

PAPER – 4 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

All questions are compulsory.

Working notes should form part of the answer.

Question 1

Answer any five of the following:

- (i) What are the main objectives of cost accounting?
- (ii) Discuss the treatment of over time premium in cost accounting.
- (iii) Explain controllable and non-controllable cost with examples.
- (iv) What are the main advantages of cost plus contract?
- (v) Discuss the difference between allocation and apportionment of overhead.
- (vi) Standard output in 10 hours is 240 units; actual output in 10 hours is 264 units. Wages rate is Rs. 10 per hour. Calculate the amount of bonus and total wages under Emerson Plan. (5 × 2 = 10 Marks)

Answer

- (i) The Main objectives of Cost Accounting are

1. Ascertainment of cost.
2. Determination of selling price.
3. Cost control and cost reduction.
4. Ascertaining the project of each activity.
5. Assisting management in decision-making.
6. Determination of break even point.

- (ii) Treatment of over time premium under Cost Accounting:

The overtime premium is treated as follows:

1. If the overtime is resorted to at the desire of the customer, then the overtime premium may be charged to the job directly.
2. If overtime is required to cope with general production or for meeting urgent orders, the overtime premium should be treated as overhead cost of the particular department or cost centre which works overtime.
3. If overtime is worked in a department due to fault of another department, the overtime premium should be charged to the latter department.

4. Overtime worked on account of abnormal conditions such as flood, earthquakes, civil disturbance etc. should not be charged to cost but to costing Profit and Loss Account.
- (iii) Controllable costs are those which can be influenced by the action of a specified member of an undertaking. A business organization is usually divided into a number of responsibility centres and each such centre is headed by an executive. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre. Direct costs comprising direct labour, direct materials, direct expenses and some of the overhead are generally controllable by the shop level management.
- Non-controllable costs are those which cannot be influenced by the action of a specified member of an undertaking. For example, expenditure incurred by the tool room is controllable by the tool room manager but the share of the tool room expense which is apportioned to the machine shop cannot be controlled by the machine shop manager. It is only in relation to a particular individual that a cost may be specified as controllable or not.
- Note: 1. A supervisor may be unable to control the amount of managerial remuneration allocated to his department but for the top management this would be a controllable cost.
2. Depreciation would be a non-controllable cost in the short-term but controllable in the long terms.
- (iv) Costs plus contracts have the following advantages:
1. The contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.
 2. It is useful especially when the work to be done is not definitely fixed at the time of making the estimate.
 3. Contractee can ensure himself about "the cost of the contract", as he is empowered to examine the books and document of the contractor to ascertain the veracity of the cost of the contract.
- (v) The following are the differences between allocation and apportionment.
1. Allocation costs are directly allocated to cost centre. Overhead which cannot be directly allocated are apportioned on some suitable basis.
 2. Allocation allots whole amount of cost to cost centre or cost unit where as apportionment allots part of cost to cost centre or cost unit.
 3. No basis required for allocation. Apportionment is made on the basis of area, assets value, number of workers etc.

(vi) Efficiency percentage = $\frac{264}{240} \times 100 = 110\%$

As per Emerson plan, in case of above 100% efficiency bonus of 20% of basic wages plus 1% for each 1% increase in efficiency is admissible.

So, new bonus percentage = 20 + (110 – 100) = 30

Total Bonus = $\frac{30}{100} (\text{hours worked} \times \text{rate per hour})$

= $\frac{30}{100} \times 10 \times 10 = \text{Rs. } 30$

Total wages = Rs. (10 × 10) + 30 = Rs. 130.

Question 2

TQM Ltd. has furnished the following information for the month ending 30th June, 2007:

	Master Budget	Actual	Variance
Units produced and sold	<u>80,000</u>	<u>72,000</u>	
Sales (Rs.)	<u>3,20,000</u>	<u>2,80,000</u>	40,000 (A)
Direct material (Rs.)	80,000	73,600	6,400 (F)
Direct wages (Rs.)	1,20,000	1,04,800	15,200 (F)
Variable overheads (Rs.)	40,000	37,600	2,400 (F)
Fixed overhead (Rs.)	<u>40,000</u>	<u>39,200</u>	800 (F)
Total Cost	<u>2,80,000</u>	<u>2,55,200</u>	

The Standard costs of the products are as follows:

	Per unit (Rs.)
Direct materials (1 kg. at the rate of Re. 1 per kg.)	1.00
Direct wages (1 hour at the rate of Rs. 1.50)	1.50
Variable overheads (1 hour at the rate of Re. .50)	0.50

Actual results for the month showed that 78,400 kg. of material were used and 70,400 labour hours were recorded.

