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IMPORTANT QUES – ANS

1. TOPIC - EBIT & EPS ANALYSIS

Q-1. The Modern Chemicals Ltd. requires Rs.25,00,000 for a new plant. This plant is expected to yield earnings before interest and taxes of Rs.5,00,000. While deciding about the financial plan, the company considers the objective of maximizing earnings per share.

It has three alternatives to finance the projects by raising debt of Rs.2,50,000 or Rs.10,00,000 or Rs.15,00,000 and the balance in each case, by issuing equity shares. The company's share is currently selling at Rs.150, but is expected to decline to Rs.125 in case the funds are borrowed in excess of Rs.10,00,000. The funds can be borrowed at the rate of 10% up to Rs.2,50,000 at 15% over Rs.2,50,000 and upto Rs.10,00,000 and at 20% over Rs.10,00,000. The tax rate applicable to the company is 50%.

Which form of financing should the company choose?

A-1. Statement of EPS

Particulars	**Alternatives**		
	1	**2**	**3**
Earnings before interest and tax	5,00,000	5,00,000	5,00,000
Less: Interest:			
@ 10% on first	Rs.2,50,000	25,000	25,000
@ 15% on Rs.2,50,001 to Rs.10,00,000	-	1,12,500	1,12,500
@ 20% on above Rs.10,00,000	-	-	1,00,000
EBT	4,75,000	3,62,500	2,62,500
Less: Tax @ 50%	2,37,500	1,81,250	1,31,250
EAT	2,37,500	1,81,250	1,31,250
÷ No. of Equity shares	15,000 (22,50,000/150)	10,000 (15,00,000/150)	8,000 (10,00,000/125)

EPS	Rs.**15.833**	Rs.**18.125**	Rs.**16.406**

Decision:

The earnings per share is higher in alternative II i.e. if the company finance the project by raising debt of Rs.10,00,000 & issue equity shares of Rs.15,00,000. Therefore, the company should choose this alternative to finance the project.

Q-2. A Company earns a profit of Rs.3,00,000 per annum after meeting its interest liability of Rs.1,20,000 on 12% debentures. The Tax rate is 50%. The number of Equity Shares of Rs.10 each are 80,000 and the retained earnings amount to Rs.12,00,000. The company proposes to take up an expansion scheme for which a sum of Rs.4,00,000 is required.

It is anticipated that after expansion, the company will be able to achieve the same return on investment as at present. The funds required for expansion can be raised either through debt at the rate of 12% or by issuing Equity Shares at par.

Required:

(i) Compute the Earnings Per Share (EPS), if:

(a) The additional funds were raised as debt

(b) The additional funds were raised by issue of equity shares.

(ii) Advise the company as to which source of finance is preferable.

A-2.

(i) Statement of EPS

Particulars	**Alternatives**	
	Debt Plan	**Equity Plan**
Earnings before interest and tax @ 14% of Rs.34,00,000	4,76,000	4,76,000
Less: Interest:		

Existing	1,20,000	1,20,000
New (12% on Rs.4,00,000)	48,000	-
EBT	3,08,000	3,56,000
Less: Tax @ 50%	1,54,000	1,78,000
EAT	1,54,000	1,78,000
÷ No. of Equity shares		
Existing	80,000	80,000
New	-	40,000
EPS	**Rs.1.925**	**Rs.1.483**

Working notes:

1. Calculation of capital employed before expansion plan:

Equity share capital Rs.8,00,000

Retained earnings Rs.12,00,000

Debentures (1,20,000/12%) Rs.10,00,000

Total capital employed Rs.**30,00,000**

2. Earnings before the payment of Interest and tax (EBIT):

Profit before tax Rs.3,00,000

Interest Rs.1,20,000

EBIT Rs.4,20,000

3. Return on Capital Employed (ROCE):

ROCE = × 100 = × 100 = **14%** Employed Capital EBIT 000 ,00,30000 ,20,4

4. After expansion capital employed = Rs.34,00,000 (Rs.30,00,000 + Rs.4,00,000)

(ii) Advise to the company: Since EPS is greater in the case when company arranges additional funds as debt. Therefore, the company should finance the expansion scheme by raising debt.

Q-3. Yoyo Limited presently has Rs.36,00,000 in debt outstanding bearing an interest rate of 10 per cent. It wishes to finance a Rs.40,00,000 expansion programme and is considering three alternatives: additional debt at 12 per cent interest, preference shares with an 11 per cent dividend, and the issue of equity shares at Rs.16 per share. The company presently has 8,00,000 shares outstanding and is in a 40 per cent tax bracket.

(a) If earnings before interest and taxes are presently Rs.15,00,000, what would be earnings per share for the three alternatives, assuming no immediate increase in profitability?

(b) Analyze which alternative do you prefer? Compute how much would EBIT need to increase before the next alternative would be best?

A-3.

(a) Statement of EPS

Particulars	**Alternatives**		
	Debt	**Preference**	**Equity**
Earnings before interest and tax	15,00,000	15,00,000	15,00,000
Less: Interest:			
Existing @ 10% on Rs.36,00,000	3,60,000	3,60,000	3,60,000
New 12% on Rs.40,00,000	4,80,000	-	-
EBT	6,60,000	11,40,000	11,40,000
Less: Tax @ 40%	2,64,000	4,56,000	4,56,000
EAT	3,96,000	6,84,000	6,84,000
Less: Preference Dividend	-	4,40,000	-
Earnings Available for Equity Shareholders	3,96,000	2,44,000	6,84,000
÷ No. of Equity shares	8,00,000	8,00,000	10,50,000
EPS	**Rs.0.495**	**Rs.0.305**	**Rs.0.651**

(b) For the present EBIT level, equity share is clearly preferable. EBIT would need to increase by Rs.23,76,000 − Rs.15,00,000 = Rs.8,76,000 before an indifference point with debt is reached. One would want to be comfortably above this indifference point before a strong case for debt should be made. The lower the probability that actual EBIT will fall below the indifference point, the stronger the case that can be made for debt, all other things remain the same.

Working Note:

Indifference Point between Equity and Debt plan:

$(EBIT-I)\ (1-T)/N_E = (EBIT-I)\ (1-T)/N_D$

(EBIT−3,60,000) (1−0.40)/10,50,000 = (EBIT−8,40,000) (1−0.40)/8,00,000

EBIT = Rs.23,76,000

2. TOPIC - LEVERAGE

Q-4. Z Limited is considering the installation of a new project costing Rs.80,00,000. Expected annual sales revenue from the project is Rs.90,00,000 and its variable costs are 60 percent of sales. Expected annual fixed cost other than interest is Rs.10,00,000. Corporate tax rate is 30 percent. The company wants to arrange the funds through issuing 4,00,000 equity shares of Rs.10 each and 12 percent debentures of Rs.40,00,000.

You are required to:

(i) Calculate the operating, financial and combined leverages and Earnings per Share (EPS).

(ii) Determine the likely level of EBIT, if EPS is Rs.4, or Rs.2, or Zero.

A-4 (i) Operating Leverage =Contribution / EBIT = 90 Lacs 60% / 36 Lacs 10 Lacs = **1.38**

Financial Leverage =EBIT / EBT = 26 Lacs / 26 Lacs 12%of 40 Lacs = **1.23**

Combined Leverage = OL × FL = 1.38 × 1.23 = **1.70**

Earnings Per Share = PAT / Equity shares = 21,20,000 (1-.30) / 4,00,000 = Rs.**3.71**

(ii) Calculation of likely level of EBIT:

Earnings Per Share = PAT / Equity shares = (EBIT-I)(1-t) / Equity shares

Case I: Rs. 4.00 = (EBIT - 4,80,000) (1 - 0.30) / 4,00,000 or EBIT = **Rs.27,65,714**

Case II: Rs.2.00 = (EBIT - 4,80,000) (1 - 0.30) / 4,00,000 or EBIT = **Rs.16,22,857**

Case III: Rs.0.00 = (EBIT - 4,80,000) (1 - 0.30) / 4,00,000 or EBIT = **Rs.4,80,000**

Q-5. The capital structure of the Progressive Corporation consists of an ordinary share capital of Rs.1,00,00,000 (share of Rs.100 par value) and Rs.10,00,000 of 10% debentures.

