors}}{\text{Daily Average Sales}} = \frac{(150000 + 200000)/2}{20,00,000/360} = 31.5 \text{ Days}$$

(5) **Creditors Payment Period (C)**

$$\text{Creditors Payment Period} = \frac{\text{Average Creditors}}{\text{Daily Average Purchase}}$$

$$= \frac{(2,00,000 + 2,40,000)/2}{11,00,000/360} = 72 \text{ Days}$$

(6) Duration of Operating Cycle (O)

$$\begin{aligned} O &= R + W + F + D - C \\ &= 63.33 + 18.7 + 67.19 + 31.5 - 72 \\ &= 108.72 \text{ days} \end{aligned}$$

Computation of Working Capital**(i) Number of Operating Cycles per Year**

$$= 360/\text{Duration Operating Cycle} = 360/108.72 = 3.311$$

(ii) Total Operating Expenses ₹

Total Cost of Production	15,00,000
Add: Administration Expenses	1,75,000
Selling Expenses	<u>75,000</u>
	<u>17,50,000</u>

(iii) Working Capital Required

$$\begin{aligned} \text{Working Capital Required} &= \frac{\text{Total Operating Expenses}}{\text{Number of Operating Cycles per year}} \\ &= \frac{17,50,000}{3.311} = ₹ 5,28,541 \end{aligned}$$

[Note: For computational purposes, the above solution is based on 360 days a year. The solution can also be solved on the basis of 365 days a year. Work-in-process (W) can be computed alternatively taking Administration Expenses as part of Cost of Production. This would lead to further changes in figures of Finished Goods Storage Period, Duration of operating cycle, Number of operating cycles per year and amount of capital required.]

(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
	<u>81,000</u>		<u>81,000</u>

*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	1,20,000
To Wages Control A/c	18,000	(Balancing figures being Cost of finished goods)	
To Overheads Control a/c	72,000	By Balance c/d	12,000
	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	13,800
To Wages Control A/c (21,000-18,000)	3,000	(Under absorption)	
To General Ledger Adjustment A/c	75,000		
	85,800		85,800

Costing Profit & Loss A/c

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

Question 5

Distinguish between:

- (i) Cost Control and cost reduction
- (ii) Fixed and flexible budget.
- (iii) Operating lease and financial lease, and
- (iv) Net present value method and internal rate of return method. (4 × 4 = 16 Marks)

Answer**(i) Difference between Cost Control and Cost Reduction**

- (1) Cost control aims at maintaining the costs in accordance with the established standards. While cost reduction is concerned with reducing costs.
- (2) Cost control seeks to attain lowest possible cost under existing conditions, while cost reduction recognizes no condition as permanent, since a change will result in lower cost.
- (3) In case of cost control, emphasis is on past and present, while in case of cost reduction, it is on present and future.
- (4) Cost control is a preventive while cost reduction is corrective.
- (5) Cost control ends when targets are achieved, while cost reduction has visible end.

(ii) Difference between fixed and flexible budgets

S.No.	Fixed Budget	Flexible Budget
1.	It does not change with actual volume of activity achieved. Thus it is rigid	It can be recasted on the basis of activity level to be achieved. Thus it is not rigid.
2	It operates on one level of activity and under one set of conditions	It consists of various budgets for different level of activity.
3	If the budgeted and actual activity levels differ significantly, then cost ascertainment and price fixation do not give a correct picture.	It facilitates the cost ascertainment and price fixation at different levels of activity.
4.	Comparisons of actual and budgeted targets are meaningless particularly when there is difference between two levels.	It provided meaningful basis of comparison of actual and budgeted targets.

(iii) Difference between Financial Lease and Operating Lease

S.No.	Finance Lease	Operating Lease
1.	The risk and reward incident to ownership are passed on the lessee. The lessor only remains the legal owner of the asset.	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership belongs only to the lessor.
2	The lessee bears the risk of obsolescence.	The lessee is only allowed the use of asset.

3	The lease is non-cancellable by either party under it.	The lease is kept cancellable by the lessor.
4.	The lessor does not bear the cost of repairs, maintenance or operations.	Usually, the lessor bears the cost of repairs, maintenance or operations.
5.	The lease is usually full payout.	The lease is usually non-payout.

