PAPER – 3 : 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

Answer the following:

(a) *AK Limited produces and sells a single product. Sales budget for calendar year 2012 by a quarters is as under:*

Quarters	*I*	*II*	*III*	*IV*
No. of units to be sold	*18,000*	*22,000*	*25,000*	*27,000*

The year is expected to open with an inventory of 6,000 units of finished products and close with inventory of 8,000 units. Production is customarily scheduled to provide for 70% of the current quarter's sales demand plus 30% of the following quarter demand. The budgeted selling price per unit is ₹40 . The standard cost details for one unit of the product are as follows:

Variable Cost ₹34.50 per unit

Fixed Overheads ₹2 hours 30 minutes @₹2 per hour based on a budgeted production volume of 1,10,000 direct labour hours for the year. Fixed overheads are evenly distributed through-out the year.

You are required to:

(i) Prepare Quarterly Production Budget for the year.

(ii) In which quarter of the year, company expected to achieve bread-even point.

(b) *A Machine costing ₹10 lacs was purchased on 1-4-2011. the expected life of the machine is 10 years. At the end of this period its scrap value is likely to be ₹10,000. the total cost of all the machines including new one was ₹90 lacs.*

The other information is given as follows:

(i) Working hours of the machine for the year was 4,200 including 200 non-productive hours.

(ii) Repairs and maintenance for the new machine during the year was ₹5,000.

(iii) Insurance Premium was paid for all the machine ₹9,000.

(iv) New machine consumes 8 units of electricity per hour, the rate per unit being ₹3.75

(v) The new machine occupies area of the department. Rent of the department is 2,400 per month.

(vi) Depreciation is charged on straight line basis

Compute machine hour rate for the new machine.

(c) RES Ltd. is an all equity financed company with a market value of ₹ 25,00,000 and cost of equity K_e = 21%. The company wants to buyback equity shares worth ₹ 5,00,000 by issuing and raising 15% perpetual debt of the same amount. Rate of tax may be taken as 30%. After the capital restructuring and applying MM Model (with taxes), you are required to calculate:

(i) Market value of RES Ltd.

(ii) Cost of Equity K_e

(iii) Weighted average cost of capital and comment on it.

(d) A company is presently having credit sales of ₹ 12 lakh. The existing credit terms are 1/10, net 45 days and average collection period is 30 days. The current bad debts loss is 1.5%. In order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit terms to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sales, bad debts increase to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 percent (pre-tax). 50 per cent and 80 percent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%.

Should the company change its credit terms? (Assume 360 days in a year).

(4 × 5 = 20 Marks)

Answer

(a) (i) Production Budget for the year 2012 by Quarters

		I	II	III	IV	Total
	Sales demand(Unit)	18,000	22,000	25,000	27,000	92,000
I	Opening Stock	6,000	7,200	8,100	8,700	30,000
II	70% of Current Quarter 's Demand	12,600	15,400	17,500	18,900	64,400
III	30% of Following Quarter's Demand	6,600	7,500	8,100	7,400*	29,600
IV	Total Production(II &III)	19,200	22,900	25,600	26,300	94,000
V	Closing Stock (I+IV-Sales)	7,200	8,100	8,700	8,000	32,000

*Balancing Figure

(ii) Break Even Point = Fixed Cost/ PV Ratio

=220000/13.75% = 1600000 or 40000 units.

P/V Ratio = (40 - 34.50 = 5.50)/40 × 100 =13.75%

(Or, Break Even Point= Fixed Cost/ Contribution = 2,20,000/5.50 = 40,000 Units)

Total sales in the quarter II is 40000 equal to BEP means BEP achieved in II quarter.

(b) Computation of machine hour rate of new Machine

	Total (₹)	Per hour(₹)
A. Standing Charges		
I. Insurance Premium 9000 x $\frac{1}{9}$	1,000	
II. Rent $\frac{1}{10}$ x2400x12	2,880	
	3,880	0.97*
B. Machine expenses		
I. Repairs and Maintenance [5,000/4,000]		1.25
II. Depreciation $\left[\frac{10,00,000 - 10,000}{10 \times 4,000}\right]$		24.75
III. Electricity 8 units x ₹ 3.75		30.00
Machine hour rate		56.97

Working Note

1 Calculation of productive Machine hour rate

Total hours	4,200
Less: Non-Productive hours	200
	4,000

* 3,880/ 4000 = 0.97

(c) Computation of Market Value, Cost of Equity and WACC of RES Ltd.