Sales increased by 20% from 1,00,000 units to 1,20,000 units, the selling price is Rs.10 per unit; variable cost amounts to Rs.6 per unit and fixed expenses amount to Rs.2,00,000.

The income tax rate is assumed to be 50%.

You are required to calculate the following:

(i) The percentage increase in earnings per share;

(ii) The degree of operating leverage at 1,00,000 units and 1,20,000 units.

(iii) The degree of financial leverage at 1,00,000 units and 1,20,000 units.

(iv) Comment on the behavior of operating and financial leverages in relation to increase in production from 1,00,000 units to 1,20,000 units.

A- 5.

(i) Calculation of % increase in EPS

Particulars	1,00,000 units	1,20,000 units
Sales @ Rs.10 per unit	10,00,000	12,00,000
Less: Variable cost	6,00,000	7,20,000
Contribution	**4,00,000**	**4,80,000**
Less: Fixed cost	2,00,000	2,00,000
Profit before interest and tax	**2,00,000**	**2,80,000**
Less: Interest @ 10% of Rs.10 lacs	1,00,000	1,00,000
Profit before tax	**1,00,000**	**1,80,000**
Less: Tax @ 50%	50,000	90,000
Profit after tax	**50,000**	**90,000**
÷ No. of shares	1,00,000	1,00,000
Earnings per share	Rs.**0.50**	Rs.**0.90**

% increase in EPS = 0.90 - 0.50 × 100 = **80%**

(ii) Degree of Operating Leverage = Contribution / EBIT

At 1,00,000 units = 4,00,000 / 2,00,000 = **2 times**

At 1,20,000 units = 4,80,000 / 2,80,000 = **1.71 times**

(iii) Degree of Financial Leverage = EBT EBIT

At 1,00,000 units = 2,00,000 / 1,00,000 = **2 times**

At 1,20,000 units = 2,80,000 / 1,80,000 = **1.56 times**

(iv) Increase in production and sales will result in decrease in risk.

Q-6. On the basis of following information calculate Operating leverage with the help of Margin of Safety:

Particulars	Product X
Number of Unit Sold	1,000
Sale Price per unit	Rs.50
Variable Cost per unit	Rs.30
Fixed Cost	Rs.15,000

A-6. Statement Showing Operating Leverage

Particulars	**Product X**
Sale	50,000
Less: Variable Cost per unit	30,000
Contribution	**20,000**
Less: Fixed cost	15,000
Earning before interest and tax	**5,000**
Break-even point (Fixed Cost ÷ Contribution per unit) or (15,000 ÷ 20)	750 units
Margin of Safety (1,000 units – 750 units)	250 units
Margin of Safety to Sales (250 units ÷ 1,000 units)	0.25
Operating Leverage (1 ÷ MOS to sales ratio) or (1 ÷ 0.25)	**4 times**

Q-7. A firm has sales of Rs.75,00,000 variable cost is 56% and fixed cost is Rs.6,00,000. It has a debt of Rs.45,00,000 at 9% and equity of Rs.55,00,000.

(i)	What is the firm's ROI?
(ii)	Does it have favourable financial leverage?
(iii)	If the firm belongs to an industry whose capital turnover is 3, does it have a high or low capital turnover?
(iv)	What are the operating, financial and combined leverages of the firm?
(v)	If the sales is increased by 10% by what percentage EBIT will increase?
(vi)	At what level of sales the EBT of the firm will be equal to zero?
(vii)	If EBIT increases by 20%, by what percentage EBT will increase?

A-7. Income Statement

Particulars	**Rs.**
Sales	75,00,000
Less: Variable cost @ of 56% of sales	42,00,000
Contribution	33,00,000
Less: Fixed costs	6,00,000
EBIT	27,00,000
Less: Interest @ 9% of 45,00,000	4,05,000
EBT	22,95,000

(i) ROI = EBIT / Capital Employed × 100 = 27,00,000 / 45,00,000+55,00,000 × 100 = **27%**

(ii) ROI is 27% and Interest on debt is 9%, hence, it has a favourable financial leverage.

(iii) Capital Turnover = Net Sales / Capital = 75,00,000 / 1,00,00,000 = **0.75**

Firm has very low capital turnover as compared to industry average of 3.

(iv) Calculation of Operating, Financial and Combined leverages:

Operating Leverage =Contribution / EBIT = 33,00,000 / 27,00,000 = **1.222**

Financial Leverage = EBIT/ EBT = 27,00,000 / 22,95,000 = **1.176**

Combined Leverage = OL × FL = 1.222 × 1.176 = **1.437**

(v) Operating leverage is 1.22. So if sales is increased by 10% then EBIT will be increased by 1.222 × 10 i.e. 12.22% (approx)

(vi) EBT = Sales – Variable cost – Fixed cost – Interest

Nil = Sales – 56% sales – 6,00,000 – 4,05,000

44% of sales = 10,05,000

Sales = **22,84,091**

Hence at Rs.22,84,091 sales level EBT of the firm will be equal to Zero.

(vii) Financial leverage is 1.176. So, if EBIT increases by 20% then EBT will increase by 1.18 × 20% = 23.52% (approx)

Q-8. You are given the following information of 5 firms of the same industry:

Firm	Change in Revenue	Change in Operating Income	Change in EPS
M	28%	26%	32%
N	27%	34%	26%
P	25%	38%	23%
Q	23%	43%	27%
R	25%	40%	28%

Find out:

(a) Degree of operating leverage , and

(b) Degree of combined leverage of all the firms

A-8.

(a) Degree of Operating Leverage = %Change in operating income / % Change in revenue

M	= 26% ÷ 28%	= **0.93**
N	= 34% ÷ 27%	= **1.26**
P	= 38% ÷ 25%	= **1.52**

Q	= 43% ÷ 23%	= **1.87**
R	= 40% ÷ 25%	= **1.60**

(b) Degree of Combined Leverage = % Change in EPS / %Change in revenue

M	= 32% ÷ 28%	= **1.14**
N	= 26% ÷ 27%	= **0.96**
P	= 23% ÷ 25%	= **0.92**
Q	= 27% ÷ 23%	= **1.17**
R	= 28% ÷ 25%	= **1.12**

3. TOPIC - MANAGEMENT OF RECEIVABLES

Q-9. A firm has total sales as Rs.200 lakhs of which 80% is on credit. It is offering credit term of 2/40, net 120. Of the total, 50% of customers avail of discount and the balance pay in 120 days. Past experience indicates that bad debt losses are around 1% of credit sales. The firm spends about Rs.2,40,000 per annum to administer its credit sales. These are avoidable as a factor is prepared to buy the firm's receivables. He will charge 2% commission. He will pay advance against receivables to the firm at an interest rate of 18% after withholding 10% as reserve.

(i) What is the effective cost of factoring? Consider year as 360 days.

(ii) If bank finance for working capital is available at 14% interest, should the firm avail of factoring service?

A-9.

(i) Statement of Effective Cost of Factoring to the Firm

Particulars	Rs.
(A) Cost of factoring:	
Factoring commission (Rs.71,111 × 360 Days/80 Days)	3,20,000
Interest charges (Rs.31,28,889 × 18%)	5,63,200
Total (A)	**8,83,200**
(B) Savings:	
Saving in credit administration cost	2,40,000
Saving in bad debts (1% × 80% × Rs.2,00 Lakhs)	1,60,000
Total (B)	**4,00,000**
Effective cost of factoring (A - B)	**4,83,200**
Rate of effective cost	**16.09%**

Alternatively:

If cost of factoring is calculated on the basis of total amount available for advance, then, it will be

Rate of effective cost = = **15.44%** □□ □ □□ □ □100 889 ,28,31200 ,83,4

(ii) If bank finance for working capital is available at 14%, firm will not avail factoring services as 14% is less than 16.08% (or 15.44%).