(iv) Difference between Net Present Value (NPV) Method and Internal Rate of Return (IRR) Method

1. The results of NPV and IRR methods regarding the choice of an asset under certain circumstances are mutually contradictory under two methods.
2. The NPV is expressed in financial values whereas IRR is expressed in percentage terms.
3. In the NPV, cash flows are assumed to be reinvested at cost of capital rate whereas in IRR, reinvestment is assumed to be made at IRR rates.
4. Under IRR method, a project is selected when IRR is greater than cut-off date, whereas, under NPV method, a project is accepted with positive NPV.

Question 6

- (a) A Ltd. is considering the purchase of a machine which will perform some operations which are at present performed by workers. Machines X and Y are alternative models. The following details are available:

	Machine X	Machine Y
	(₹)	(₹)
Cost of machine	1,50,000	2,40,000
Estimated life of machine	5 years	6 years
Estimated cost of maintenance p.a.	7,000	11,000
Estimated cost of indirect material, p.c.	6,000	8,000
Estimated savings in scrap p.a.	10,000	15,000
Estimated cost of supervision p.a.	12,000	16,000
Estimated savings in wages pa.	90,000	1,20,000

Depreciation will be charged on straight line basis. The tax rate is 30%. Evaluate the alternatives according to:

- (i) Average rate of return method, and
- (ii) Present value index method assuming cost of capital being 10%.

(The present value of ₹ 1.00 @ 10% p.a. for 5 years is 3.79 and for 6 years is 4.354)

(8 Marks)

(b) Gama Ltd. has furnished the following standard cost data per unit of production:

*	Material 10 kg @ ₹ 10 per kg.
*	Labour 6 hours @ ₹ 5.50 per hour
*	Variable overhead 6 hours @ ₹. 10 per hour.
*	Fixed overhead ₹ 4,50,000 per month (Based on a normal volume of 30,000 labour hours.)

The actual cost data for the month of August 2011 are as follows:

*	Material used 50,000 kg at a cost of ₹ 5,25,000.
*	Labour paid ₹ 1,55,000 for 31,000 hours worked
*	Variable overheads ₹ 2,93,000
*	Fixed overheads ₹ 4,70,000
*	Actual production 4,800 units.

Calculate:

- (i) Material cost variance.
- (ii) Labour cost variance.
- (iii) Fixed overhead cost variance.
- (iv) Variable overhead cost variance.

Answer**(a) Working Notes:**

$$\text{Depreciation on Machine X} = \frac{1,50,000}{5} = ₹ 30,000$$

$$\text{Depreciation on Machine Y} = \frac{2,40,000}{6} = ₹ 40,000$$

Particulars	Machine X (₹)	Machine Y (₹)
Annual Savings:		
Wages	90,000	1,20,000
Scrap	10,000	15,000
Total Savings (A)	1,00,000	1,35,000
Annual Estimated Cash Cost :		
Indirect Material	6,000	8,000
Supervision	12,000	16,000
Maintenance	7,000	11,000

Total Cash Cost (B)	25,000	35,000
Annual Cash Savings (A-B)	75,000	1,00,000
Less : Depreciation	30,000	40,000
Annual Savings Before Tax	45,000	60,000
Less : Tax @ 30%	13,500	18,000
Annual Savings/Profit (After Tax)	31,500	42,000
Add : Depreciation	30,000	40,000
Annual Cash Inflows	61,500	82,000

Evaluation of Alternatives**(i) Average Rate of Return Method (ARR)**

$$\text{ARR} = \frac{\text{Average Annual Net Savings}}{\text{Average Investment}}$$

$$\text{Machine X} = \frac{31,500}{75,000} \times 100 = 42\%$$

$$\text{Machine Y} = \frac{42,000}{1,20,000} \times 100 = 35\%$$

Decision : Machine X is better.

[**Note:** ARR can be computed alternatively taking initial investment as the basis for computation (ARR = Average Annual Net Income/Initial Investment). The value of ARR for Machines X and Y would then change accordingly as 21% and 17.5% respectively]

(ii) Present Value Index Method

$$\text{Present Value} = \text{Annual Cash Inflow} \times \text{P.V. Factor @ 10\%}$$

$$\begin{aligned} \text{Machine X} &= 61,500 \times 3.79 \\ &= ₹ 2,33,085 \end{aligned}$$

$$\begin{aligned} \text{Machine Y} &= 82,000 \times 4.354 \\ &= ₹ 3,57,028 \end{aligned}$$

$$\text{P.V. Index} = \frac{\text{Present Value}}{\text{Investment}}$$

$$\text{Machine X} = \frac{2,33,085}{1,50,000} = 1.5539$$

$$\text{Machine Y} = \frac{3,57,028}{2,40,000} = 1.4876$$

Decision : Machine X is better.