Market Value of Equity = 25,00,000

K_e =21%

$\frac{\text{Net income (NI) for equity - holders}}{K_e}$ = Market Value of Equity

$$\frac{\text{Net income (NI) for equity holders}}{0.21} = 25,00,000$$

Net income for equity holders = 5,25,000

EBIT= 5,25,000/0.7= 7,50,000

	All Equity	*Debt and Equity*
EBIT	7,50,000	7,50,000
Interest to debt-holders	-	75,000
EBT	7,50,000	6,75,000
Taxes (30%)	2,25,000	2,02,500
Income available to equity shareholders	5,25,000	4,72,500
Income to debt holders plus income available to shareholders	5,25,000	5,47,500

Present value of tax-shield benefits = ₹ 5,00,000 x 0.30 = 1,50,000

(i) Value of Restructured firm

= 25,00,000 + 1,50,000 = 26,50,000

(ii) Cost of Equity (K_e)

Total Value = 26,50,000

Less: Value of Debt = 5,00,000

Value of Equity = 21,50,000

$K_e = \frac{4,72,500}{21,50,000} = 0.219 = 22\%$

(iii) WACC

Cost of Debt (after tax)= 15% (1- 0.3)= 0.15 (0.70) = 0.105= 10.5%

Components of Costs	*Amount*	*Cost of Capital*	*Weight*	*Weighted COC*
Equity	21,50,000	0.22	0.81	0.178
Debt	5,00,000	0.105	0.19	0.020
	26,50,000			0.198

WACC = 19.8%

Comment: At present the company is all equity financed. So, Ke = Ko i.e. 21%. However after restructuring, the Ko would be reduced to 19.81% and Ke would increase from 21% to 21.98%. Reduction in Ko and increase in Ke is good for the health of the company.

(d) Evaluation of Credit Policy

Working Notes:

(i) Calculation of Cash Discount

Cash Discount = Total credit sales × % of customers who take up discount × Rate

Present Policy = $\frac{12,00,000 \times 50 \times .01}{100}$ = ₹ 6,000

Proposed Policy = 16,00,000 × 0.80 × 0.02 = ₹ 25,600

(Ii) Opportunity Cost of Investment in Receivables

Present Policy = 9,36,000 × (30/360) × (70% of 15)/100 = 78,000 × 10.5/100 = ₹ 8,190

Proposed Policy = 12,48,000 × (20/360) × 10.50/100 = ₹ 7,280

Statement showing Evaluation of Credit Policies

Particulars	*Present Policy*	*Proposed Policy*
Credit Sales	12,00,000	16,00,000
Variable Cost @ 78% of sales	9,36,000	12,48,000
Bad Debts @ 1.5% and 2%	18,000	32,000
Cash Discount	6,000	25,600
Profit before tax	2,40,000	2,94,400
Tax @ 30%	72,000	88,320
Profit after Tax	1,68,000	2,06,080
Opportunity Cost of Investment in Receivables	8,190	7,280
Net Profit	1,59,810	1,98,800

Advise: Proposed policy should be adopted since the net benefit is increased by (₹ 1,98,800 - 1,59,810) ₹ 38,990.

[Note: Opportunity cost of investment in receivables can be computed alternatively taking contribution @ 22 percent into consideration. The net benefit then would change accordingly to ₹ 1,95,137.]

Question 2

(a) A contractor commenced a contract on 1-7-2011. The costing records concerning the said contract reveal the following information as on 31-32012.

	Amount (₹)
Material sent to site	*7,74,300*
Labour paid	*10,79,000*
Labour outstanding as on 31-3-2012	*1,02,500*
Salary to Engineer	*20,500 per month*
Cost of plant sent to site (1-7-2011)	*7,71,000*
Salary to Supervisor (3/4 time devoted to contract)	*9,000 per month*
Administration & other expenses	*4,60,600*
Prepaid Administration expenses	*10,000*
Material in hand at site as on 31-3-2012	*75,800*

Plant used for the contract has an estimated life of 7 years with residual value at the end of life ₹ 50,000. Some of material costing ₹ 13,500 was found unsuitable and sold for ₹ 10,000. Contract price was ₹ 45,00,000. On 31-3-2012 two third of the contract was completed. The architect issued certificate covering 50% of the contract price and contractor has been paid ₹ 20,00,000 on account. Depreciation on plant is charged on straight line basis.