Working Notes:

1. Calculation of advance:

Particulars	Rs.
Average receivables (Rs.200 Lakhs × 80% × 80/360)	35,55,556
Less: Factor reserve @ 10% of Rs.35,55,556	3,55,556
Maximum possible advance	32,00,000
Less: Commission @ 2% of Rs.35,55,556	71,111
Amount available for advance	31,28,889
Less: Interest (Rs.31,28,889 × 18% × 80/360)	1,25,156

Amount of advance	30,03,733

2. Average collection period = 40 Days × ½ + 120 Days × ½ = 80 Days

Q-10. PQR Ltd. having annual sales of Rs.30,00,000, is re considering its present collection policy. At present the average collection period is 50 days, bad debt losses are 5% of sales. The company is incurring an expenditure of Rs.30,000 on account of collection of receivables. Cost of funds is 10 percent.

The alternative policies are:

Alternative I Alternative II

Average collection period reduced to 40 days 30 days

Bad debt losses 4% of sales 3% of sales

Collection expenses Rs.60,000 Rs.95,000

Evaluate the alternatives on the basis of incremental approach and state which alternative is more beneficial.

A-10.

Statement of Evaluation

Particulars	Current	Alternate 1	Alternate 2
Sales	30,00,000	30,00,000	30,00,000
Cost of investment in Debtors	41,096	32,877	24,658
1. Saving in cost in Debtors	-	**8,219**	**16,438**
Bad debt losses	1,50,000	1,20,000	90,000
2. Saving in Bad debt losses	-	**30,000**	**60,000**

Collection expenses	30,000	60,000	95,000
3. Increase in collection expenses	**-**	**30,000**	**65,000**
Incremental Benefit (1 + 2 - 3)	**-**	**8,219**	**11,438**

Analysis: Since incremental benefit over present policy is higher in case of alternative II, select Alternative II. It is suggested to reduce the collection period from existing 50 days to 30 days.

Working Notes:

Calculation of cost of investment in debtors:

Existing	= 30,00,000 × 50/365 × 10%	= **41,096**
Alternative I	= 30,00,000 × 40/365 × 10%	= **32,877**
Alternative II	= 30,00,000 × 30/365 × 10%	= **24,658**

Q-11. The Dolce Company purchases raw materials on terms of 2/10, net 30. A review of the company's records by the owner, Mr. Gautam, revealed that payments are usually made 15 days after purchases are made. When asked why the firm did not take advantage of its discounts, the accountant, Mr. Rohit, replied that it cost only 2 per cent for these funds, whereas a bank loan would cost the company 12 per cent.

(a) Analyze, what mistake is Rohit making?

(b) If the firm could not borrow from the bank and was forced to resort to the use of trade credit funds, what suggestion might be made to Rohit that would reduce the annual interest cost? Identify.

A-11.

(a) Rohit is confusing the percentage cost of using funds for 5 days with the cost of using funds for a year. These costs are clearly not comparable. One must be converted to the time scale of the other.

Real cost of not taking advantage of discount is:

2 / 98 ×365 / 5 × 100 = **148.98%**

(b) Assuming that the firm has made the decision not to take the cash discount, it makes no sense to pay before the due date. In this case payment should be made after 30 days rather than 15 days and it would reduce the annual interest cost to 37.24 per cent:

2 / 98 ×365 / 20 × 100

= **37.24%**

Q-12. Slow Payers are regular customer of Goods Dealers Ltd., Calcutta and have approached the sellers of extension of a credit facility for enabling them to purchase goods from Goods Dealer Ltd. On an analysis of past performance and on the basis of information supplied, the following pattern of payment schedule is regard to Slow Payers:

Pattern of Payment Schedule

At the end of 30 Days	15% of the bills
At the end of 60 Days	34% of the bills
At the end of 90 Days	30% of the bills
At the end of 100 Days	20% of the bills
Non-recovery	1% of the bills

Slow Payers want to enter into a firm commitment for purchase of goods of Rs.15 Lacs in 2017, deliveries to be made in equal quantities on the first day of each quarter in the calendar year. The price per unit of commodity is Rs.150 on which a profit of Rs.5 per unit is expected to be made. It is anticipated by Goods Dealers Ltd. that taking up of this contract would mean an extra recurring expenditure of Rs.5,000 per annum.

If the opportunity cost of funds in the hands of Goods dealers is 24% per annum, would you as the finance manager of the seller recommend the grant of credit to Slow Payers? Workings should form part of your answer. Assume year of 365 days.

A-12

Statement of Evaluation of Credit Policy

Particulars	Proposed
Sales in units	**10,000**
Sales value @ Rs.150 per unit	15,00,000
Less: Variable cost @ Rs.145 per unit	14,50,000
Less: Extra recurring expenditure	5,000
Profit before bad debt	45,000
Less: Bad debts @ 1%	15,000
Expected Profit	**30,000**
Less: Opportunity cost of investment in receivables (WN)	68,788
Net Benefit	**(38,788)**

Recommendation: The proposed policy should not be adopted since the net benefit under this policy is negative.

Working notes:

Calculation of Opportunity cost of average investment:

Opportunity cost = Total cost × Average Collection / 365 × Rate

= 14,55,000 × 71.90/365 × 24% = **68,788**

Calculation of Average collection period:

Average collection period = 30 days × 15% + 60 days × 34% + 90 days × 30% + 100 days × 20%

= **71.90 Days**

Q-13. A current credit sales of a firm is Rs.15,00,000 and the firm still has an unutilized capacity. In order to boost its sales, the firm is willing to relax its credit policy.

The firm proposes a new credit policy of 2/10 net 60 days as against the present policy of 1/10 net 45days. The firm expects an increase in the sales by 12%. However, it is also expected that bad debts will go upto 2% of sales from 1.5%.

The contribution to sales ratio of the firm is 28%. The firm's tax rate is 30% and firm requires an after tax return of 15% on its investment. 50 percent and 80 percent of customers in term of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively.

Should the firm change its credit period?

A-13.

Statement of Evaluation

Particulars	**Policies**	
Present	**Proposed**	
Sales value	15,00,000	16,80,000
Less: Variable cost @ 72% of sales	10,80,000	12,09,600
Profit before cost of credit	4,20,000	4,70,400
Less: Bad debts @ 1.5% / 2%	22,500	33,600
Less: Cash Discount 'WN'	7,500	26,880
Expected PBT	**3,90,000**	**4,09,920**
Less: Tax @ 30%	1,17,000	1,22,976
Expected PAT	**2,73,000**	**2,86,944**
Less: Cost of investment in debtors 'WN'	12,205	9,942
Net benefit after tax	**2,60,795**	**2,77,002**

Yes, the firm should change its credit period.

Working notes:

1. Calculation of opportunity cost of investment in receivables:

Existing	= 10,80,000 × 15% × 27.5 (.5×10+.5×45)/365	= **12,205**
Proposed	= 12,09,600 × 15% × 20 (.8×10+.2×60)/365	= **9,942**

2. Calculation of cash discount:

Existing	= 15,00,000 × 50% × 1%	= **7,500**
Proposed	= 16,80,000 × 80% × 2%	**=26,880**

TOPIC - 4. - TREASURY AND CASH MANAGEMENT

Q-14. The following details are forecasted by a company for the purpose of effective utilization and management of cash:

(i) Estimated sales and manufacturing costs:

Month	**Sales** Rs.	**Materials** Rs.	**Wages** Rs.
April	4,20,000	2,00,000	1,60,000
May	4,50,000	2,10,000	1,60,000
June	5,00,000	2,60,000	1,65,000
July	4,90,000	2,82,000	1,65,000
August	5,40,000	2,80,000	1,65,000
September	6,10,000	3,10,000	1,70,000

(ii) Credit terms:

20% sales are on cash, 50% of the credit sales are collected next month and the balance in the following month.

Credit allowed by suppliers is 2 months and delay in payment of wages is 1/2 month and of overheads is 1 month.

