PAPER – 3 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

*Question No. **1** is compulsory.*

*Attempt any **five** questions out of the remaining **six** questions.*

In case, any candidate answers extra question(s)/ sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.

Working notes should form part of the answer.

Question 1

Answer the following:

(a) ASJ manufacturer produces a product which requires a component costing ₹ 1,000 per unit. Other information related to the component are as under:

Usage. of component	*1,500 units per month*
Ordering cost	*₹ 75 per order*
Storage cost rate	*2% per annum*
Obsolescence rate	*1% per annum*
Maximum usage	*400 units per week*
Lead Time	*6-8 weeks*

The firm has been offered a quantity discount of 5% by the supplier on the purchase of component, if the order size is 6,000 units at a time.

You are required to compute:

(i) Economic Order Quantity (EOQ)

(ii) Re-order Level and advise whether the discount offer be accepted by the firm or not.

(b) A company planned to produce 2,000 units of a product in a week of 40 hours by employing 65 skilled workers. Other relevant information are as follows:

- *Standard wages rate : ₹ 45 per hour*
- *Actual production : 1800 units*
- *Actual number of worker employed: 50 workers in a week of 40 hours*
- *Actual wages rate : ₹ 50 per hour*
- *Abnormal time loss due to machinery breakdown :100 hours.*

You are required to calculate:

(i) Labour cost, rate, idle time and efficiency variances.

(ii) Reconcile the variances.

(c) S Ltd. has furnished the following information for the year ending 31st March, 2018:

	₹
Net profit before taxation	*20,78,000*
Depreciation charged to P&L Account	*8,00,000*
Profit on sale of plant & machinery	*2,20,000*
Increase in debtors	*2,40,000*
Decrease in stock	*6,80,000*
Decrease in other current liabilities	*1,50,000*
Increase in creditors	*20,000*
Purchases of plant and machinery	*23,20,000*
Proceeds from issue of share capital	*15,00,000*
Dividend paid	*7,20,000*
Income-tax paid	*7,28,000*

You are required to calculate cash from operating activities in accordance with AS-3.

(d) JC Ltd. is planning an equity issue in current year. It has an earning per share (EPS) of ₹ 20 and proposes to pay 60% dividend at the current year end. With a PIE ratio 6.25, it wants to offer the issue at market price. The flotation cost is expected to be 4% of the issue price.

Required: Determine the required rate of return for equity share (cost of equity) before the issue and after the issue ***(4 x 5 = 20 Marks)***

Answer

(a) (i) Annual usage of Components (A) = 1500×12 =18,000 Units

Ordering Cost (O) = ₹ 75 per order

Carrying cost per unit per annum (C) i.e. Storage cost + Obsolescence cost = 2% + 1% = 3%

Calculation of Economic Order Quantity

$$EOQ = \sqrt{\frac{2AO}{C}} = \sqrt{\frac{2 \times 18,000 \text{ units} \times ₹\ 75}{₹\ 1000 \times 3\%}} = 300 \text{ units}$$

(ii) Re- Order level: = (Maximum usage × Maximum lead time)

= 400 units × 8weeks

= 3,200 units

Evaluation of Profitability of Different Options of Order Quantity

When EOQ is ordered

		(₹)
Purchase Cost	(18,000 × 1,000)	1,80,00,000
Ordering Cost $(\frac{A}{Q} \times O)$	$\frac{(18000 \times 75)}{300}$	4,500
Carrying Cost $(\frac{Q}{2} \times C \times i)$	$(\frac{300}{2} \times 30)$	4,500
Total Cost		1,80,09,000

When Quantity Discount is accepted

		(₹)
Purchase Cost	[18,000 - (1,000-5%)]	1,71,00,000
Ordering Cost $(\frac{A}{Q} \times O)$	$(\frac{18,000}{6,000} \times 75)$	225
Carrying Cost $(\frac{Q}{2} \times C \times i)$	$(\frac{6000}{2} \times 950 \times 3\%)$	85,500
Total Cost		171,85,725

So, Savings in cost = ₹ 8,23,275 (₹1,80,09,000 – ₹ 1,71,85,725)

Advice – The total cost of inventory is higher if EOQ is adopted. If we accept quantity discount of 5% offered by the supplier, 'ASJ' will save ₹ 8,23,275/-. Hence, the company is advised to accept the quantity discount.