Prepare Contract Account. *(8 Marks)*

(b) The Balance Sheet of X Ltd. as on 31-3-2011 and 31-3-2012 are as under:

Liabilities	*2011*	*2012*	*Assets*	*2011*	*2012*
Equity Share capital (₹ 10 each)	*18,00,000*	*22,00,000*	*Fixed Assets (Including machine)*	*20,50,000*	*18,75,000*
General Reserve	*7,50,000*	*6,00,000*	*Stock*	*7,10,000*	*8,95,000*
Security premium	*50,000*	*45,000*	*Debtors*	*7,25,000*	*9,80,000*
Profit & Loss A/c	*4,50,000*	*5,30,000*	*Cash Balance*	*1,25,000*	*1,80,000*
7% Debentures	*3,00,000*	*2,00,000*	*Preliminary Expense*	*35,000*	*25,000*
Creditors	*1,50,000*	*2,15,000*			
Provision for tax	*1,45,000*	*1,65,000*			
	36,45,000	*39,55,000*		*36,45,000*	*39,55,000*

Additional Information:

(i) Depreciation charged on fixed assets during the year was ₹ 2,05,000. An old machine costing ₹ 2,00,000 (WDV ₹ 80,000) was sold for ₹ 65,000 during the year.

(ii) Provisions for tax made during the year for ₹ 1,78,000.

(iii) On 1-4-2011 company redeemed debentures of ₹ 1,00,000 at a premium of 5%.

(iv) Company has issued fully paid bonus shares of ₹ 2,00,000 by capitalization of profit.

Prepare Cash Flow Statement. *(8 Marks)*

Answer

(a) Contract Account

(For the period 1.7.11 to 31.3.12)

Particulars	Amount	Particulars	Amount
	₹		₹
To Material Issued	7,74,300	By Material (Sold)	10,000
To Labour 10,79,000		By P&L A/c (Loss)	
Add: Outstanding 1,02,500	11,81,500	(13,500-10,000)	3,500
To Salary to engineer (20,500 x 9)	1,84,500	By Material in hand	75,800
To Salary to Supervisor $9000 \times \frac{3}{4} \times 9$	60,750	By Cost of Contract c/d	26,39,600
To Administration & other expenses 4,60,600			
Less: Prepaid 10,000	4,50,600		
To Depreciation on Plant (Working Note 1)	77,250		
	27,28,900		27,28,900
To Cost of Contract b/d	26,39,600	By work-in Progress:	
To Notional Profit c/d	2,70,300	-Work certified 50% of 45,00,000	22,50,000
		-Work uncertified (W.N.-2) (26,39,600-19,79,700)	6,59,900
	29,09,900		29,09,900
To P&L A/c(W.N.3)	1,60,178	By Notional Profit b/d	2,70,300
To Reserve	1,10,122		
	2,70,300		2,70,300

Working Note

1. Calculation of depreciation on Plant

Cost of the Plant	7,71,000
Less: Residual Value	50,000
	7,21,000
Estimated life	7 Years
Depreciation per annum	1,03,000

Depreciation for 9 months

$$= \frac{1,03,000}{12} \times 9 = 77,250$$

2. Cost of work uncertified = Cost incurred to date minus 50% of the total cost of contract

= ₹26,39,600(figure already shown in the contract A/c) - ₹19,79,700

= ₹6,59,900

3. Calculation of Profit to be transferred

$$\frac{2}{3} \times 2,70,300 \times \frac{20,00,000}{22,50,000} = 1,60,178$$

(b) Cash flow Statement of X Ltd. for the year ending 31.03.2012

(A)	Cash flow from Operating Activities :	(₹)	(₹)
	Net Profit before Tax (80,000 + 50,000 + 1,78,000)	3,08,000	
	Add : Depreciation	2,05,000	
	Loss on Sale of Machine	15,000	
	Interest Paid on Debentures	14,000	
	Preliminary Expenses written off	10,000	
	Cash flow before working capital adjustments	5,52,000	
	(-) Increase in Stock	(1,85,000)	
	(-) Increase in Debtors	(2,55,000)	
	(+) Increase in Creditors	65,000	
	Cash flow from Operating Activities	1,77,000	

	Less : Tax paid	(1,58,000)	19,000
(B)	Cash flow from Investing Activities		
	Sale of Machine	65,000	
	Purchase of Fixed Assets	(1,10,000)	
	Net cash used in Investing activities		(45,000)
(C)	Cash flow from Financing activities		
	Issue of Equity Shares	2,00,000	
	Redemption of Debentures	(1,05,000)	
	Interest paid on Debentures	(14,000)	
	Net cash used in Financing Activities		81,000
	Net Increase in Cash and Cash Equivalent during year		55,000
	Add : Opening Balance of Cash		1,25,000
	Closing Balance of Cash		1,80,000

Working Notes :

Fixed Assets Account

To Balance b/d	20,50,000	By Bank	65,000
To Bank	1,10,000	By P&L a/c	15,000
		By Depreciation a/c	2,05,000
		By Balance c/d	18,75,000
	21,60,000		21,60,000

Provision for Tax

To Balance b/d	1,58,000	By balance c/d	1,45,000
To Bank	1,65,000	By P & L a/c	1,78,000
	3,23,000		3,23,000

General Reserve A/c

To Equity share capital a/c	2,00,000	By Balance b/d	7,50,000
To Balance c/d	6,00,000	By P & L a/c	50,000
	8,00,000		8,00,000

Question 3

(a) The management of a company wants to formulate an incentive plan for the workers with a view to increase productivity. The following particulars have been extracted from the books of company:

Piece Wage rate ₹10

Weekly working hours 40

Hourly wages rate ₹40 (guaranteed)

Standard/normal time per unit 15 minutes.