(iii) Interest on 12 percent debentures of Rs.5,00,000 is to be paid half yearly in June and December.

(iv) Dividends on investments amounting to Rs.25,000 are expected to be received in June, 2010.

(v) A new machinery will be installed in June, 2010 at a cost of Rs.4,00,000 which is payable in 20 monthly installments from July, 2010 onwards.

(vi) Advance income-tax to be paid in August, 2010 is Rs.15,000.

(vii) Cash balance on 1st June, 2010 is expected to be Rs.45,000 and the company wants to keep it at the end of every month around this figure, the excess cash (in multiple of thousand rupees) being put in fixed deposit.

You are required to prepare monthly cash budget on the basis of above information for four months beginning from June, 2010.

A-14.

Cash Budget

(From July to September)

Particulars	June	July	August	September
Opening Balance	45,000	45,500	45,500	45,000
Cash Sales & Debtors Collection	4,48,000	4,78,000	5,04,000	5,34,000
Dividend	25,000	-	-	-
Total A	**5,18,000**	**5,23,500**	**5,49,500**	**5,79,000**
Payments to creditors	2,00,000	2,10,000	2,60,000	2,82,000
Wages	1,62,500	1,65,000	1,65,000	1,67,500
Overheads	40,000	38,000	37,500	60,800
Interest	30,000	-	-	-
Machine installments	-	20,000	20,000	20,000
Advance tax	-	-	15,000	-
Total B	**4,32,500**	**4,33,000**	**4,97,500**	**5,30,300**
Balance (A – B)	85,500	90,500	52,000	48,700
Less: Fixed deposit	40,000	45,000	7,000	3,000
Closing balance	**45,500**	**45,500**	**45,000**	**45,700**

Working Note 1: Cash Sales and Collection from Debtors

Month	Sales	Cash Sales 20%	From Debtors		Total Collection
			50%	50%	
April	4,20,000	-	-	-	-
May	4,50,000	-	-	-	-
June	5,00,000	1,00,000	1,80,000	1,68,000	4,48,000
July	4,90,000	98,000	2,00,000	1,80,000	4,78,000
August	5,40,000	1,08,000	1,96,000	2,00,000	5,04,000
September	6,10,000	1,22,000	2,16,000	1,96,000	5,34,000

Working Note 2: Payment of wages:

Month	Wages	Payment		Total Payment
		50%	50%	
May	1,60,000	-	-	-
June	1,65,000	80,000	82,500	1,62,500
July	1,65,000	82,500	82,500	1,65,000
August	1,65,000	82,500	82,000	1,65,000
September	1,70,000	82,500	85,000	1,67,500

Q-15. You are given below the Profit & Loss Accounts for two years for a company:

Particulars	Year 1	Year 2	Particulars	Year 1	Year 2
To Opening stock	80,00,000	1,00,00,000	By Sales	8,00,00,000	10,00,00,000
To Raw materials	3,00,00,000	4,00,00,000	By Closing stock	1,00,00,000	1,50,00,000

To Stores	1,00,00,000	1,20,00,000	By Misc. Income	10,00,000	10,00,000
To Manufacturing exps	1,00,00,000	1,60,00,000			
To Other expenses	1,00,00,000	1,00,00,000			
To Depreciation	1,00,00,000	1,00,00,000			
To Net Profit	**1,30,00,000**	**1,80,00,000**			
	9,10,00,000	**11,60,00,000**		**9,10,00,000**	**11,60,00,000**

Sales are expected to be Rs.12,00,00,000 in year 3.

As a result, other expenses will increase by Rs.50,00,000 besides other charges. Only raw materials are in stock. Assume sales and purchases are in cash terms and the closing stock is expected to go up by the same amount as between year 1 and 2. You may assume that no dividend is being paid. The Company can use 75% of the cash generated to service a loan.

Compute how much cash from operations will be available in year 3 for the purpose? Ignore income tax.

A-15.

Working Notes:

(a) Material consumed in year 2 = Rs.350 Lakhs ÷ Rs.1,000 lakhs = 35% of sales

Likely consumption in year 3 = Rs.1,200 Lakhs × 35% = Rs.420 Lakhs

(b) Stores are 12% of sales, as in year 2

(c) Manufacturing expenses are 16% of sales

Projected Profit and Loss Account for the year 3 (Rs. **in Lakhs)**

Particulars	**Year 2 (Actual)**	**Year 3 (Projected)**	**Particulars**	**(Actual) Year 2**	**(Projected) Year 3**
To Raw Materials Consumed	350	420	By Sales	1,000	1,200
To Stores	120	144	By Misc. Income	10	10

To Manufacturing Expenses	160	192			
To Other Expenses	100	150			
To Depreciation	100	100			
To Net Profit	**180**	**204**			
	1,010	**1,210**		**1,010**	**1,210**

Cash Flow:

Particulars	**(Rs. in Lakhs)**
Net Profit	204
Add: Depreciation	100
	304
Less: Cash required for increase in stock (50 Lakhs same as between year 1 and 2)	(50)
Net Cash Inflow	**254**

Available for servicing the loan: 75% of Rs.2,54,00,000 or Rs.1,90,50,000

Note: The above also shows how a projected profit and loss account is prepared

Q-16. Tarus Ltd. has an estimated cash payments of Rs.8,00,000 for a one month period and the payments are expected to steady over the period. The fixed cost per transaction is Rs.250 and the interest rate on marketable securities is 12% p.a.

Calculate the optimal transaction size, average cash and number of transactions during one month.

A-16.

Optimal transaction size $= \sqrt{\frac{2\times 8,00,000\times 12\times 250}{0.12}}$ = **Rs.2,00,000**

Number of transactions p.m. = Monthly cash requirement ÷ Transaction size

= Rs.8,00,000 ÷ Rs.2,00,000 = **4 transactions**

TOPIC – 5. MANAGEMENT OF WORKING CAPITAL

Q-17. The following information is provided by the DPS Limited for the year ending 31st March, 2013

Raw material storage period	55 days
Work-in progress conversion period	18 days
Finished Goods storage period	22 days
Debt collection period	45 days
Creditor's payment period	60 days
Annual Operating cost (including depreciation of Rs.2,10,000)	Rs.21,00,000
1 year	360 days

You are required to calculate:

I. Operating Cycle period.

II. Number of Operating Cycle in a year.

III. Amount of working capital required of the company on a cash cost basis.

IV. The company is a market leader in its product, there is virtually no competitor in the market. Based on a market research it is planning to discontinue sales on credit and deliver products based on pre-payment. Thereby, it can reduce its working capital requirement substantially. What would be the reduction in working capital requirement due to such decision?

A-17.

I. Operating cycle = R + W + F + D – C = 55 + 18 + 22 + 45 – 60

= **80 Days**

II. No. of operating cycle = 360 / 80 = **4.5 times**

III. Working Capital = Annual cash operating cost × Operating cycle / 360 Days

= (Rs.21,00,000 – Rs.2,10,000) × = Rs.4,20,000 Days 360 Days 80

IV. In case of cash sales operating cycle period will reduce by 45 Days (Debt collection period).

Revised operating cycle period = 55 + 18 + 22 – 60 = 35 Days

Revised working capital = (Rs.21,00,000 – Rs.2,10,000) × 35/360 Days = Rs.1,83,750 Days

Reduction in working capital = Rs.4,20,000 - Rs.1,83,750 = **Rs.2,36,250**

Q-18. The following annual figures relate to XYZ Co.

Sales (at 2 months' credit)	Rs.36,00,000
Materials consumed (suppliers extend two months' credit)	Rs.9,00,000
Wages paid (1 month lag in payment)	Rs.7,20,000
Cash Manufacturing expenses (1 month lag in payment)	Rs.9,60,000
Administrative expenses (cash 1 month lag in payment)	Rs.2,40,000
Sales promotion expenses (paid quarterly in advance)	Rs.1,20,000

The company sells its products on gross profit 25%. Depreciation is considered as a part of the cost of production. It keeps one month's stock each of raw materials and finished goods and a cash balance of Rs.1,00,000. Assuming a 20% safety margin, ignore work-in-process.