Required:

- (i) Prepare Flexible budget for the month and compare with actual results.
- (ii) Calculate material, labour, sales price, variable overhead and fixed overhead expenditure variances and sales volume (profit) variance. (5 + 10 = 15 Marks)

Answer

(i) Statement showing flexible budget and its comparison with actual

	Master budget (80,000 units)	Flexible budget (at standard cost)	Actual for 72,000 units	Variance	
		Per unit	72,000 units		
A. Sales	3,20,000	4.00	2,88,000	2,80,000	8,000 (A)
B. Direct material	80,000	1.00	72,000	73,600	1,600 (A)
C. Direct wages	1,20,000	1.50	1,08,000	1,04,800	3,200 (F)
D. Variable overhead	40,000	0.50	36,000	37,600	1,600 (A)
E. Total variable cost	2,40,000	3.00	2,16,000	2,16,000	–
F. Contribution	80,000	1.00	72,000	64,000	–
G. Fixed overhead	40,000	0.50	40,000	39,200	800 (F)
H. Net profit	40,000	0.50	32,000	24,800	7,200 (A)

(ii) Variances:

- ◆ Sales price variance = Actual Quantity (Standard Rate – Actual Rate)
= 72,000 (4.00 – 3.89) = 8,000 (A)
- ◆ Direct Material Cost Variance = Standard Cost for actual output – Actual cost
= 72,000 – 73,600 = 1,600 (A)
- ◆ Direct Material Price Variance = Actual Quantity (Standard rate – Actual Rate)
= 78,400 $\left(1.00 - \left(\frac{73,600}{78,400}\right)\right)$ = 4,800 (F)
- ◆ Direct Material Usage Variance = Standard Rate (Standard Quantity – Actual Quantity)
= 1.0 (72,000 – 78,400) = 6,400 (A)
- ◆ Direct Labour Cost Variance = Standard Cost for actual output – Actual cost
= 1,08,000 – 1,04,800 = 3,200 (F)
- ◆ Direct Labour Rate Variance = Actual Hour (Standard Rate – Actual Rate)
= 70,400 $\left(1.5 - \left(\frac{1,04,800}{70,400}\right)\right)$ = 800 (F)

- ◆ Direct Labour Efficiency Variance = Standard Rate (Standard Hour – Actual Hour)
= 1.5 (72,000 – 70,400) = 2,400 (F)
- ◆ Variable Overhead = Recovered variable overhead – Actual variable overhead
= (72,000 × 0.50) – 37,600 = 1,600 (A)
- ◆ Fixed Overhead Expenditure Variance = Budgeted fixed overhead – Actual fixed overhead
= 40,000 – 39,200 = 800 (F)
- ◆ Sales Volume (Profit) Variance = Standard rate of profit
(Budgeted Quantity – Actual Quantity)
= .50 [80,000 – 72,000] = 4,000 (A)

Question 3

- (a) JK Ltd. produces a product "AZE", which passes through two processes, viz., process I and process II. The output of each process is treated as the raw material of the next process to which it is transferred and output of the second process is transferred to finished stock. The following data related to December, 2007:

	Process I	Process II
25,000 units introduced at a cost of	Rs. 2,00,000	–
Material consumed	Rs. 1,92,000	96,020
Direct labour	Rs. 2,24,000	1,28,000
Manufacturing expenses	Rs. 1,40,000	60,000
Normal wastage of input	10%	10%
Scrap value of normal wastage (per unit)	Rs. 9.90	8.60
Output in Units	22,000	20,000

Required:

- (i) Prepare Process I and Process II account.
 - (ii) Prepare Abnormal effective/wastage account as the case may be each process.
- (b) ZED Company supplies plastic crockery to fast food restaurants in metropolitan city. One of its products is a special bowl, disposable after initial use, for serving soups to its customers. Bowls are sold in pack 10 pieces at a price of Rs. 50 per pack.

The demand for plastic bowl has been forecasted at a fairly steady rate of 40,000 packs every year. The company purchases the bowl direct from manufacturer at Rs. 40 per pack within a three days lead time. The ordering and related cost is Rs. 8 per order. The storage cost is 10% per cent per annum of average inventory investment.