Actual output for a week:

Worker A	*176 pieces*
Worker B	*140 pieces*

Differential piece rate: 80% of piece rate when output below normal and 120% of piece rate when output above normal.

Under Halsey scheme, worker gets a bonus equal to 50% of Wages of time saved.

Calculate:

(i) Earning of workers under Halsey's and Rowan's premium scheme.

(ii) Earning of workers under Taylor's differential piece rate system and Emerson's efficiency plan. *(8 Marks)*

(b) STN Ltd. is a readymade garment manufacturing company. Its production cycle indicates that materials are introduced in the beginning of the production phase; wages and overhead accrue evenly throughout the period of cycle. The following figures for the 12 months ending 31st December 2011 are given.

Production of shirts	*54,000 units*
Selling price per unit	*₹200*
Duration of the production cycle	*1 month*
Raw material inventory held	*2 month's consumption*
Finished goods stock held for	*1 month*

Credit allowed to debtors is 1.5 months and credit allowed by creditors is 1 month.

Wages are paid in the next month following the month of accrual.

In the work-in-progress 50% of wages and overheads are supposed to be conversion costs.

The ratios of cost to sales price are-raw materials 60% direct wages 10% and overheads 20%. Cash is to be held to the extent of 40% of current liabilities and safety margin of 15% will be maintained.

Calculate amount of working capital required for the company on a cash cost basis.

(8 Marks)

Answer

(a) Calculation of earnings for workers under different incentive plans:

		Worker – A	Worker – B
(i)	Halsey's Premium Plan:		
	Actual time taken	40 hours	40 hours
	Standard time for actual Production	$\frac{176 \text{ Pcs} \times 15 \text{ Min.}}{60 \text{ Min.}}$ = 44 hours	$\frac{140 \text{ Pcs} \times 15 \text{ Min.}}{60 \text{ Min.}}$ = 35 hours
	Minimum Wages	40 hours x ₹ 40 = ₹ 1600	40 hours x ₹ 40 = ₹ 1600
	Bonus	50% (44-40) x ₹40 = ₹ 80	No bonus
	Earning	₹ 1680	₹ 1600
	Rowan's Premium Plan:		
	Minimum Wages (as above)	₹ 1600	₹ 1600
	Bonus	$\frac{4}{44} \times 40 \times$ ₹ 40 = ₹ 145.45	No bonus
	Earning	₹ 1745.45	₹ 1600
(ii)	Taylor's differential Piece rate		
	Efficiency	$\frac{176}{160} \times 100$ = 110%	$\frac{140}{160} \times 100$ = 87.5%
	Earning	₹10x120%x176 Pcs = ₹ 2112	₹10x80%x140Pcs ₹ 1120
	Emerson's efficiency Plan		
	Time Wages	₹ 40x40 hours = 1600	₹ 40x40 hours = 1600
	Bonus	(20%+10%) of (40x40) = 480	20% of 1600 = 320
	Earning	₹ 2080	₹ 1920

(b) Computation of Amount of Working Capital required on a Cash Cost basis

Working Notes:

1. Raw material inventory: The cost of materials for the whole year is 60% of the Sales value.

   Hence it is 54,000 units x ₹ 200 x $\frac{60}{100}$ = ₹ 64,80,000. The monthly consumption of raw material would be ₹ 5,40,000. Raw material requirements would be for two months; hence raw materials in stock would be ₹ 10,80,000.

2. Debtors: Total Cash Cost of Sales = 97,20,000 x $\frac{1.5}{12}$ = ₹ 12,15,000

3. Work-in-process: (Each unit of production is expected to be in process for one month).

		₹
(a)	Raw materials in work-in-process (being one month's raw material requirements)	5,40,000
(b)	Labour costs in work-in-process (It is stated that it accrues evenly during the month. Thus, on the first day of each month it would be zero and on the last day of month the work-in-process would include one month's labour costs. On an average therefore, it would be equivalent to ½ of the month's labour costs)	45,000
(c)	Overheads (For ½ month as explained above) Total work-in-process	90,000 6,75,000

4. Finished goods inventory:

	(1 month's cost of production)	
	Raw materials	5,40,000
	Labour	90,000
	Overheads	1,80,000
		8,10,000

5. Creditors: Suppliers allow a one month's credit period. Hence, the average amount of creditors would be ₹ 5,40,000 being one month's purchase of raw materials.