Find out the requirements of working capital of the company on cash cost basis.

A-18.

Statement of Working Capital Requirement (Cash Cost Basis)

Particulars	Rs.
(A) Current Assets:	
Raw Materials (9,00,000 × 1/12)	75,000
Finished Goods (25,80,000 × 1/12)	2,15,000
Debtors (29,40,000 × 2/12)	4,90,000
Cash	1,00,000
Prepaid Sales Promotion Expenses (1,20,000 × 1/4)	30,000
Total (A)	**9,10,000**
(B) Current Liabilities:	
Creditors (9,00,000 × 2/12)	1,50,000
Outstanding labour (7,20,000 × 1/12)	60,000
Outstanding Manufacturing Expenses (9,60,000 × 1/12)	80,000
Outstanding Administrative Expenses (2,40,000 × 1/12)	20,000
Total (B)	**3,10,000**
Working Capital Before Provision (A - B)	**6,00,000**
Add : Safety Margin @ 20% of 6,00,000	1,20,000
Working Capital	**7,20,000**

Working Notes:

Projected Income Statement (Cash Cost Basis)

Particulars	**Rs.**
Raw Materials	9,00,000
Wages	7,20,000
Manufacturing Expenses (in cash)	9,60,000
Cash Cost of Goods Sold	**25,80,000**
Administration Expenses (in cash)	2,40,000
Sales Promotion Expenses (in cash)	1,20,000
Cash Cost of Sales	**29,40,000**

Q-19.

A newly formed company has applied to the commercial bank for the first time for financing its working capital requirements.

The following information is available about the projections for the current year:

Estimated level of activity is 2,08,000 completed units of production plus 8,000 units of work-in-progress.

Based on the above activity, estimated cost per unit is:

Raw material	Rs.16
Direct wages	Rs.6
Overheads (exclusive of depreciation)	Rs.12
Total cost	Rs.34
Selling price	Rs.40

Raw materials in stock: average 4 weeks consumption, work-in-progress (assume 50% completion stage in respect of conversion cost and materials issued at the start of the processing).

Finished goods in stock	16,000 units
Credit allowed by suppliers	Average 4 weeks
Credit allowed to debtors	Average 8 weeks
Lag in payment of wages	Average 1.5 weeks
Lag in payment of overheads	Average 4 weeks

Cash at banks (for smooth operation) Rs.50,000

Assume that production is carried on evenly throughout the year (52 weeks) and wages and overheads accrue similarly. All sales are on credit basis only.

You are required to estimate net working capital.

A-19. Statement of Working Capital Requirement

Particulars	Rs.
(1) Current Assets:	
Raw materials (34,56,000 × 4/52)	2,65,846
Work in progress	2,00,000
Finished goods	5,44,000
Debtors (65,28,000 × 8/52)	10,04,308
Cash	50,000
Total (1)	**20,64,154**
(2) Current Liabilities:	
Creditors (34,56,000 + 2,65,846) × 4/52	2,86,296
Outstanding labour (12,72,000 × 1.5/52)	36,692
Outstanding overheads (25,44,000 × 4/52)	1,95,692
Total (2)	**5,18,680**
Working Capital (1 - 2)	**15,45,474**

Working Notes: Projected Income Statement

Particulars	Rs.
Raw materials (2,16,000 × 16)	34,56,000
Direct labour (2,08,000 + ½ × 8,000) × 6	12,72,000
Overheads (2,08,000 + ½ × 8,000) × 12	25,44,000
Cost Upto Factory	**72,72,000**
Less: Closing WIP 8,000 units × (16 + 3 + 6)	(2,00,000)
Cost of Production (2,08,000 units)	**70,72,000**
Less: Closing FG 16,000 units × 34	(5,44,000)
Cost of Goods Sold (1,92,000 units)	**65,28,000**
Profit	11,52,000
Sales (1,92,000 × 40)	**76,80,000**

Q-20. Samreen Enterprises has been operating its manufacturing facilities till 31.03.2020 on a single shift working with the following cost structure: Per unit

	Rs.6.00
Wages (out of which 40% fixed)	Rs.5.00
Overheads (out of which 80% fixed)	Rs.5.00
Profit	Rs.2.00
Selling price	Rs.**18.00**
Sales during 2019-2020	Rs.4,32,000

As at 31.03.20 the company held:

Stock of raw materials (at cost)	Rs.36,000
Work-in-progress (valued at prime cost)	Rs.22,000
Finished goods (valued at total cost)	Rs.72,000
Sundry debtors	Rs.1,08,000

In view of increased market demand, it is proposed to double production by working an extra shift. It is expected that a 10% discount will be available from suppliers of raw materials in view of increased volume of business. Selling price will remain the same. The credit period allowed to customers will remain unaltered. Credit availed of from suppliers will continue to remain at the present level i.e. 2 months. Lag in payment of wages and expenses will continue to remain half a month.

You are required to assess the additional working capital requirement, if the policy to increase output is implemented.

A-20.

Statement of Cost at Single Shift and Double Shift Working

Particulars	Single Shift (24,000)		Double Shift (48,000)	
	P. U.	**Total**	**P. U.**	**Total**
Raw Materials	6.00	1,44,000	5.40	2,59,200
Wages Variable	3.00	72,000	3.00	1,44,000
Wages Fixed	2.00	48,000	1.00	48,000
Prime Cost	**11.00**	**2,64,000**	**9.40**	**4,51,200**
Overhead Variable	1.00	24,000	1.00	48,000
Overhead Fixed	4.00	96,000	2.00	96,000
Total Cost	**16.00**	**3,84,000**	**12.40**	**5,95,200**
Profit	2.00	48,000	5.60	2,68,800
Sales Value	**18.00**	**4,32,000**	**18.00**	**8,64,000**

Statement of Working Capital for Single Shift and Double Shift Working

Particulars	Single Shift (24,000)			Double Shift (48,000)		
	P. U.	**Units**	**Total**	**P. U.**	**Units**	**Total**
(A)Current Assets:						
Raw Materials Stock	6.00	6,000	36,000	5.40	12,000	64,800
WIP Stock	11.00	2,000	22,000	9.40	2,000	18,800
FG Stock	16.00	4,500	72,000	12.40	9,000	1,11,600
Debtors	16.00	6,000	96,000	12.40	12,000	1,48,800
Total (A)	**-**	**-**	**2,26,000**	**-**	-	**344,000**
(B) Current Liabilities:						
Creditors	6.00	4,000	24,000	5.40	8,000	43,200
Outstanding Wages	5.00	1,000	5,000	4.00	2,000	8,000
Outstanding Overheads	5.00	1,000	5,000	3.00	2,000	6,000
Total (B)	**-**	**-**	**34,000**	**-**	-	**57,200**

Working Capital (A - B)	**-**	**-**	**1,92,000**	**-**	-	**2,86,800**

Increase in working capital requirement is Rs.**94,800 (**Rs.**2,86,800 -** Rs.**1,92,000).**

Notes:

1. The quantity of material in process will not change due to double shift working since work started in the first shift will be completed in the second shift.

2. It is given in the question that the WIP is valued at prime cost hence, it is assumed that the WIP is 100% complete in respect of material and labour.

3. In absence of any information on proportion of credit sales to total sales, debtors quantity has been doubled for double shift.

4. It is assumed that all purchases are on credit.

5. The valuation of work-in-progress based on prime cost as per the policy of the company

Q-21. Following information is forecasted by the CS Limited for the year ending 31st March 2020:

	Bal as at 01.04.19	**Bal as at 31.03.20**
Raw Material	45,000	65,356
Work-in-process	35,000	51,300
Finished goods	60,161	70,175
Receivables	1,12,123	1,35,000
Payables	50,079	70,469

Annual purchases of raw materials (all credit)	4,00,000
Annual cost of production	7,50,000
Annual cost of goods sold	9,15,000
Annual operating cost	9,50,000
Sales (all credit)	11,00,000
You may take one year as equal to 365 days	

You are required to calculate:

(i) Net operating cycle period.