(b) (i) Labour cost variance (SH x Std. Rate) – (AH paid x AR)]

$$\left(\frac{₹\,40 \times ₹\,65}{₹\,2,000} \times ₹1,800\right) \times ₹\,45 - (₹\,50 \times ₹\,40 \times ₹\,50)$$

= (₹ 1,05,300 – ₹ 1,00,000)

= ₹ 5,300 (F)

Labour Rate Variance = AH paid (SR-AR)

= ₹ 2,000 (45-50) = ₹ 10,000 (A)

Labour efficiency variance = SR (SH – AH worked)

= ₹45 (₹ 2,340 – ₹ 1,900) = ₹ 19,800(F)

Idle time variance = SR × Idle time = ₹ 45 × ₹ 100 = ₹ 4,500(A)

(ii) Reconciliation

Labour Cost Variance = Labour Rate Variance + Labour efficiency variance + Idle time variance

Or

₹ 10,000 (A) + ₹ 19,800 (F) + ₹ 4,500 (A) = ₹ 5,300(F)

(c) Statement of Cash Flows for the year ended 31st March 2018 (as per AS-3)

		(₹)
Cash flow from Operating Activities		
Net profit before taxation		20,78,000
Add: Depreciation charged to P & L account		8,00,000
Less: Profit on Sale of Plant & Machinery		(2,20,000)
Operating profit before working capital changes		26,58,000
Add: Decrease in Stock	680000	
Add: Increase in Creditors	20000	
Less: Increase in Debtors	(240000)	
Less: Decrease in Current Liabilities	(150000)	310000
Cash generated from Operating activities		29,68,000
Less: Income tax		7,28,000
Net Cash from Operating activities		22,40,000

(d) Workings

- P_0 = EPS × P/E = 20 × 6.25 = 125
- r = Rate of Return on Retained Earnings = 100/6.25 = 16%
- Retention ratio = b = 1 – Dividend Payout Ratio = 1 – 0.60 = 0.40
- Growth rate = g = br = 0.40 ×0.16 = 0.064
- D_0 = EPS × Dividend Payout

  = 20 × 60%

  = 12
- $D_1 = D_0 (1+ g) = 12 (1+0.064) = 12.768$

  Cost of Equity before issue

  $$k_e = \frac{D_1}{P_0} + g = \frac{12.768}{125} + 0.064 = 0.1021 + 0.064 = 0.1661 \text{ or } 16.61\%$$

Cost of Equity after issue

$$k_e = \frac{D_1}{P_0} + g = \frac{12.768}{120} + 0.064 = 0.1064 + 0.064 = 0.1704 \text{ or } 17.04\%$$

Question 2

(a) A company is producing an identical product in two factories. The following are the details in respect of both factories:

	Factory X	*Factory Y*
Selling price per unit (₹)	*50*	*50*
Variable cost per unit (₹)	*40*	*35*
Fixed cost (₹)	*2,00,000*	*3,00,000*
Depreciation included in above fixed cost (₹)	*40,000*	*30,000*
Sales in units	*30,000*	*20,000*
Production capacity (units)	*40,000*	*30,000*

You are required to determine:

(i) Break Even Point (BEP) each factory individually.

(ii) Cash break even point for each factory individually.

(iii) BEP for company as a whole, assuming the present product mix is in sales ratio.

(iv) Consequence on profit and BEP if product mix is changed to 2:3 and total demand remain same. ***(8 Marks)***

(b) G Ltd. has furnished the following information relating to the year ended 31st March, 2017 and 31st March, 2018:

	31st March, 2017	*31st March, 2018*
Share Capital	*40,00,000*	*40,00,000*
Reserve and Surplus	*20,00,000*	*25,00,000*
Long term loan	*30,00,000*	*30,00,000*

- *Net profit ratio: 8%*
- *Gross profit ratio: 20%*
- *Long-term loan has been used to finance 40% of the fixed assets.*
- *Stock turnover with respect to cost of goods sold is 4.*
- *Debtors represent 90 days sales.*
- *The company holds cash equivalent to 1½ months cost of goods sold.*
- *Ignore taxation and assume 360 days in a year.*

You are required to prepare Balance Sheet as on 31st March, 2018 in following format:

Liabilities	***(₹)***	***Assets***	***(₹)***
Share Capital	-	*Fixed Assets*	-
Reserve and Surplus	-	*Sundry Debtors*	-
Long-term loan	-	*Closing Stock*	-
Sundry Creditors	-	*Cash in hand*	-