6. Direct Wages payable: The direct wages for the whole year is 54,000 units ´ ₹ 200 x 10% = 10,80,000. The monthly direct wages would be 90,000 (10,80,000 ÷12). Hence, wages payable would be ₹ 90,000.

Statement of Working Capital Required

	₹	₹
Current Assets		
Raw materials inventory (Refer to working note 1)	10,80,000	
Debtors (Refer to working note 2)	12,15,000	
Working–in-process (Refer to working note 3)	6,75,000	
Finished goods inventory (Refer to working note 4)	8,10,000	
Cash	2,52,000	40,32,000
Current Liabilities		
Creditors (Refer to working note 5)	5,40,000	
Direct wages payable (Refer to working note 6)	90,000	6,30,000
Estimated working capital requirements (before safety margin of 15%)		34,02,000
Add: Safety margin of 15%		5,10,300
Estimated Working Capital Requirements		39,12,300

Question 4

(a) SJ Ltd. has furnished the following information:

Standard overhead absorption rate per unit	*₹ 20*
Standard rate per hour	*₹ 4*
Budgeted production	*15,000 units*
Actual production	*15,560 units*
Actual overheads were ₹ 2,95,000 out of which ₹ 62,500 fixed .	
Actual hours	*74,000*

Overheads are based on the following flexible budget

Production (units)	*8,000*	*10,000*	*14,000*
Total Overheads (₹)	*1,80,000*	*2,10,000*	*2,70,000*

You are required to calculate the following overhead variances (on hour's basis) with appropriate workings:

(i) Variable overhead efficiency and expenditure variance

(ii) Fixed overhead efficiency and capacity variance. *(8 Marks)*

(b) ANP Ltd. is providing the following information:

Annual cost of saving	*₹96,000*
Useful life	*5 years*
Salvage value	*zero*
Internal rate of return	*15%*
Profitability index	*1.05*

Table of discount factor:

Discount factor	*Years*					
	1	*2*	*3*	*4*	*5*	*Total*
15%	*0.870*	*0.756*	*0.658*	*0.572*	*0.497*	*3.353*
14%	*0.877*	*0.769*	*0.675*	*0.592*	*0.519*	*3.432*
13%	*0.886*	*0.783*	*0.693*	*0.614*	*0.544*	*3.52*

You are required to calculate:

(i) Cost of the project

(ii) Payback period

(iii) Net present value of cash inflow

(iv) Cost of capital. *(8 Marks)*

Answer

(a) Workings:

(a) Variable overhead rate per unit

= Difference in total overheads at two levels/ Difference in out- put at two level

= (2,70,000 - 2,10,000) /(14,000-10,000) = 60,000/ 4,000 = ₹ 15 per unit

(b) Fixed overhead = 2,70,000 - (14000 ´ 15) = ₹60,000

(c) Standard Fixed Overhead Rate Per Hour = 4-3 = 1

(d) Standard Hour Per Unit = Standard hours rate per unit / standard overhead rate per hour

= 20/4 = 5 hours

(e) Actual Variable Overhead = 2,95,000 – 62,500= 2,32,000

(f) Actual Variable Overhead Per Hour = 2,32,500/74,000= 3.1419

(g) Budgeted hours = 15,000 ´ 5 = 75,000 hours

(h) Standard variable overhead rate per hour

= Variable overheads/budgeted hours =15,000 ´ 15 / 75,000 = ₹3.00 per hour

(i) Standard Hours for Actual Production= 15,560 ´ 5 = 77,800 hours

(i) Variable Overhead efficiency and expenditure Variance:

Variable overhead efficiency variance = Standard Rate Per Hour (Std. Hours – Actual Hours)

= 3 (77,800 - 74,000)= 11,400 (F)

Variable overhead expenditure variance = Actual Hours (Std.Rate Per Hour-Actual Rate Per Hour)

= 74,000 (3-3.1419)= 10,500 (A)

(ii) Fixed overhead efficiency and expenditure variance:

Fixed overhead efficiency variance = Std.Rate Per Hour (Std.Hours-Actual Hours)

= 1(77,800-74,000)= 3800(F)

Fixed overheads Capacity variance = Std. Rate Per Hour(Actual Hours-Budgeted Hours)

= 1(74,000 – 75,000)

= 74,000 - 75,000 = 1000 A

Standard Fixed overhead rate per hour is calculated with the help of budgeted hours and the Fixed overhead efficiency and expenditure variance is calculated as follows:

Standard fixed overhead rate per hour

= Fixed overheads/budgeted hours= 60,000 / 75,000 = ₹0.80 per hour

(ii) Fixed overhead efficiency and capacity variance

Fixed overhead efficiency Variance*= Std. Rate per hour (Std. hours - Actual hours)