(ii) Number of operating cycles in the year.

(iii) Amount of working capital requirement.

A-21.

(i) Operating cycle = **R + W + F + D – C**

= 53 + 21 + 26 + 41 – 55 = **86 Days**

Calculations:

Raw materials storage period (R) = Average stock of raw materials / Average cost of raw materials consumption per day

=55,178 /3,79,444÷365 = **53 days**

Raw materials consumption = Opening RM + Purchases – Closing RM

= 45,000 + 4,00,000 – 65,356 = **3,79,644**

WIP holding period = Average stock of WIP / Average cost of production per day

= 43,150 / 7,50,000 ÷ 365 = **21 days**

Finished Goods storage period = Average stock of FG / Average cost of goods sold per day

= 65,178 / 9,15,000 ÷ 365 = **26 days**

Debtors collection period = Average book debts / Average credit sales per day

= 1,23,562 / 11,00,000 ÷ 365 = **41 days**

Credit period availed = Average trade creditors / Average credit purchases per day

= 60,274 / 4,00,000 ÷ 365 = **55 days**

Calculation of averages:

1. Average stock of raw materials	= (45,000 + 65,356) ÷ 2	= 55,178
2. Average stock of WIP	= (35,000 + 51,300) ÷ 2	= 43,150
3. Average stock of FG	= (60,181 + 70,175) ÷ 2	= 65,178
4. Average receivables	= (1,12,123 + 1,35,000) ÷ 2	= 1,23,562
5. Average payables	= (50,079 + 70,469) ÷ 2	= 60,274

(ii) Number of operating cycles in the year:

= 365 / Operating cycle period = 365 / 86 = **4.244 times**

(iii) Amount of working capital required:

= Annual operating cost / Number of operating cycles = 9,50,000/ 4.244 = Rs.**2,23,845**

Or

Annual operating cost /365 × Operating cycle period= 9,50,000/365 = Rs.**2,23,836**

Q - 3,5,7,8

TOPIC – 6. CAPITAL BUDGETING/INVESTMENT DECISION

Q-21.

XYZ Ltd is planning to introduce a new product with a projected life of 8 years. The project to be set up in a backward region, qualifies for a one time (as its starting) tax free subsidy from the government of Rs.20,00,000 equipment cost will be Rs.140 lakhs and additional equipment costing Rs.10,00,000 will be needed at the beginning of the third year. At the end of 8 years the original equipment will have no resale value but the supplementary equipment can be sold for Rs.1,00,000. A working capital of Rs.15,00,000 will be needed. The sales volume over the eight years period has been forecasted as follows:

Year	Units
1	80,000

2	1,20,000
3-5	3,00,000
6-8	2,00,000

A sale price of Rs.100 per unit is expected and variable expenses will amount to 40% of sales revenue. Fixed cash operating costs will amount to Rs.16,00,000 per year. In addition an extensive advertising campaign will be implemented requiring annual outlays as follows:

Year	(Rs. in lakhs)
1	30
2	15
3-5	10
6-8	4

The company is subject to 50% tax rate and considers 12% to be an appropriate after tax cost of capital for this project. The company follows the straight line method of depreciation.

Should the project be accepted?

A-21.

Net Present Value

Year	Particulars	Rs.	DF @ 12%	PV
0	Initial outflows (140 – 20 + 15) Lakhs	(1,35,00,000)	1.000	(1,35,00,000)
1	CFAT	2,00,000	0.893	1,78,600
2	CFAT less Additional Equipment (34,50,000 – 10,00,000)	24,50,000	0.797	19,52,650
3 - 5	CFAT	85,25,000	1.915	1,63,25,375
6 – 8	CFAT	58,25,000	1.363	79,39,475
8	Working Capital and Salvage (15,00,000 + 1,00,000)	16,00,000	0.404	6,46,400

	NPV			**1,35,42,500**

Company should accept the proposal having positive NPV of the project.

Working Notes:

1. Statement of CFAT

Particulars	**1**	**2**	**3 – 5**	**6 – 8**
Units sold	80,000	1,20,000	3,00,000	2,00,000
Sales @ Rs.100 p.u.	80,00,000	1,20,00,000	3,00,00,000	2,00,00,000
Less: VC @ 40%	32,00,000	48,00,000	1,20,00,000	80,00,000
Contribution	48,00,000	72,00,000	1,80,00,000	1,20,00,000
Less: Advertisement expenses	(30,00,000)	(15,00,000)	(10,00,000)	(4,00,000)
Less: Cash fixed cost	(16,00,000)	(16,00,000)	(16,00,000)	(16,00,000)
Less: Depreciation	(15,00,000)	(15,00,000)	(16,50,000)	(16,50,000)
PBT	(13,00,000)	26,00,000	1,37,50,000	83,50,000
Less: Tax @ 50%	-	(6,50,000)	(68,75,000)	(41,75,000)
PAT	(13,00,000)	19,50,000	68,75,000	41,75,000
Add: Depreciation	15,00,000	15,00,000	16,50,000	16,50,000
CFAT	2,00,000	34,50,000	85,25,000	58,25,000

2. Depreciation:

Main equipment (t0 - t8) = = Original Cost- Subsidy - Salvage/ Life of Equipment = 1,20,00,000 / 8 Years = **15,00,000**

Additional equipment (t_3 - t_8) = Original Cost - Salvage / Life of Equipment= 9 00 000/ 6Years = **1, 50,000**

3. Tax for year 2 = 50% of (26, 00,000 – 13,00,000) = **6,50,000**

Note: As per section 32 of Income Tax Act "Depreciation is not allowed on subsidized part of asset"

Q-22. A Ltd. Is considering the purchase of a machine which will perform some operations which are at present preformed by workers. Machines X and Y are alternative models. The following details are available:

Particulars	Machine X	Machine Y
Cost of machine	Rs.1,50,000	Rs.2,40,000
Estimated life of machine	5 years	6 years
Estimated cost of maintenance per annum	Rs.7,000	Rs.11,000
Estimated cost of indirect materials per annum	Rs.6,000	Rs.8,000
Estimated savings in scrap per annum	Rs.10,000	Rs.15,000
Estimated cost of supervision per annum	Rs.12,000	Rs.16,000
Estimated saving in wages per annum	Rs.90,000	Rs.1,20,000

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

(a) Average rate of return method, and

(b) Present value index method assuming cost of capital being 10%.

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

A-22.

(a) Statement Showing Evaluation of Two Machines (ARR)

Particulars	**Machine X**	**Machine Y**
A. Savings:		
Saving in scrap (materials)	10,000	15,000
Savings in wages	90,000	1,20,000
Total savings (A)	1,00,000.	1,35,000
B. Cost:		
Cost of maintenance	7,000	11,000
Cost of indirect materials	6,000	8,000
Cost of supervision	12,000	16,000
Depreciation (Cost of machine ÷ Life of machine)	30,000	40,000
Total cost (B)	55,000	75,000
Profit (A – B)	**45,000**	**60,000**
Less: Tax @ 30%	13,500	18,000
Profit after tax	**31,500**	**42,000**
ARR $\left(\frac{\text{PAT}}{\text{INVESTMENT}} \times 100\right)$	$\left(\frac{31,500}{1,50,000} \times 100\right)$ **21%**	$\left(\frac{42,000}{2,40,000} 100\right)$ **17.50%**
Selection as per ARR	**Yes**	**No**

(b) Statement Showing Evaluation of Two Machines (PI)

Particulars	Machine X	Machine Y
Profit after tax	31,500	42,000
Add: Depreciation	30,000	40,000
CFAT	61,500	82,000
Annuity factor for 5 years and 6 years	3.79	4.354
PV of Inflows	2,33,085	3,57,028
PV of outflows (Initial outflows × 1.000)	1,50,000	2,40,000
PI $\left(\frac{\textbf{PV of Inflow}}{\textbf{PV of Onflow}}\right)$	$\left(\frac{\mathbf{2,33,085}}{\mathbf{1,50,000}}\right)$	$\left(\frac{\mathbf{3,57,028}}{\mathbf{2,40,000}}\right)$
	1.5539	**1.4876**
Selection as per PI	**Yes**	**No**