(8 Marks)

Answer

(a)

	Factory X	**Factory Y**
(i) Break Even Point: $\left(\frac{\text{Fixed Cost}}{\text{Contribution}}\right)$	$\frac{2,00,000}{50-40}$ = 20,000 units	$\frac{3,00,000}{50-35}$ = 20,000 units
(ii) Cash Break Even Point: $\left(\frac{\text{Fixed Cost - Depreciation}}{\text{Contribution}}\right)$	$\frac{2,00,000-40,000}{10}$ = 16,000 units	$\frac{3,00,000-30,000}{15}$ = 18,000 units

(iii) BEP as a whole $= \frac{\text{Complete Fixed Cost}}{\text{Composite Contribution}}$

$$= \frac{₹\,2,00,000 + ₹\,3,00,000}{10 \times \frac{3}{5} + 15 \times \frac{2}{5}}$$

$$= \frac{₹\,5,00,000}{6+6} = 41,667 \text{ units}$$

(iv) New Sales Mix = $50,000 \times \frac{2}{5}$ = 20,000 of X

$$= 50,000 \times \frac{3}{5} = 30,000 \text{ of Y}$$

Calculation of Composite contribution = $10 \times \frac{2}{5} + 15 \times \frac{3}{5}$

= 4+9 = ₹13

Consequence on profit

	Existing Mix	New Mix
Contribution	50,000 × 12 = 6,00,000	50,000 × 13 = 6,50,000
Less: Fixed Cost	5,00,000	5,00,000
Profit	1,00,000	1,50,000

∴ Increase in profit = ₹ 1, 50,000 – ₹ 1, 00,000

= ₹ 50,000

Consequence on BEP

$$\text{New BEP as a whole} = \frac{\text{Complete Fixed Cost}}{\text{Composite Contribution}}$$

$$= \frac{5,00,000}{13} = 38,462 \text{ units}$$

So, BEP Reduced by 3205 units (41,667 – 38,462)

(b) Change in Reserve & Surplus = ₹ 25, 00,000 – ₹ 20,00,000 = ₹ 5,00,000

So, Net profit = ₹ 5, 00,000

(i) Net Profit Ratio = 8%

$$\therefore \text{ Sales} = \frac{5,00,000}{8\%} = ₹ 62,50,000$$

(ii) Cost of Goods sold

= Sales – Gross profit Margin

= ₹ 62, 50,000 – 20% of ₹ 62, 50,000

= ₹ 50, 00,000

(iii) Fixed Assets $= \frac{₹ 30,00,000}{40\%} = ₹ 75,00,000$

(iv) Stock $= \frac{\text{Cost of Goods Sold}}{\text{STR}} = \frac{50,00,000}{4} = ₹ 12,50,000$

(v) Debtors $= \frac{62,50,000}{360} \times 90 = ₹ 15,62,500$

(vi) Cash Equivalent = $\frac{50,00,000}{12} \times 1.5 = ₹ 6,25,000$

Balance Sheet as on 31st March 2018

Liabilities	(₹)	Assets	(₹)
Share Capital	40,00,000	Fixed Assets	75,00,000
Reserve and Surplus	25,00,000	Sundry Debtors	15,62,500
Long-term loan	30,00,000	Closing Stock	12,50,000
Sundry Creditors (Balancing Figure)	14,37,500	Cash in hand	6,25,000
	1,09,37,500		1,09,37,500

Question 3

(a) *A company wants to outsource the operation of its canteen to a contractor. The company will provide space for cooking, free electricity and furniture in the canteen. The contractor will have to provide lunch to 300 workers of which 180 are vegetarian (Veg) and the rest are non-vegetarian (Non-Veg). In the case of non-veg meals, there will be a non-veg item in addition to the veg items. A contractor who is interested in the contract has analysed the costs likely to be incurred. His analysis is given below:*

Cereals	*₹ 8 per plate*
Veg items	*₹ 5 per plate*
Non-veg items	*₹ 15 per plate*
Spices	*₹ 1 per plate*
Cooking oil	*₹ 4 per plate*
One cook	*Salary ₹ 13,000 per month*
Three helpers	*Salary ₹ 7,000 per month per head*
Fuel	*Two commercial cylinders per month, price ₹ 1000 each.*

On an average the canteen will remain open for 25 days in a month. The contractor wants to charge the non-veg meals at 1.50 times of the veg meals.