= ₹0.80 (15,560 x5 - 74,000) = ₹3,040 (F)

Fixed overhead capacity variance*= Std. Rate per hour (Actual hours- Budgeted hours)

= ₹0.80 (74,000-15000 x 5) = ₹800 (A)

(b) (i) Cost of Project

At 15% internal rate of return (IRR), the sum of total cash inflows = cost of the project i.e initial cash outlay

Annual cost savings = ₹ 96,000

Useful life = 5 years

Considering the discount factor table @ 15%, cumulative present value of cash inflows for 5 years is 3.353

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

96,000 x 3.353 = ₹ 3,21,888

Hence, **Cost of the Project = ₹ 3,21,888**

(ii) **Payback Period**

$$\text{Payback period} = \frac{\text{Cost of the Project}}{\text{Annual Cost Savings}} = \frac{₹\ 3,21,888}{96,000}$$

Payback Period = 3.353 years

(iii) **Net Present Value (NPV)**

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

= ₹ 3,37,982.40 – 3,21,888 = ₹ 16,094.40

Net Present Value = ₹ 16,094.40

(iv) **Cost of Capital**

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

$$1.05 = \frac{\text{Sum of Discounted Cash inflows}}{3,21,888}$$

\ Sum of Discounted Cash inflows = ₹ 3,37,982.40

Since, Annual Cost Saving = ₹ 96,000

$$\text{Hence, cumulative discount factor for 5 years} = \frac{₹\ 3,37,982.40}{96,000}$$

From the discount factor table, at discount rate of 13%, the cumulative discount factor for 5 years is 3.52

Hence, **Cost of Capital = 13%**

Question 5

(a) What is an Integrated Accounting System? State its advantages.

(b) State the types of cost in the following cases:

(i) Interest paid on own capital not involving any cash outflow.

(ii) Withdrawing money from bank deposit for the purpose of purchasing new machine for expansion purpose.

(iii) Rent paid for the factory building which is temporarily closed

(iv) Cost associated with the acquisition and conversion of material into finished product.

(c) Discuss factors that a venture capitalist should consider before financing any risky project.

(d) What is Net Operating income theory of capital structure? Explain the assumptions on which the NOI theory is based. *(4 × 4 = 16 Marks)*

Answer

Integrated Accounts is the name given to a system of accounting, whereby cost and financial accounts are kept in the same set of books. There will be no separate sets of books for Costing and Financial records. Integrated accounts provide or meet out fully the information requirement for Costing as well as for Financial Accounts.

Advantages: The main advantages of Integrated Accounts are as follows:

(a) *No need for Reconciliation*- The question of reconciling costing profit and financial profit does not arise, as there is one figure of profit only.

(b) *Less efforts*- Due to use of one set of books, there is a significant extent of saving in efforts made.

(c) *Less Time consuming*- No delay is caused in obtaining information as it is provided from books of original entry.

(d) *Economical process*- It is economical also as it is based on the concept of "Centralisation of Accounting function".

(b) Type of costs

(i) Imputed Cost

(ii) Opportunity Cost

(iii) Shut Down Cost

(iv) Product Cost

(c) Factors to be considered by a Venture Capitalist before Financing any Risky Project

(i) Quality of the management team is a very important factor to be considered. They are required to show a high level of commitment to the project.

(ii) The technical ability of the team is also vital. They should be able to develop and produce a new product / service.

(iii) Technical feasibility of the new product / service should be considered.

(iv) Since the risk involved in investing in the company is quite high, venture capitalists should ensure that the prospects for future profits compensate for the risk.

(v) A research must be carried out to ensure that there is a market for the new product.

(vi) The venture capitalist himself should have the capacity to bear risk or loss, if the project fails.

(vii) The venture capitalist should try to establish a number of exist routes.

(viii) In case of companies, venture capitalist can seek for a place on the Board of Directors to have a say on all significant matters affecting the business.

(Note: Students may answer any four of the above factors)

(d) Net Operating Income (NOI) Theory of Capital Structure

According to this approach, there is no relationship between the cost of capital and value of the firm. The value of the firm is independent of the capital structure of the firm.

Assumptions of NOI Approach

(a) There are no taxes.

(b) The market capitalizes the value of the firm as a whole. Thus the split between debt and equity is not important.

(c) The increase in proportion of debt in capital structure leads to change in risk perception of the shareholders i.e. increase in cost of equity (Ke). The increase in cost of equity is such as completely offset the benefits of using cheaper debt.

(d) The overall cost of capital remains same for all degrees of debt equity mix.