(b) Budgeted Production 30,000/6 = 5,000 units

$$\begin{aligned}\text{Budgeted Fixed Overhead Rate} &= 4,50,000/5,000 \\ &= ₹ 90 \text{ per unit}\end{aligned}$$

1. MCV = Total Standard Cost for Actual Output – Total Actual Cost
 $= 4,800 \times 10 \times 10 - 5,25,000$
 $= 4,80,000 - 5,25,000$
 $= 45,000 \text{ (A)}$
2. LCV = Total Standard Cost of labour for Actual Output – Total Actual Cost of labour
 $= 48,00 \times 6.0 \times 5.50 - 1,55,000$
 $= 1,58,400 - 1,55,000$
 $= 3400 \text{ (F)}$
3. FOCV = Recovered Fixed overhead - Actual Fixed overhead
 $= 90 \times 4,800 - 4,70,000$
 $= 38,000 \text{ (A)}$
4. VOCV = Recovered Variable overheads – Actual Variables overheads
 $= 4,800 \times 6 \times 10$
 $= 2,88,00 - 2,93,000$
 $= 5,000 \text{ (A)}$

[MCV- Material Cost Variance, LCV- Labour Cost Variance, FOCV- Fixed Overhead Cost Variance, VOCV- Variable Overhead Cost Variance]

Question 7

Answer any **four** of the following:

- (a) Elucidate the responsibilities of Chief Financial Officer.
- (b) Explain the relevance of time value of money.
- (c) Discuss ABC analysis as a system of inventory control
- (d) Explain the terms notional profit and retention money in contract costing. .
- (e) Explain the following:

(i) *Bridge finance*

(ii) *Essentials of budget*

(4 × 4 = 16 Marks)

Answer

(a) Main Responsibilities of Chief Financial Officer (CFO)

The main responsibilities of Chief Financial Officer (CFO) are as follows:

1. Financial analysis and planning.
2. Investment decisions - Efficient utilization of funds to specific assets/projects.
3. Capital structure decisions.
4. Management of short-term financial resources (working capital).
5. Risk management.

(b) Relevance of Time Value of Money in Financial Decisions

A rupee today is more valuable than rupee after a year due to several reasons:

1. **Risk:** There is uncertainty about the receipt of money in future.
2. **Preference for Present Consumption:** Most of the person and companies in general, prefer current consumption over future consumption.
3. **Inflation:** In an inflationary period a rupee today represents a greater real purchasing power than a rupee after a year.
4. **Investment Opportunities:** Most of the persons and companies have a preference for present money because of availabilities of opportunities of investment for earning additional cash flow.

Many financial problems involve cash flow accruing at different points of times for evaluating such cash flow an explicit consideration of time value of money is required.

(c) ABC analysis exercises discriminating control over different items of stores classified on the basis of investment involved.

'A' category items consists of only a small proportion i.e. approximately 10% of total items of stores but needs huge investment. Say about 70% of inventory value, because of their high prices or heavy requirement.

'B' category items are relatively 20% of the total items of stores. The proportion of investments requires is also approximately 20% of total inventory investment.

'C' category items do not require much investment. It may be about 10% total inventory value but they are nearly 70% of the total items of stores.

(d) Notional Profit in contract costing ;

It represents the difference between the value of work certified and cost of work certified.

Notional Profit = Value of work Certified Less Cost of work Certified

Retention money in contract Costing:

A contractor does not receive the full payment of work certified by the surveyor of work certified by the surveyor. Contractee retains some amount to be paid after some time, when it is ensured that there is no default in the work done by the contractor. If any deficiency or defect is noticed it is to be rectified by the contractor before the release of the retention money. Thus retention money provides a safe guard against the default risk in contract

(e) (i) Bridge Finance

It refers to loans taken by a company normally from commercial banks for a short period because of pending disbursement of loans sanctioned by financial institutions.

(ii) Essentials of budget

- It is prepared in advance and is based on a future plan of actions
- It relates to a future period and is based on objectives to be attained.
- It is a statement expressed in monetary and/or physical units prepared for the implementation of policy formulated by management.