You are required to calculate:

(i) The price per meal (veg and non-veg separately) that contractor should quote if he wants a profit of 20% on his takings.

(ii) The price per meal (separately for veg and non-veg) that a worker will be required to pay if the company provides 60% subsidy for meals out of welfare fund.

(8 Marks)

(b) A company is considering to engage a factor. The following information is available:

- *The current average collection period for the company's debtors is 90 days and ½% of debtors default. The factor has agreed to pay money due after 60 days and will take the responsibility of any loss on account of bad debts.*
- *The annual charge for factoring is 2% of turnover. Administration cost saving is likely to be ₹ 1,00,000 per annum.*
- *Annual credit sales are ₹ 1,20,00,000. Variable cost is 80% of sales price. The company's cost of borrowing is 15% per annum. Assume 360 days in a year.*

Should the company enter into a factoring agreement? ***(8 Marks)***

Answer

(a) Calculation of cost and amount chargeable by the Contractor

Particulars	Veg.	Non-Veg
No of Meals per Day	180	120
No of Meals per Month	180×25 = 4,500	120×25 = 3,000
Variable Cost:	₹	₹
Cereals	8 per plate	-
Veg items	5 per plate	-
Cooking Oil	4 per plate	-
Spices	1 per plate	-
Total Variable Cost	18 × 7500 (4500 + 3000)	1,35,000
Additional variable cost of Non-veg meal	15 × 3000	45,000
Total Variable Cost		1,80,000
Fixed Cost:		
Salary of Cook	13,000	
Salary of Helpers (7,000 × 3)	21,000	
Fuel	2,000	36,000
Total Cost		2,16,000
Profit 20% on his takings or 25% on Cost		54,000
Total amounts chargeable by the Contractor		2,70,000

(i) No. of Non-Veg Meals 3,000

Equivalent No. of Veg Meals = 3,000 × 1.5 = 4,500

No. of Non Veg Meals = 4,500

Total 9,000

Price per Veg Meal = $\frac{₹\ 2,70,000}{₹\ 9,000}$ = ₹ 30

Price per Non Veg. Meal = ₹ 30 × 1.5 = ₹ 45/-

(ii) Price per meal when a worker will have to pay

Veg meal ₹ 30 – Subsidy (60% of ₹ 30)

= ₹ 30 – ₹ 27 = ₹ 12/-

Non-Veg Meal ₹ 45 – Subsidy (60% of ₹ 45)

₹ 45 – ₹ 27 = ₹ 18/-

Note: Cost of Veg and non-veg meal calculated separately and then profit of 20% on overall takings and 25% profit on overall Cost is added to determine the total price to be charged.

(b) Presently, the Debtors of the company pay after 90 days. However, the factor has agreed to pay after 60 days only. So, the investment in debtors will be reduced by 30 days.

The annual charge in cash flows through entering into a factoring agreement is:

	₹	₹
A. Annual Charge (2% × 1,20,00,000)		(2,40,000)
B. Administration Cost Saved		1,00,000
Existing Average Debtors (₹ 1,20,00,000 ÷ 360 × 90) days	30,00,000	
Average New Debtors (₹ 1,20,00,000 ÷360 × 60) days	20,00,000	
Reduction in Debtors	10,00,000	
Variable Cost thereof 80%	8,00,000	
C. Interest Saving @ 15% on ₹ 8,00,000		1,20,000
D. Bad Debt Saved @ 0.5% of ₹ 1,20,00,000		60,000
E. Net Annual Benefits of Factoring (B + C + D – A)		40,000

Advice: Therefore, the factoring agreement is worthwhile and should be undertaken.

Question 4

(a) ABC Ltd. produces an item which is completed in three processes - X, Y and Z. The following information is furnished for process X for the month of March, 2018 :

Opening work-in-progress (5,000 units):

Materials	*₹ 35,000*
Labour	*₹ 13,000*
Overheads	*₹ 25,000*

Units introduced into process X (55,000 units):

Materials	*₹ 20,20,000*
Labour	*₹ 8,00,000*
Overheads	*₹ 13,30,000*

Units scrapped: 5,000 units

Degree of completion:

Materials	*100%*
Labour & Overheads	*60%*

Closing work-in-progress (5,000 units):

Degree of completion:

Materials	*100%*
Labour & Overheads	*60%*

Units finished and transferred to Process Y: 50,000 units

Normal loss: 5% of total input (including opening works-in progress) Scrapped units fetch ₹ 20 per unit.