Required:

- (i) Calculate Economic Order Quantity.
- (ii) Calculate number of orders needed every year.
- (iii) Calculate the total cost of ordering and storage bowls for the year.
- (iv) Determine when should the next order to be placed. (Assuming that the company does maintain a safety stock and that the present inventory level is 333 packs with a year of 360 working days. (8 + 8 = 16 Marks)

Answer

(a)

Process I Account

Particulars	Units	Amount	Particulars	Units	Amount
		(in Rs.)			(in Rs.)
To Input	25,000	2,00,000	By Normal wastage	2,500	24,750
To Material		1,92,000	By Abnormal wastage	500	16,250
To Direct Labour		2,24,000	By Process II	22,000	7,15,000
To Manufacturing Exp.	_____	<u>1,40,000</u>		_____	_____
	<u>25,000</u>	<u>7,56,000</u>		<u>25,000</u>	<u>7,56,000</u>

$$\text{Cost per unit} = \frac{7,56,000 - 24,750}{25,000 - 2,500} = \text{Rs. 32.50 per unit}$$

Process II Account

Particulars	Units	Amount	Particulars	Units	Amount
		(in Rs.)			(in Rs.)
To Process I	22,000	7,15,000	By Normal wastage	2,200	18,920
To Material		96,020	By Finished stock	20,000	9,90,000
To Direct Labour		1,28,000			
To Manufacturing Exp.		60,000			
To Abnormal effect	<u>200</u>	<u>9,900</u>		_____	_____
	<u>22,200</u>	<u>10,08,920</u>		<u>22,200</u>	<u>10,08,920</u>

$$\text{Cost per unit} = \frac{9,99,020 - 18,920}{22,000 - 2,200} = \text{Rs. 49.50 per unit}$$

Abnormal Wastage Account

Particulars	Units	Amount (in Rs.)	Particulars	Units	Amount (in Rs.)
To Process I A/c	500	16,250	By Cash (Sales)	500	4,950
			By Costing Profit and Loss A/c		<u>11,300</u>
	<u>500</u>	<u>16,250</u>		<u>500</u>	<u>16,250</u>

Abnormal Effectives Account

Particulars	Unit	Amount (in Rs.)	Particulars	Units	Amount (in Rs.)
To Normal wastage	200	1,720	By Process II A/c	200	9,900
To Costing Profit and Loss		<u>8,180</u>			
	<u>200</u>	<u>9,900</u>		<u>200</u>	<u>9,900</u>

(b) (i) Economic Order Quantity

$$EOQ = \sqrt{\frac{2 \times C \times O}{U}}$$

$$= \sqrt{\frac{2 \times 40,000 \times 8}{4}}$$

$$= \sqrt{1,60,000} = 400 \text{ packs.}$$

(ii) Number of orders per year

$$\frac{\text{Annual requirements}}{\text{Economic order quantity}}$$

$$\frac{40,000}{400} = 100 \text{ order per year}$$

(iii) Ordering and storage costs

	Rs.
Ordering costs :- 100 orders × Rs. 8.00	800
Storage cost :- (400/2) × (10% of 40)	<u>800</u>
Total cost of ordering & storage	<u>1,600</u>

(iv) Timing of next order

(a) Day's requirement served by each order.

$$\begin{aligned} \text{Number of days requirements} &= \frac{\text{No. of working days}}{\text{No. of order in a year}} \\ &= \frac{360}{100} = 3.6 \text{ days supply} \end{aligned}$$

This implies that each order of 400 packs supplies for requirements of 3.6 days only.

- (b) Days requirement covered by inventory

$$\begin{aligned} &= \frac{\text{Units in inventory}}{\text{Economic order quantity}} \times (\text{Day requirement served by an order}) \\ \therefore \frac{333}{400} \times 3.6 \text{ days} &= 3 \text{ days requirement} \end{aligned}$$

- (c) Time interval for placing next order

Inventory left for day's requirement – Lead time of delivery

3 day's requirements – 3 days lead time = 0

This means that next order for the replenishment of supplies has to be placed immediately.

Question 4

Answer any three of the following:

- (i) Explain and illustrate cash break-even chart.
- (ii) Discuss ABC analysis as a technique of inventory control.
- (iii) Distinguish between Job evaluation and Merit rating.
- (iv) A company has fixed cost of Rs. 90,000, Sales Rs. 3,00,000 and Profit of Rs. 60,000.

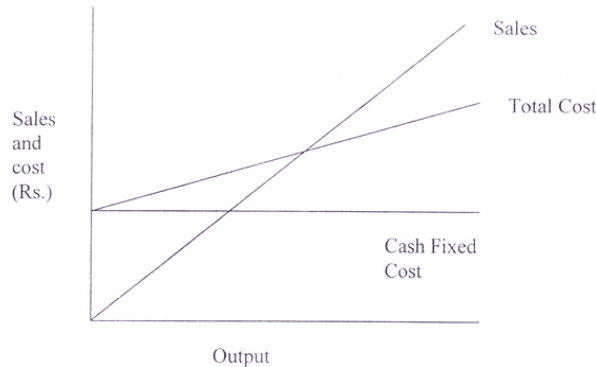
Required:

- (i) Sales volume if in the next period, the company suffered a loss of Rs. 30,000.
- (ii) What is the margin of safety for a profit of Rs. 90,000? (3 × 3 = 9 Marks)

Answer

- (i) In cash break-even chart, only cash fixed costs are considered. Non-cash items like depreciation etc. are excluded from the fixed cost for computation of break-even point. It depicts the level of output or sales at which the sales revenue will equal to total cash outflow. It is computed as under:

$$\text{Cash BEP (Units)} = \frac{\text{Cash Fixed Cost}}{\text{Cost per Units}}$$



Hence for example suppose insurance has been paid on 1st January, 2006 till 31st December, 2010 then this fixed cost will not be considered as a cash fixed cost for the period 1st January, 2008 to 31st December, 2009.

(ii) ABC Analysis as a technique of Inventory Control:

It is a system of inventory control. It exercises discriminating control over different items of stores classified on the basis of investment involved. Usually they are divided into three categories according to their importance, namely, their value and frequency of replenishment during a period.

'A' category of items consists of only a small percentage i.e. about 10% of total items handles by the stores but require heavy investment about 70% of inventory value, because of their high price or heavy requirement or both.

'B' category of items are relatively less important – 20% of the total items of material handled by stores and % of investment required is about 20% of total investment in inventories.

'C' category – 70% of total items handled and 10% of value.

For 'A' category items, stocks levels and EOQ are used and effective monitoring is done.

For 'B' category same tools as in 'A' category are applied.

For 'C' category of items, there is no need of exercising constant control. Orders for items in this group may be placed after 6 months or once in a year, after ascertaining consumption requirement.

(iii) Job Evaluation and Merit Rating:

- ◆ Job evaluation is the assessment of the relative worth of jobs within a company and merits rating are the assessment of the relative worth of the man behind the job.

- ◆ Job evaluation and its accomplishment are means to set up a rational wage and salary structure where as merits rating provides a scientific basis for determining fair wages for each worker based on his ability and performance.
- ◆ Job evaluation simplifies wage administration by bringing an uniformity in wage rates where as merits rating is used to determine fair rate of pay for different workers.

$$(iv) \text{ P/V ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \left(\frac{1,50,000}{3,00,000} \times 100 \right) = 50\%$$

- (i) If in the next period company suffered a loss of Rs. 30,000, then

$$\begin{aligned} \text{Contribution} &= \text{Fixed Cost} \pm \text{Profit} \\ &= \text{Rs. } 90,000 - \text{Rs. } 30,000 \text{ (as it is a loss)} \\ &= \text{Rs. } 60,000. \end{aligned}$$

$$\text{Then Sales} = \frac{\text{Contribution}}{\text{P/V ratio}} \text{ or } \frac{60,000}{.50} = \text{Rs. } 1,20,000.$$

So, there will be loss of Rs. 30,000 at sales of Rs. 1,20,000.

- (ii) Margin of safety = $\frac{\text{Profit}}{\text{PV ratio}}$ or $\frac{90,000}{.50} = \text{Rs. } 1,80,000.$

Alternative solution of this part:

$$\text{Break-even Sales} = \frac{\text{Fixed Cost}}{\text{PV Ratio}} = \frac{90,000}{.5} = \text{Rs. } 1,80,000$$

$$\begin{aligned} \text{Sales at profit of Rs. } 90,000 &= \frac{\text{Fixed Cost} + \text{Profit}}{\text{PV Ratio}} \\ &= \frac{90,000 + 90,000}{.5} \\ &= \frac{1,80,000}{.5} \\ &= \text{Rs. } 3,60,000. \end{aligned}$$

$$\begin{aligned} \text{Margin of Safety} &= \text{Sales} - \text{Break-even Sales} \\ &= 3,60,000 - 1,80,000 \\ &= \text{Rs. } 1,80,000. \end{aligned}$$

Question 5

Answer any five of the following:

- (i) Explain the relevance of time value of money in financial decisions.
- (ii) Discuss the features of Secured Premium Notes (SPNs).
- (iii) The following data relate to RT Ltd:

	Rs.
Earning before interest and tax (EBIT)	10,00,000
Fixed cost	20,00,000
Earning Before Tax (EBT)	8,00,000

Required: Calculate combined leverage

- (iv) Explain the concept of closed and open ended lease.
- (v) Discuss the advantages of preference share capital as an instrument of raising funds.
- (vi) Explain the principles of "Trading on equity". (5 × 2 = 10 Marks)

Answer

- (i) 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 problem involve cash flow accruing at different points of time for evaluating such cash flow an explicit consideration of time value of money is required.