Q-23. Elite Cooker Company is evaluating three investment situations: **(1)** produce a new line of aluminum skillets, **(2)** expand its existing cooker line to include several new sizes, and **(3)** develop a new, higher-quality line of cookers. If only the project in question is undertaken, the expected present values and the amounts of investment required are:

Project	**Investment required**	**Present value of future cash flows**
1 2 3	Rs.2,00,000	Rs.2,90,000

	Rs.1,15,000 Rs.2,70,000	Rs.1,85,000 Rs.4,00,000

If projects 1 and 2 are jointly undertaken, there will be no economies; the investments required and present values will simply be the sum of the parts. With projects 1 and 3, economies are possible in investment because one of the machines acquired can be used in both production processes. The total investment required for projects 1 and 3 combined is Rs.4,40,000. If projects 2 and 3 are undertaken, there are economies to be achieved in marketing and producing the products but not in investment. The expected present value of future cash flows for projects 2 and 3 is Rs.6,20,000. If all three projects are undertaken simultaneously, the economies noted will still hold. However, a Rs.1,25,000 extension on the plant will be necessary, as space is not available for all three projects.

Which project or projects should be chosen?

Answer

Statement of Cumulative NPV of Different Combinations

Project	Investment required	PV of future cash flows	Net Present Value
1	Rs.2,00,000	Rs.2,90,000	Rs.90,000
2	Rs.1,15,000	Rs.1,85,000	Rs.70,000
3	Rs.2,70,000	Rs.4,00,000	Rs.1,30,000
1 and 2	Rs.3,15,000	Rs.4,75,000	Rs.1,60,000
1 and 3	Rs.4,40,000	Rs.6,90,000	Rs.2,50,000
2 and 3	Rs.3,85,000	Rs.6,20,000	Rs.2,35,000
1, 2 and 3	Rs.6,80,000*****	Rs.9,10,000	Rs.2,30,000
(Refer working note)			

Calculation of total investment required if all the three projects are undertaken simultaneously:

Total investment = Investment in project 1 & 3 + Investment in project 2 + Plant extension cost

= 4,40,000 + 1,15,000 + 1,25,000

= Rs.**6,80,000**

Advise: Projects 1 and 3 should be chosen, as they provide the highest net present value.

Q-24. Alpha Company is considering the following investment projects:

Projects	**Cash Flows (**Rs.**)**			
	C0	**C1**	**C2**	**C3**
A	-10,000	+10,000		
B	-10,000	+7,500	+7,500	
C	-10,000	+2,000	+4,000	+12,000
D	-10,000	+10,000	+3,000	+3,000

(a) Rank the projects according to each of the following methods: **(i)** Payback, **(ii)** ARR, **(iii)** IRR and **(iv)** NPV, assuming discount rates of 10 and 30 per cent.

(b) Assuming the projects are independent, which one should be accepted? If the projects are mutually exclusive, which project is the best?

A-24.

(a) Calculation of Payback, ARR, IRR and NPV:

(i)	**Payback Period:**				
	Project A	=	10,000÷10,000	=	**1 year**
	Project B	=	7,500 + 2,500÷7,500	=	**1.33 years**
	Project C	=	2,000 + 4,000 + 4,000÷12,000	=	**2.33 years**
	Project D	=	10,000÷10,000	=	**1 year**

(ii) ARR using average investment base:

Project A = $\left(\frac{(10,000-10,000)}{10,000 \times ½} \times 100\right)$ =0%

Project B = $\left(\frac{(15,000-10,000)\div 2}{10,000 \times ½} \times 100\right)$ =50%

Project C = $\left(\frac{(18,000-10,000\div 3)}{10,000 \times ½} \times 100\right)$ =53.33%

Project D = $\left(\frac{(10,000-10,000\div 3)}{10,000 \times ½} \times 100\right)$ = 40%

Note: Average book profit is found by deducting initial investment, otherwise student may deduct depreciation year wise.

(iii) IRR:

Project A (The net cash proceeds in year 1 are just equal to investment):

IRR = **0%**

Project B (Uniform cash inflow, so we can calculate IRR by PVAF):

PVAF for 2 years = 10,000÷7,500 = 1.33 (This factor is found under 32%)

IRR = **32%**

Project C (Unequal cash inflow, so we can calculate IRR by computing NPV using random rates):

NPV at 20% = 2,000 × 0.833 + 4,000 × 0.694 + 12,000 × 0.579 - 10,000

= +1,390

NPV at 30% = 2,000 × 0.769 + 4,000 × 0.592 + 12,000 × 0.455 - 10,000

= -634

IRR = L + NPV_L/ NPV_L- NPV_H ×(H-L) = 20% + 1,390/1,390-(-634)×(30% - 20%)

=26.87%

Project D (Unequal cash inflow, so we can calculate IRR by computing NPV using random rates):

NPV at 20% = 10,000 × 0.833 + 3,000 × 0.694 + 3,000 × 0.579 - 10,000

= +2,149

NPV at 30% = 10,000 × 0.769 + 3,000 × 0.592 + 3,000 × 0.455 - 10,000

= +831

NPV at 40% = 10,000 × 0.714 + 3,000 × 0.510 + 3,000 × 0.364 - 10,000

= -238

IRR = L + NPV_L/ NPV_L- NPV_H ×(H-L) = 30% + 831/831-(-238) × (40% - 30%)

=37.77%

(iv) NPV:

Project A:

NPV at 10% = 10,000 × 0.909 – 10,000 = **- 910**

NPV at 30% = 10,000 × 0.769 = **-2,310**

Project B:

NPV at 10% = 7,500 × (0.909 + 0.826) – 10,000 = **+3,013**

NPV at 30% = 7,500 × (0.769 + 0.592) – 10,000 = **+208**

Project C:

NPV at 10% = 2,000 × 0.909 + 4,000 × 0.826 +12,000 × 0.751 – 10,000

= **+4,134**

NPV at 30% = 2,000 × 0.769 + 4,000 × 0.592 + 12,000 × 0.455 – 10,000

= **-633**

Project D:

NPV at 10% = 10,000 × 0.909 + 3,000 × (0.826 + 0.751) – 10,000 = **+3,821**

NPV at 30% = 10,000 × 0.769 + 3,000 × (0.592 + 0.455) – 10,000 = **+831**

The projects are ranked as follows according to the various methods:

Ranks					
Projects	**PBP**	**ARR**	**IRR**	**NPV 10%**	**NPV 30%**
A	1	4	4	4	4
B	2	2	2	3	2
C	3	1	3	1	3
D	1	3	1	2	1

(b) Payback and ARR are theoretically unsound method for choosing between the investment projects. Between the two time-adjusted (DCF) investment criteria, NPV and IRR, NPV gives consistent results. If the projects are independent (and there is no capital rationing), either IRR or NPV can be used since the same set of projects will be accepted by any of the methods. In

the present case, except Project A all the three projects should be accepted if the discount rate is 10%. Only Projects B and D should be undertaken if the discount rate is 30%.

If it is assumed that the projects are mutually exclusive, then under the assumption of 30% discount rate, the choice is between B and D (A and C are unprofitable). Both criteria IRR and NPV give the same results – D is the best. Under the assumption of 10% discount rate, ranking according to IRR and NPV conflict (except for Project A). If the IRR rule is followed, Project D should be accepted. But the NPV rule tells that Project C is the best. The NPV rule generally gives consistent results in conformity with the wealth maximization principle. Therefore, Project C should be accepted following the NPV rule.

Q-25. APZ limited is considering selecting a machine between two machines 'A' and 'B'. The two machines have identical capacity, do exactly the same job, but designed differently.