Presuming that average method of inventory is used, prepare

(i) Statement of Equivalent production

(ii) Statement of Cost for each element

(iii) Statement of distribution of cost

(iv) Abnormal loss account ***(8 Marks)***

(b) Following are the selected financial information of A Ltd. and B Ltd. for the year ended March 31, 2018:

	A Ltd.	***B Ltd.***
Variable Cost Ratio	*60%*	*50%*
Interest	*₹ 20,000*	*₹ 1,00,000*
Operating Leverage	*5*	*2*
Financial Leverage	*3*	*2*
Tax Rate	*30%*	*30%*

You are required to find out

(i) EBIT

(ii) Sales

(iii) Fixed Cost

(iv) Identify the company which is better placed with reasons based on leverages.

(8 Marks)

Answer

(a) (i) Statement of Equivalent Production

Input	Units	Output	Units	Equivalent production			
				Material		Labour & Overheads	
				(%)	Units	(%)	Units
Opening WIP	5,000	Completed and transferred to Process 'Y'	50,000	100	50,000	100	50,000
Units introduced	55,000	Normal loss (5% of 60,000 units)	3,000	--	--	--	--
		Abnormal loss	2,000	100	2,000	60	1,200
		Closing WIP	5,000	100	5,000	60	3,000
	60,000		60,000		57,000		54,200

(ii) Statement of Cost

Details	Cost at the beginning of process	Cost added	Total cost	Equivalent Units	Cost per unit
	(₹)	(₹)	(₹)	(₹)	(₹)
Material	35,000	20,20,000	20,55,000		
Less: Value of normal loss (3,000 units × ₹ 20)			(60,000)		
			19,95,000	57,000	35
Labour	13,000	8,00,000	8,13,000	54,200	15
Overheads	25,000	13,30,000	13,55,000	54,200	25
Total	73,000	41,50,000	41,63,000		75

(iii) Statement of Distribution of Cost

	(₹)
Completed and transferred to Process-Y (50,000 units × ₹ 75)	37,50,000
Abnormal Loss:	
Materials (2,000 units × ₹ 35)	70,000
Wages (1,200 units × ₹ 15)	18,000.00
Overheads (1,200 units × ₹ 25)	30,000.00
	1,18,000
Closing WIP:	
Materials (5,000 units × ₹ 35	1,75,000
Wages (3,000 units × ₹ 15)	45,000
Overheads (3,000 units × ₹ 25)	75,000
	2,95,000

(iv) Abnormal Loss Account

Particulars	Units	Amount	Particulars	Units	Amount
To Process-X A/c	2,000	1,18,000	By Cost Ledger Control A/c.	2,000	40,000
			By Costing Profit & Loss A/c.	-	78,000
	2,000	1,18,000		2,000	1,18,000

(b) Company A

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$

So, 3 $= \frac{\text{EBIT}}{\text{EBIT} - 20,000}$

Or, 3 (EBIT – 20,000) = EBIT

Or, 2 EBIT = 60,000

Or, EBIT = 30,000

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}}$ Or, $5 = \frac{\text{Contribution}}{₹\ 30,000}$

Or, Contribution = ₹ 1, 50,000

$$\text{Sales} = \frac{\text{Contribution}}{\text{P/V Ratio(1- variable cost ratio)}} = \frac{₹\ 1,50,000}{40\%} = ₹3,75,000$$

(iii) Fixed Cost = Contribution – EBIT

= ₹1, 50,000 – 30,000

or, Fixed cost = ₹ 1,20,000

Company B

(i) Financial Leverage $= \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$

So, 2 $= \frac{\text{EBIT}}{\text{EBIT - 1,00,000}}$

Or, 2 (EBIT – 1,00,000) = EBIT

Or, 2 EBIT -2,00,000 = EBIT

Or, EBIT = ₹ 2,00,000

(ii) Operating Leverage $= \frac{\text{Contribution}}{\text{EBIT}}$ Or, $2 = \frac{\text{Contribution}}{₹\ 2,00,000}$

Or, Contribution = ₹ 4,00,000

$$\text{Sales} = \frac{\text{Contribution}}{\text{P/V Ratio(1- variable cost ratio)}} = \frac{₹\ 4,00,000}{50\%} = ₹\ 8,00,000$$