- (ii) Secured premium notes is issued along with detachable warrant and is redeemable after a notified period of say 4 to 7 years. This is a kind of NCD attached with warrant. It was first introduced by Tisco, which issued the SPNs to existing shareholders on right basis. Subsequently the SPNs will be repaid in some number of equal instalments. The warrant

attached to SPNs gives the holder the right to apply for and get allotment of equity shares as per the conditions within the time period notified by the company.

(iii) Contribution:

$$C = S - V \text{ and}$$

$$\text{EBIT} = C - F$$

$$10,00,000 = C - 20,00,000$$

$$\therefore C = 30,00,000$$

$$\text{Operating leverage} = C / \text{EBIT} = 30,00,000/10,00,000 = 3 \text{ times}$$

$$\text{Financial leverage} = \text{EBIT}/\text{EBT} = 10,00,000/8,00,000 = 1.25 \text{ times}$$

$$\text{Combined leverage} = \text{OL} \times \text{FL} = 3 \times 1.25 = 3.75 \text{ times}$$

(iv) In the close-ended lease, the assets gets transferred to the lessor at the end of lease, the risk of obsolescence, residual values etc. remain with the lessor being the legal owner of the assets. In the open-ended lease, the lessee has the option of purchasing the assets at the end of lease period.

(v) Advantages of Issue of Preference Shares are:

(i) No dilution in EPS on enlarged capital base.

(ii) There is no risk of takeover as the preference shareholders do not have voting rights.

(iii) There is leveraging advantage as it bears a fixed charge.

(iv) The preference dividends are fixed and pre-decided. Preference shareholders do not participate in surplus profit as the ordinary shareholders

(v) Preference capital can be redeemed after a specified period.

(vi) The term trading on equity means debts are contracted and loans are raised mainly on the basis of equity capital. Those who provide debt have a limited share in the firm's earning and hence want to be protected in terms of earnings and values represented by equity capital. Since fixed charges do not vary with firms earning before interest and tax, a magnified effect is produced on earning per share. Whether the leverage is favourable, in the sense, increase in earning per share more proportionately to the increased earning before interest and tax, depends on the profitability of investment proposal. If the rate of returns on investment exceeds their explicit cost, financial leverage is said to be positive.

Question 6

The financial statement and operating results of PQR revealed the following position as on 31st March, 2006:

— Equity share capital (Rs. 10 fully paid share)	Rs. 20,00,000
— Working capital	Rs. 6,00,000
— Bank overdraft	Rs. 1,00,000
— Current ratio	2.5 : 1
— Liquidity ratio	1.5 : 1
— Proprietary ratio (Net fixed assets/Proprietary fund)	.75 : 1
— Cost of sales	Rs. 14,40,000
— Debtors velocity	2 months
— Stock turnover based on cost of sales	4 times
— Gross profit ratio	20% of sales
— Net profit ratio	15% of sales

Closing stock was 25% higher than the opening stock. There were also free reserves brought forward from earlier years. Current assets include stock, debtors and cash only. The current liabilities expect bank overdraft treated as creditors.

Expenses include depreciation of Rs. 90,000.

The following information was collected from the records for the year ended 31st March, 2007:

- Total sales for the year were 20% higher as compared to previous year.
- Balances as on 31st March, 2007 were : Stock Rs. 5,20,000, Creditors Rs. 4,15,000, Debtors Rs. 4,95,000 and Cash balance Rs. 3,10,000.
- Percentage of Gross profit on turnover has gone up from 20% to 25% and ratio of net profit to sales from 15% to 16%.
- A portions of Fixed assets was very old (book values Rs. 1,80,000) disposed for Rs. 90,000. (No depreciations to be provided on this item).
- Long-term investments were purchased for Rs. 2,96,600.
- Bank overdraft fully discharged.
- Percentage of depreciation to Fixed assets to be provided at the rate in the previous year.

Required:

- (i) Prepare Balance Sheet as on 31st March, 2006 and 31st March, 2007.
- (ii) Prepare the fund flow statement for the year ended 31st March, 2007. (15 Marks)

Answer

Balance Sheet

Liabilities	Rs.		Assets	Rs.	
	31 March 2006	31 March 2007		31 March 2006	31 March 2007
Equity share capital (Rs. 10 each fully paid)	20,00,000	20,00,000	Fixed Assets (Rs.18,90,000- Rs.90,000)	18,00,000	15,39,000
Reserve and Surplus (balancing)	1,30,000	1,30,000	Long term investment	—	2,96,600
Profit & Loss A/c (15% of sales)	2,70,000	6,15,600	Current Assets (Rs. 10,00,000)		
Current Liabilities			Stock	4,00,000	5,20,000
Bank Overdraft	1,00,000	—	Sundry Debtors	3,00,000	4,95,000
Creditors	3,00,000	4,15,000	Cash at Bank (Balancing)	3,00,000	3,10,000
Total	28,00,000	31,60,600	Total	28,00,000	31,60,600