Question 6

(a) A product passes through two processes A and B. During the year 2011, the input to process A of basic raw material was 8,000 units @ ₹ 9 per unit. Other information for the year is a s follows:

	Process A	*Process B*
Output units	*7,500*	*4,800*
Normal loss (% to input)	*5%*	*10%*
Scrap value per unit (₹)	*2*	*10*
Direct wages (₹)	*12,000*	*24,000*
Direct expenses (₹)	*6,000*	*5,000*
Selling price per unit (₹)	*15*	*25*

Total overheads ₹17,400 were recovered as percentage of direct wages. Selling expenses were ₹5,000. There are not allocate to the processes. 2/3 of the output of Process A was passed on to the next process and the balance was sold.The entire output of Process B was sold.

Prepare Process A an B Accounts. *(8 Marks)*

(b) The capital structure of JCPL Ltd. is as follows:

	₹
Equity share capital of ₹10 each	*8,00,000*
8% Preferences share capital of ₹10 each	*6,25,000*
10% Debenture of ₹100 each	*4,00,000*
	18,25,000

Additional Information:

Profit after tax (tax rate 30%) ₹1,82,000

Operating expenses (including depreciation ₹90,000) being 1.50 times of EBIT

Equity share dividend paid 15%.

Market price per equity share ₹20.

Require to calculate:

(i) Operating and financial leverage.

(ii) Cover for the preference and equity share of dividends.

(iii) The earning yield and price earnings ratio.

(iv) The net fund flow. *(8 Marks)*

Answer

(a) Process A Account

	Units	Amount(₹)		Units	Amount(₹)
To Input	8000	72000	By Normal Loss (5%)	400	800
To Direct Wages		12000	By Abnormal loss	100	1250
To Direct Exp.		6000	@ 12.50		
To overheads		5800	By Process B A/C	5000	62500
(1:2)			By Profit and Loss A/C	2500	31250
			(2500 @ 12.50)		
	8000	95800		8000	95800

Cost of abnormal Loss in process A = $\frac{95800 - 800}{8000 - 400} = \frac{95000}{7600} = 12.50$ per unit

Process B A/C

	Units	Amount(₹)		Units	Amount(₹)
To Process A A/C	5000	62500	By Normal Loss	500	5000
To Direct Wages		24000	By Finished stock A/C	4800	104640
To Direct Exp.		5000	or Profit & loss A/C		
To overheads		11600			
To Abnormal gain	300	6540			
	5300	109640		5300	109640

Cost of Abnormal gain = $\frac{103100 - 5000}{5000 - 500} = \frac{98100}{4500} = 21.80$

Working

Profit & Loss A/c

Particulars	Amount(₹)	Particulars	Amount(₹)
To Cost of Sales:		By Sales:	
Process A		Process A	
(2,500@12.50) 31,250		(2500 x 15) - 37,500	
Process B		Process B	
(4,800@21.80) 1,04,640	1,35,890	(4800 x 25) - 1,20,000	1,57,500
To Abnormal Loss:		By Abnormal gain:	
Process A		Process B	
[(100 units @(12.50-2)]	1050	[(300 units @ (21.80-10)]	3540
To Selling expenses	5,000		
To Net Profit	19,100		
	1,61,040		1,61,040

Note:

1. As mentioned selling expenses are not allocable to process which is debited directly to the P/L A/c.
2. It is assumed that Process A and Process B are not responsibility centres and hence, Process A and Process B have not been credited to direct sales. P/L A/c is prepared to arriving at profit/loss.

(b) *[Assumption: All operating expenses (excluding depreciation) are variable]*

Working Notes	₹
Net profit after tax	1,82,000
Tax @ 30%	78,000
EBT	2,60,000
Interest on debenture	40,000
EBIT	3,00,000
Operating Expenses 1.50 times	4,50,000
Sales	7,50,000

(i) Operating Leverage = Contribution/EBIT

= (7,50,000 - 3,60,000) / 3,00,000

= 3,90,000 / 3,00,000 = 1.30 times.

Financial Leverage = EBIT / EBT = 3,00,000 / 2,60,000 = 1.15 times

OR

$$FL = EBIT + EBT - \left(\frac{Pref\ Dividend}{1 - t}\right)$$

$$= \frac{3,00,000}{2,60,000 - \left(\frac{50,000}{1 - 0.3}\right)} = \frac{3,00,000}{2,60,000 - (7,14,29)}$$

$$= \frac{3,00,000}{1,88,571} = 1.59 = 1.6$$

(ii) Preference Dividend Cover = PAT / Preference share Dividend

= 1,82,000 / 50,000 = 3.64 times

Equity dividend cover = PAT - Pref. div / Equity dividend

= 1,82,000 - 50,000/1,20,000= 1.10 times

(iii) Earning yield = EPS / Market price ´ 100 i.e.