(iii) Fixed Cost = Contribution – EBIT

= ₹ 4, 00,000 – ₹ 2,00,000

or, Fixed cost = ₹ 2,00,000

Income Statements of Company A and Company B

	Company A (₹)	Company B (₹)
Sales	3,75,000	8,00,000
Less: Variable cost	2,25,000	4,00,000
Contribution	1,50,000	4,00,000
Less: Fixed Cost	1,20,000	2,00,000
Earnings before interest and tax (EBIT)	30,000	2,00,000
Less: Interest	20,000	1,00,000
Earnings before tax (EBT)	10,000	1,00,000
Less: Tax @ 30%	3,000	30,000
Earnings after tax (EAT)	7,000	70,000

Comment based on Leverage

Comment based on leverage – Company B is better than company A of the following reasons:

- Capacity of Company B to meet interest liability is better than that of companies A (from EBIT/Interest ratio)

  [A = $\frac{30,000}{20,000}$ = 1.5, B = $\frac{2,00,000}{1,00,000}$ = 2]

- Company B has the least financial risk as the total risk (business and financial) of company B is lower (combined leverage of Company A – 15 and Company B- 4)

Question 5

Answer all four:

(a) List important factors which must be taken into consideration for increasing labour productivity.

(b) What are the essential pre-requisites of integrated accounting system?

(c) Discuss the factors to be taken into consideration while determining the requirement of working capital.

(d) Differentiate between Business risk and Financial risk. ***(4 x 4 = 16 Marks)***

Answer

(a) ***Factors for increasing labour productivity:*** The important factors which must be taken into consideration for increasing labour productivity are as follows:

1. Employing only those workers who possess the right type of skill.
2. Placing a right type of man on the right job.
3. Training young and old workers by providing them the right types of opportunities.
4. Taking appropriate measures to avoid the situation of excess or shortage of labour at the shop floor.
5. Carrying out work study for the fixation of wage rate, and for the simplification and standardisation of work.

(b) Essential pre-requisites of Integrated Accounting System: The essential pre-requisites of Integrated Accounting System include the following:

1. The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate upto the stage of primary cost or factory cost while other prefer full integration of the entire accounting records.

2. A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts.
3. An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts.
4. Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.

Under this system there is no need for a separate cost ledger. Of course, there will be a number of subsidiary ledgers; in addition to the useful Customers Ledger and the Bought Ledger, there will be: (a) Stores Ledger; (b) Finished Stock Ledger and (c) W-I-P Ledger.

(c) Factors to be taken into consideration while determining the requirement of working capital:

(i) Production Policies
(ii) Nature of the business
(iii) Credit policy
(iv) Inventory policy
(v) Abnormal factors
(vi) Market conditions
(vii) Conditions of supply
(viii) Business cycle
(ix) Growth and expansion
(x) Level of taxes
(xi) Dividend policy
(xii) Price level changes
(xiii) Operating efficiency.
(xiv) Receivables
(xv) Technology and Manufacturing policies
(xvi) Short term financing options

(d) Difference between Business risk and Financial risk.

Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm has to operate and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.

Whereas, Financial risk refers to the additional risk placed on firm's shareholders as a result of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

Question 6

(a) Delta Ltd. is a manufacturing concern having two production departments P_1 and P_2 and two service departments S_1 and S_2. After making a primary distribution of factory overheads, the total overheads of all departments are as under:

	(in ₹)
P_1	4,02,000
P_2	2,93,000
S_1	3,52,000
S_2	33,000

Overheads of service departments are reapportioned as below :

	P_1	P_2	S_1	S_2
S_1	40%	50%	-	10%
S_2	50%	40%	10%	-

A product 'Z' passes through all the two production departments – P_1 and P_2 and each unit of product remain there in process for 2 and 3 hours respectively. The material and labour cost of one unit of product 'Z' is ₹ 500 and ₹ 350 respectively.

The company run for all the 365 days of the year and 16 hours per day.