Calculation for 31 March, 2006

(i) Calculation of Current Liabilities

Suppose that Current Liabilities = x, then current assets will be 2.5 x

Working capital = Current Assets – Current Liabilities

$$6,00,000 = 2.5x - x$$

$$x = 6,00,000 / 1.5 = \text{Rs. } 4,00,000 \text{ (C.L.)}$$

Other Current Liabilities = Current Liabilities – Bank Overdraft

$$\text{(Creditors)} \quad 4,00,000 - 1,00,000 = \text{Rs. } 3,00,000$$

$$\text{Current Assets} = 2.5 \times 4,00,000 = \text{Rs. } 10,00,000$$

(ii) Liquid Ratio = Liquid Assets / Current Liabilities or 1.5 = Liquid Assets / 4,00,000
= Rs.6,00,000

Liquid assets = Current Assets – Stock

$$6,00,000 = 10,00,000 - \text{Stock}$$

$$\text{So, Stock} = \text{Rs. } 4,00,000$$

(iii) Calculation of fixed assets: Fixed assets to proprietary fund is 0.75, working capital is therefore 0.25 of proprietary fund. So,

$$6,00,000 / 0.25 \times 0.75 = \text{Rs. } 18,00,000$$

(iv) Debtors = $2 / 12 \times \text{Sales}$

$$2 / 12 \times 18,00,000 = \text{Rs. } 3,00,000$$

(v) Sales = $(14,40,000 / 80) \times 100 = \text{Rs. } 18,00,000$

(vi) Net profit = 15% of Rs.18,00,000 = Rs. 2,70,000

Calculation for the year 31st March, 2007

(vii) Sales = $18,00,000 + (18,00,000 \times 0.2) = 21,60,000$

(viii) Calculation of fixed assets

	Rs.		Rs.
To Opening balance	18,00,000	By Banks (Sale)	90,000
		By Loss on sales of Fixed asset	90,000
		By P & L (Dep) (5% as in previous year)	81,000
		By Balance b/d	<u>15,39,000</u>
Total	<u>18,00,000</u>		<u>18,00,000</u>

(ix) Net profit for the year 2007, $16\% \times 21,60,000 = \text{Rs. } 3,45,600$

$$\text{Total Profit} = 2,70,000 + 3,45,600 = \text{Rs. } 6,15,600$$

Calculation of fund from operation:

Net profit for the year 2007	= Rs. 3,45,600
Add: Depreciation	Rs. 81,000
Loss on sale of assets	<u>Rs. 90,000</u> = <u>Rs. 1,71,000</u>
Total	= <u>Rs. 5,16,600</u>

Fund Flow Statement

	Rs.		Rs.
Fund from operation	5,16,600	Increase in WC	3,10,000
Sales of fixed assets	<u>90,000</u>	Pur. of investment	<u>2,96,600</u>
	<u>6,06,600</u>		<u>6,06,600</u>

Schedule of changing working capital

	31 March 2006	31 March 2007	Increase (+)	Decrease (-)
	Rs.	Rs.	Rs.	Rs.
A. Current Assets				
Stock	4,00,000	5,20,000	1,20,000	
Sundry debtors	3,00,000	4,95,000	1,95,000	
Cash at bank	3,00,000	3,10,000	10,000	
	<u>10,00,000</u>	<u>13,25,000</u>		
B. Current Liabilities				
Bank overdraft	1,00,000	—	1,00,000	
Sundry creditors	3,00,000	4,15,000		1,15,000
	<u>4,00,000</u>	<u>4,15,000</u>		
Working capital	6,00,000	9,10,000	—	
Increase in working capital	<u>3,10,000</u>	<u>—</u>	<u>—</u>	<u>3,10,000</u>
	<u>9,10,000</u>	<u>9,10,000</u>	<u>4,25,000</u>	<u>4,25,000</u>

Question 7

(a) ABC Ltd. wishes to raise additional finance of Rs. 20 lakhs for meeting its investment plans. The company has Rs.4,00,000 in the form of retained earnings available for investment purposes. The following are the further details:

- ◆ Debt equity ratio 25 : 75.
- ◆ Cost of debt at the rate of 10 percent (before tax) upto Rs. 2,00,000 and 13% (before tax) beyond that.
- ◆ Earning per share, Rs. 12.
- ◆ Dividend payout 50% of earnings.
- ◆ Expected growth rate in dividend 10%.
- ◆ Current market price per share, Rs.60.
- ◆ Company's tax rate is 30% and shareholder's personal tax rate is 20%.