= 1,32,000 / 80,000 = 1.65 / 20 = 8.25%

Price Earnings Ratio = Market price / EPS = 20 / 1.65 = 12.1 Times

(iv) Net Funds Flow

Net Funds flow = Net profit after tax + depreciation – Total dividend

= 1,82,000 + 90,000 – (50,000 + 1,20,000)

= 2,72,000 – 1,70,000

Net funds flow = 1,02,000

Question 7

Answer any four of the following:

(a) "The profit maximization is not an operationally feasible criterion." Comment on it.

(b) Explain the important ratios that would be used in each of the following situations:

(i) A bank is approached by a company for a loan of ₹ 50 lakh for working capital purposes.

(ii) A long term creditor interested in determining whether his claim is adequately secured.

(iii) A shareholder who is examining his portfolio and who is to decide whether he should hold or sell his holding in the company.

(iv) A finance manager interested to know the effectiveness with which a firm uses its available resources.

(c) Write short notes on the following:

(i) Deep Discount Bonds

(ii) Angle of Incidence

(d) Discuss basic assumptions of Cost Volume Profit analysis.

(e) Distinguish between bill of material and material requisition note. (4 × 4 = 16 Marks)

Answer

(a) "The profit maximisation is not an operationally feasible criterion."

The above statement is true because Profit maximisation can be a short-term objective for any organisation and cannot be its sole objective. Profit maximization fails to serve as an operational criterion for maximizing the owner's economic welfare. It fails to provide an operationally feasible measure for ranking alternative courses of action in terms of their economic efficiency. It suffers from the following limitations:

(i) Vague term: The definition of the term profit is ambiguous. Does it mean short term or long term profit? Does it refer to profit before or after tax? Total profit or profit per share?

(ii) Timing of Return: The profit maximization objective does not make distinction between returns received in different time periods. It gives no consideration to the time value of money, and values benefits received today and benefits received after a period as the same.

(iii) It ignores the risk factor.

(iv) The term maximization is also vague.

(b) Important Ratios used in different situations

(i) Liquidity Ratios- Here Liquidity or short-term solvency ratios would be used by the bank to check the ability of the company to pay its short-term liabilities. A bank may use Current ratio and Quick ratio to judge short terms solvency of the firm.

(ii) Capital Structure/Leverage Ratios- Here the long-term creditor would use the capital structure/leverage ratios to ensure the long term stability and structure of the firm. A long term creditors interested in the determining whether his claim is adequately secured may use Debt-service coverage and interest coverage ratio.

(iii) Profitability Ratios- The shareholder would use the profitability ratios to measure the profitability or the operational efficiency of the firm to see the final results of business operations. A shareholder may use return on equity, earning per share and dividend per share.

(iv) Activity Ratios- The finance manager would use these ratios to evaluate the efficiency with which the firm manages and utilises its assets. Some important ratios are (a) Capital turnover ratio (b) Current and fixed assets turnover ratio (c) Stock, Debtors and Creditors turnover ratio.

(c) (i) Short Note on Deep Discount Bonds

Deep Discount Bonds is a form of zero-interest bonds. These bonds are sold at a discounted value and on maturity face value is paid to the investors. In such bonds, there is no interest payout during lock in period. IDBI was the first to issue a deep discount bond in India in January, 1992. The investor could hold the bond for 26 years or seek redemption at the end of every five years with a specified maturity value.

(ii) Angle of incidence

This angle is formed by the intersection of sales line and total cost line at the break-even point. This angle shows the rate at which profits are being earned once the break-even point has been reached. The wider the angle the greater is the rate of earning profits. A large angle of incidence with a high margin of safety indicates extremely favourable position.

(d) CVP Analysis:-Assumptions

(i) Changes in the levels of revenues and costs arise only because of changes in the number of products (or service) units produced and sold.

(ii) Total cost can be separated into two components: Fixed and variable

(iii) Graphically, the behaviour of total revenues and total cost are linear in relation to output level within a relevant range.

(iv) Selling price, variable cost per unit and total fixed costs are known and constant.

(v) All revenues and costs can be added, sub traded and compared without taking into account the time value of money.

(e)

Bills of material	Material Requisition Note
1. It is document by the drawing office	1. It is prepared by the foreman of the consuming department.
2. It is a complete schedule of component parts and raw materials required for a particular job or work order.	2. It is a document authorizing Store-Keeper to issue Material to the consuming department.
3. It often serves the purpose of a Store Requisition as it shown the complete schedule of materials required for a particular job i.e. it can replace stores requisition.	3. It cannot replace a bill of material.
4. It can be used for the purpose of quotation	4. It is useful in arriving historical cost only.
5. It helps in keeping a quantitative control on materials draw through stores Requisition.	5. It shows the material actually drawn from stores.