You are required:

(i) To make secondary distribution of overheads of service departments by applying Simultaneous Equation method and

(ii) Determine the total cost of one unit of product Z. ***(8 Marks)***

(b) A proposal to invest in a project, which has a useful life of 5 years and no salvage value at the end of useful life, is under consideration of a firm. It is anticipated that the project will generate a steady cash inflow of ₹ 70,000 per annum. After analyzing other facts of the project, following information were revealed:

Internal rate of return - 13%

Desirability factor - 1.07762

You are required to find out:

(i) Cost of project

(ii) Cost of capital

(iii) Payback period

(iv) Net present value

Present value factors at different rates are given as under:

Year	***10%***	***11%***	***12%***	***13%***
1	*0.909*	*0.901*	*0.893*	*0.885*
2	*0.826*	*0.812*	*0.797*	*0.783*

3	*0.751*	*0.731*	*0.712*	*0.693*
4	*0.683*	*0.659*	*0.636*	*0.613*
5	*0.621*	*0.593*	*0.567*	*0.543*
Total	***3.790***	***3.696***	***3.605***	***3.517***

Note: *Use only above present values to solve this question.* ***(8 Marks)***

Answer

(a) (i) Overheads of service cost centres Let S_1 be the overhead of service cost centre S_1 and S_2 be the overhead of service cost centre S_2.

$S_1 = 3,52,000 + 0.10\ S_2$

$S_2 = 33,000 + 0.10\ S_1$

Substituting the value of S_2 in S_1 we get

$S_1 = 3,52,000 + 0.10\ (33,000 + 0.10\ S_1)$

$S_1 = 3,52,000 + 3,300 + 0.01\ S_1$

$0.99\ S_1 = 3,55,300$

$\therefore\ S_1$ = ₹ 3,58,889

$\therefore\ S_2 = 33,000 + 0.10 \times 3,58,889$

= ₹68,889

Secondary Distribution Summary

Particulars	Total (₹)	P_1 (₹)	P_2 (₹)
Allocated and Apportioned over-heads as per primary distribution	6,95,000	4,02,000	2,93,000
S_1	3,58,889	1,43,556	1,79,445
S_2	68,889	34,445	27,556
		5,80,001	5,00,001

(ii) Working for Overhead rate per hour

	P_1	P_2
Total overheads cost (₹)	5,80,001	5,00,001
Production hours worked	5,840	5,840
Rate per hour (₹)	99.32	85.62

Calculation of per unit Total Cost of Product Z

	(₹)
Direct material	500.00
Direct labour	*350.00*
Prime cost	850.00
Production on overheads	
P_1 2 hours × ₹ 99.32 = 198.64	
P_2 3 hours × ₹ 85.62 = 256.86	455.50
Total cost	*1,305.50*

(b) (i) Cost of Project

Annual cash inflows = ₹ 70,000

Useful life = 5 years

Desirability factor = 1.07762

At 13% internal rate of return (IRR), the sum of total cash inflows = cost of the project i.e. initial cash outlay

Considering the discount factor table @ 13%, cumulative present value of cash inflows for 5 years is 3.517

Hence, Total Cash inflows for 5 years for the Project is

₹ 70,000 × 3.517 = ₹ 2,46,190

Hence, Cost of the Project = ₹ 2,46,190

(ii) Cost of Capital

$$\text{Profitability index} = \frac{\text{Sum of Discounted Cash inflows}}{\text{Cost of the Project}}$$

$$1.07762 = \frac{\text{Sum of Discounted Cash inflows}}{₹\ 2,46,190}$$

∴ Sum of Discounted Cash inflows = ₹ 2,65,300

Since, Annual Cash Inflows = ₹ 70,000

Hence, cumulative discount factor for 5 years = $\frac{\text{Rs. } 2,65,300}{\text{Rs. } 70,000} = 3.79$

From the discount factor table @ 10%, cumulative present value of cash inflows for 5 years is 3.79

Hence, Cost of Capital = 10%

(iii) **Payback Period**

$$\text{Payback period} = \frac{\text{Cost of the Project}}{\text{Annual Cash Inflows}} = \frac{₹\,2,46,190}{₹\,70,000} = 3.517 \text{ years}$$

(iv) **Net Present Value (NPV)**

NPV = Sum of Present Values of Cash inflows – Cost of the Project

= ₹ 2,65,300 – ₹ 2,46,190 = ₹ 19,110

Net Present Value = ₹ 19,110

Question 7

*Answer any **four** of the following:*

(a) Discuss cost classification based on variability and controllability.

(b) Describe the salient features of budget manual.

(c) State the different types of packing credit.

(d) (i) State distinct groups of variances that arise in standard costing.