Required:

- (i) Calculate the post tax average cost of additional debt.
- (ii) Calculate the cost of retained earnings and cost of equity.
- (iii) Calculate the overall weighted average (after tax) cost of additional finance.

(8 Marks)

(b) C Ltd. is considering investing in a project. The expected original investment in the project will be Rs. 2,00,000, the life of project will be 5 year with no salvage value. The

expected net cash inflows after depreciation but before tax during the life of the project will be as following:

Year	1	2	3	4	5
Rs.	85,000	1,00,000	80,000	80,000	40,000

The project will be depreciated at the rate of 20% on original cost. The company is subjected to 30% tax rate.

Required:

- (i) Calculate pay back period and average rate of return (ARR)
- (ii) Calculate net present value and net present value index, if cost of capital is 10%.
- (iii) Calculate internal rate of return.

Note: The P.V. factors are:

Year	P.V. at 10%	P.V. at 37%	P.V. at 38%	P.V. at 40%
1	.909	.730	.725	.714
2	.826	.533	.525	.510
3	.751	.389	.381	.364
4	.683	.284	.276	.260
5	.621	.207	.200	.186

(8 Marks)

Answer

(a) Pattern of raising capital	=	0.25 × 20,00,000
Debt	=	5,00,000
Equity	=	15,00,000
Equity fund (Rs. 15,00,000)		
Retained earning	=	Rs. 4,00,000
Equity (additional)	=	<u>Rs. 11,00,000</u>
Total	=	<u>Rs. 15,00,000</u>
Debt fund (Rs. 5,00,000)		
10% debt	=	Rs. 2,00,000
13% debt	=	<u>Rs. 3,00,000</u>
Total	=	<u>Rs. 5,00,000</u>

- (i) $K_d = \text{Total Interest} (1 - t) / \text{Rs. } 5,00,000$
 $= [20,000 + 39,000] (1 - 0.3) / 5,00,000 \text{ or } (41,300 / 5,00,000) \times 100 = 8.26\%$

(ii) $K_e = \text{EPS} \times \text{payout} / \text{mp} + g = 12 (50\%) / 60 \times 100 + 10\%$

$10\% + 10\% = 20\%$

$K_r = K_e (1 - \text{tp}) = 20(1 - 0.2) = 16\%$

(iii) Weighted average cost of capital

	Amount	After tax	Cost
Equity Capital	11,00,000	20.00%	2,20,000
Retained earning	4,00,000	16.00%	64,000
Debt	<u>5,00,000</u>	8.26%	<u>41,300</u>
Total	<u>20,00,000</u>		<u>3,25,300</u>

$K_o = (3,25,300 / 20,00,000) \times 100 = 16.27\%$

(b)

Project	Outflow					Rs. 2,00,000					
	Year	1	2	3	4	5					
		Rs.	Rs.	Rs.	Rs.	Rs.					
Profit after depreciation but before tax		85,000	1,00,000	80,000	80,000	40,000					
Tax (30 %)		25,500	30,000	24,000	24,000	12,000					
PAT		<u>59,500</u>	<u>70,000</u>	<u>56,000</u>	<u>56,000</u>	<u>28,000</u>					Average = Rs.53,900
Add: Dep		40,000	40,000	40,000	40,000	40,000					
Net cash inflow		<u>99,500</u>	<u>1,10,000</u>	<u>96,000</u>	<u>96,000</u>	<u>68,000</u>					Average = Rs.93,900.

Average = Rs.93,900

(i) Calculation of pay back period 1.91 years

(ii) Calculation of ARR

Initial investment	2,00,000	1,60,000	1,20,000	80,000	40,000	
Depreciation	40,000	40,000	40,000	40,000	40,000	
Closing investment	1,60,000	1,20,000	80,000	40,000	0	
Average investment	1,80,000	1,40,000	1,00,000	60,000	20,000	Average=1,00,000

$\text{ARR} = \text{Average of profit after tax} / \text{Average investment} = 53.90\%$

(iii) Calculation of net present Value 10%

Net cash inflow	99,500.00	1,10,000.00	96,000.00	96,000.00	68,000.00	
	0.909	0.826	0.751	0.683	0.621	
Present value	90,445.50	90,860.00	72,096.00	65,568.00	42,228.00	3,61,197.50