(ii) Explain 'Sale and Lease Back.

(e) Why money in the future is worth-less than similar money today? Give reasons and explain. ***(4 x 4 = 16 Marks)***

Answer

(a) Cost classification based on variability

(a) **Fixed Costs** – These are the costs which are incurred for a period, and which, within certain output and turnover limits, tend to be unaffected by fluctuations in the levels of activity (output or turnover). They do not tend to increase or decrease with the changes in output. For example, rent, insurance of factory building etc., remain the same for different levels of production.

(b) **Variable Costs** – These costs tend to vary with the volume of activity. Any increase in the activity results in an increase in the variable cost and vice-versa. For example, cost of direct labour, etc.

(c) **Semi-variable Costs** – These costs contain both fixed and variable components and are thus partly affected by fluctuations in the level of activity. Examples of semi variable costs are telephone bills, gas and electricity etc.

Cost classification based on controllability

(a) **Controllable Costs** - Cost that can be controlled, typically by a cost, profit or investment centre manager is called controllable cost. Controllable costs incurred in

a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre. For example, direct costs comprising direct labour, direct material, direct expenses and some of the overheads are generally controllable by the shop level management.

(b) **Uncontrollable Costs** - Costs which cannot be influenced by the action of a specified member of an undertaking are known as uncontrollable costs. For example, expenditure incurred by, say, the tool room is controllable by the foreman in-charge of that section but the share of the tool-room expenditure which is apportioned to a machine shop is not to be controlled by the machine shop foreman.

(b) Salient features of Budget Manual

- Budget manual contains many information which are required for effective budgetary planning.
- A budget manual is a collection of documents that contains key information for those involved in the planning process.
- An introductory explanation of the budgetary planning and control process, including a statement of the budgetary objective and desired results is included in Budget Manual
- Budget Manual contains a form of organization chart to show who is responsible for the preparation of each functional budget and the way in which the budgets are interrelated.
- In contains a timetable for the preparation of each budget.
- Copies of all forms to be completed by those responsible for preparing budgets, with explanations concerning their completion is included in Budget Manual.
- A list of the organization's account codes, with full explanations of how to use them.
- Information concerning key assumptions to be made by managers in their budgets, e.g. rate of inflation etc.

(c) Different Types of Packing Credit

Packing credit may be of the following types:

(i) ***Clean Packing credit****:* This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a clean type of export advance. Each proposal is weighted according to particular requirements of the trade and credit worthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.

(ii) ***Packing credit against hypothecation of goods****:* Export finance is made available on certain terms and conditions where the exporter has pledgeable interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit alongwith the firm export order or letter of credit, relative stock statements and thereafter continue submitting them every fortnight and whenever there is any movement in stocks.

(iii) ***Packing credit against pledge of goods****:* Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.

(iv) ***E.C.G.C. guarantee:*** Any loan given to an exporter for the manufacture, processing, purchasing, or packing of goods meant for export against a firm order qualifies for the packing credit guarantee issued by Export Credit Guarantee Corporation.

(v) ***Forward exchange contract****:* Another requirement of packing credit facility is that if the export bill is to be drawn in a foreign currency, the exporter should enter into a forward exchange contact with the bank, thereby avoiding risk involved in a possible change in the rate of exchange.

(d) (i) Distinct groups of variances in standard costing:

The three distinct groups of variances that arise in standard costing are:

(i) Variances of efficiency. These are the variance, which arise due to efficiency or inefficiency in use of material, labour etc.

(ii) Variances of prices and rates: These are the variances, which arise due to changes in procurement price and standard price.

(iii) Variances due to volume: These represent the effect of difference between actual activity and standard level of activity.

(ii) Sale and Lease Back

It is arrangement under which an entity sells the asset to another party and simultaneously takes it back from the other party under a lease arrangement.

The important features of sale and lease back arrangement are:

(a) The lessee gets a lumpsum amount as sale consideration of the asset.

(b) The lessee continues to use the asset.

(e) Time Preference of money

Time value of money means that worth of a rupee received today is different from the worth of a rupee to be received in future. The preference of money now as compared to future money is known as time preference for money.

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

- Risk – there is uncertainty about the receipt of money in future.
- Preference for present consumption – Most of the persons and companies in general, prefer current consumption over future consumption.
- Inflation – In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year hence.
- 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 time for evaluating such cash flow an explicit consideration of time value of money is required.