Net present value = Rs. 3,61,197.50 – Rs. 2,00,000 = Rs. 1,61,197.50

Net present value index = Rs. 1,61,197.50 / Rs. 2,00,000 = 0.81

(iv) Calculation of IRR

Present value factor-Initial investment / Average annual cash inflow

2,00,000 / 93,900 = 2.13

It lies in between 38 % and 40%

Net Cash Inflows	99,500.00	1,10,000.00	96,000.00	96,000.00	68,000.00	
Present Value Factor @ 38%	0.725	0.525	0.381	0.276	0.200	
Present value @ 38% (P1)	72,137.50	57,750.00	36,576.00	26,496.00	13,600.00	Total = 2,06,559.50
Net Cash Inflows	99,500.00	1,10,000.00	96,000.00	96,000.00	68,000.00	
Present Value Factor @ 40%	0.714	0.510	0.364	0.260	0.186	
Present value @ 40% (P2)	71,043	56,100	34,944	24,960	12,648	Total = 1,99,695

IRR is calculated by Interpolation:

$$\begin{aligned} \text{IRR} &= \text{LDR} + (\text{P1} - \text{Q}) / \text{P1} - \text{P2} (\text{SDR} - \text{LDR}) \\ &= 38 + (2,06,559.50 - 2,00,000) / (2,06,559.50 - 1,99,695) \times (40 - 38) \\ &= 39.911137\% \end{aligned}$$

Question 8

Answer any three of the following:

- (i) Explain the concept of Debt securitization.
- (ii) Explain briefly the functions of Treasury Department.
- (iii) Explain briefly the features of External Commercial Borrowings. (ECB)
- (iv) The Sales Manager of AB Limited suggests that if credit period is given for 1.5 months then sales may likely to increase by Rs. 1,20,000 per annum. Cost of sales amounted to 90% of sales. The risk of non-payment is 5%. Income tax rate is 30%. The expected return on investment is Rs. 3,375 (after tax). Should the company accept the suggestion of Sales Manager? (3 × 3 = 9 Marks)

Answer

(i) Debt securitization is a method of recycling of funds. It is especially beneficial to financial intermediaries to support the lending volumes. Assets generating steady cash flows are packaged together and against this assets pool, market securities can be issued. The debt securitization process can be classified in the following three functions.

1. The origination function: The credit worthiness of a borrower seeking loan from a finance company, bank, housing company or a leasing company is evaluated and a contract is entered into and repayment schedule is structured over the life of the loan.
2. The pooling function: Similar loans or receivables are clubbed together to create an underlying pool of assets. This pool is transferred in favour of a special purpose vehicle (SPV).
3. The securitization function: After structuring, issue the securities on the basis of asset pool. The securities carry a coupon and an expected maturity, which can be asset based or mortgaged based. These are generally sold to investors through merchant bankers.

The process of securitization is generally without recourse i.e. the investor bears credit risk or risk of default and the user is under an obligation to pay to investor only if the cash flow are received by him from the collateral.

(ii) The functions of treasury department management is to ensure proper usage, storage and risk management of liquid funds so as to ensure that the organisation is able to meet its obligations, collect its receivables and also maximize the return on its investments. Towards this end the treasury function may be divided into the following:

- (i) Cash Management: The efficient collection and payment of cash both inside the organization and to third parties is the functions of treasury department. Treasury will normally manage surplus funds in an investment portfolio.
- (ii) Currency Management: The Treasury Department manages the foreign currency risk exposer of the company.
- (iii) Funding Management: The Treasury Department is responsible for planning and sourcing the company short, medium and long term cash needs.
- (iv) Banking: Company maintains good relationship with its bankers. The Treasury Department carry out negotiations with bankers and act as the initial points of contact with them.
- (v) Corporate Finance: The Treasury department is involved with both acquisition and disinvestment activities with in the group.

(iii) An ECB is a loan taken from non-resident lenders in accordance with exchange control regulations. These loans can be taken from:

- ◆ International banks
- ◆ Capital markets
- ◆ Multilateral financial institutions like IFC, ADB, IBRD etc.
- ◆ Export Credit Agencies
- ◆ Foreign collaborators
- ◆ Foreign Equity Holders.

ECB can be accessed under automatic and approval routes depending upon the purpose and volume.

In automatic there is no need for any approval from RBI / Government while approval is required for areas such as textiles and steel sectors restructuring packages.

(iv) Profitability on additional sales:

	Rs.
Increase in sales	1,20,000
Less: Cost of sales (90% sales)	1,08,000
Less: Bad debt losses (5% of sales)	<u>6,000</u>
Net profit before tax	<u>6,000</u>
Less: Income tax (30%)	<u>1,800</u>
	<u>4,200</u>

Net profit after tax Rs. 4,200 on additional sales is higher than expected return. Hence, proposal should be accepted.