Machine A costs Rs.8,00,000, having useful life of three years. It costs Rs.1,30,000 per year to run. Machine B is an economic model costing Rs.6,00,000, having useful life of two years. It costs Rs.2,50,000 per year to run.

The cash flows of machine 'A' and 'B' are real cash flows. The costs are forecasted in rupees of constant purchasing power. Ignore taxes. The opportunity cost of capital is 10%.

The present value factors at 10% are:

Years	**t1**	**t2**	**t3**
PVIF0.10t	0.9091	0.8264	0.7513
PVIFA0.10.2 = 1.7355			
PVIFA0.10.3 = 2.4868			

Which machine would you recommend the company to buy?

A-25.

Statement Showing Evaluation of Two Machines

Particulars	**Machine 'A'**	**Machine 'B**
Initial outflow/ Purchase cost of machines	8,00,000	6,00,000
Annual running cost	1,30,000	2,50,000
Life of machines	3 years	2 years
PV of annual running cost	3,23,284	4,33,875
(Annual running cost × PVIFA)	(1,30,000 × 2.4868)	(2,50,000 × 1.7355)
Present value of total outflow (Initial outflow + PV of annual running cost)	11,23,284	10,33,875
÷ PVIFA	÷ 2.4868	÷ 1.7355
Equivalent Annual outflow	**4,51,699**	**5,95,722**

Select the Machine A having lower equivalent annualized outflow

TOPIC – 7. RISK ANALYSIS IN CAPITAL BUDGETING

Q-26. Probabilities for net cash flows for 3 years a project are as follows:

Year 1		**Year 2**		**Year 3**	
Cash Flow (Rs.)	**Probability**	**Cash Flow (Rs.)**	**Probability**	**Cash Flow (Rs.)**	**Probability**
2,000	0.1	2,000	0.2	2,000	0.3
4,000	0.2	4,000	0.3	4,000	0.4
6,000	0.3	6,000	0.4	6,000	0.2
8,000	0.4	8,000	0.1	8,000	0.1

Calculate the expected net cash flows. Also calculate the net present value of the expected cash flow, using 10 per cent discount rate. Initial Investment is Rs.**10,000.**

A-26.

Year 1			**Year 2**			**Year 3**		
Cash Flow (Rs.)	**Probability**	**Expected Value (Rs.)**	**Cash Flow (Rs.)**	**Probability**	**Expected Value (Rs.)**	**Cash Flow (Rs.)**	**Probability**	**Expected Value (Rs.)**
2,000	0.1	200	2,000	0.2	400	2,000	0.3	600
4,00	0.2	800	4,00	0.3	1,200	4,00	0.4	1,600

0			0			0		
6,000	0.3	1,800	6,000	0.4	2,400	6,000	0.2	1,200
8,000	0.4	3,200	8,000	0.1	800	8,000	0.1	800
ENCF		**6,000**			**4,800**			**4,200**

The net present value of the expected value of cash flow at 10 per cent discount rate has been determined as follows:

Expected NPV = 6,000 × 0.909 + 4,800 × 0.826 + 4,200 × 0.751 – 10,000

= Rs.2,573

Q-27. Gaurav Ltd. using certainty-equivalent approach in the evaluation of risky proposals. The following information regarding a new project is as follows:

Year	**Expected cash flow (**Rs.**)**	**Certainty Equivalent coefficient**
0	(4,00,000)	1.0
1	+3,20,000	0.8
2	2,80,000	0.7
3	2,60,000	0.6
4	2,40,000	0.4
5	1,60,000	0.3

Riskless rate of return on the government securities is 6%. Determine whether the project should be accepted.

A-27.

Statement Showing the Net Present Value of Project

Year	**Cash Flow (**Rs.**)**	**C.E. (b)**	**Adjusted Cash flow (**Rs.**) (c) = (a) × (b)**	**PVF at 6% (d)**	**PV (**Rs.**) (e) = (c) ×(d)**

	(a)				
0	(4,00,000)	1.0	(4,00,000)	1.000	(4,00,000)
1	3,20,000	0.8	2,56,000	0.943	2,41,408
2	2,80,000	0.7	1,96,000	0.890	1,74,440
3	2,60,000	0.6	1,56,000	0.840	1,31,040
4	2,40,000	0.4	96,000	0.792	76,032
5	1,60,000	0.3	48,000	0.747	35,856
Net Present Value					**2,58,776**

Yes accept the proposal having positive NPV.

Q-28. X Ltd is considering its New Product 'with the following details of three years project:

Sr. No.	Particulars	Figures
1	Initial capital cost	Rs.400 Cr
2	Annual unit sales	5 Cr
3	Selling price per unit	Rs.100
4	Variable cost per unit	Rs.50
5	Fixed costs per year	Rs.50 Cr
6	Discount Rate	6%

1. Calculate the NPV of the project.

2. Find the impact on the project's NPV of a 2.5 per cent adverse variance in each variable. Which variable is having maximum effect.

A-28.

1. Calculation of Net Cash Inflow per year:

Variables	Particulars	Figures
A	Selling Price Per Unit (A)	Rs.100

B	Variable Cost Per Unit (B)	Rs.50
C	Contribution Per Unit (C = A - B)	Rs.50
D	Number of Units Sold Per Year (D)	5 Cr.
E	Total Contribution (E = C × D)	Rs.250 Cr.
F	Fixed Cost Per Year (F)	Rs.50 Cr.
G	Net Cash Inflow Per Year (G = E - F)	Rs.200 Cr.

Calculation of Net Present Value (NPV) of the Project:

Year	**Year Cash Flow (**Rs. **in Cr.)**	**Discounting @ 6%**	**Present Value (**Rs. **in Cr.)**
0	-400	1.000	-400
1	200	0.943	188.60
2	200	0.890	178
3	200	0.840	168
Net Present Value			**134.60**

Here NPV represent the most likely outcomes and not the actual outcomes. The actual outcome can be lower or higher than the expected outcome.

2. Sensitivity Analysis considering 2.5 % Adverse Variance in each variable

S. No.	**Change in variable**	**Base**	**Initial Cash Flow increased to** Rs.**410 crore**	**Selling Price per Unit Reduced to** Rs.**97.5**	**Variable Cost Per Unit increased to** Rs.**51.25**	**Fixed Cost Per Unit increased to** Rs.**51.25**	**Units sold per year reduced to** Rs.**4.875 crore**
A	Selling Price Per Unit (A)	100	100	97.5	100	100	100
B	Variable Cost Per Unit (B)	50	50	50	51.25	50	50

C	Contribution Per Unit (C = A - B)	50	50	47.5	48.75	50	50
D	Number of Units Sold Per Year (in Crores)	5	5	5	5	5	4.875
E	Total Contribution (E = C× D)	250	250	237.5	243.75	250	243.75
F	Fixed Cost Per Year (in Crores)	50	50	50	50	51.25	50
G	Net Cash Inflow Per Year (G = E-F)	200	200	187.5	193.75	198.75	193.75
H	(G × 2.673)	543.60	543.60	501.19	517.89	531.26	517.89
I	Initial Cash Flow	400	410	400	400	400	400
J	NPV	134.60	124.60	101.19	117.89	131.26	117.89
K	Percentage Change in NPV	-	-7.43%	-24.82%	-12.41%	-2.48%	-12.41%

The above table shows that the by varying one variable at a time by 2.5% while keeping the others constant, the impact in percentage terms on the NPV of the project. Thus it can be seen that the change in selling price has the maximum effect on the NPV by 24.82 %.

Q-29. XYZ Ltd. is considering a project "A" with an initial outlay of Rs.14,00,000 and the possible three cash inflow attached with the project as follows:

Particular	Year 1	Year 2	Year 3
Worst Case	4,50,000	4,00,000	7,00,000
Most Likely	5,50,000	4,50,000	8,00,000
Best Case	6,50,000	5,00,000	9,00,000

Cost of capital as 9%, determine NPV in each scenario. If XYZ Ltd is certain about the most likely result but uncertain about the third year's cash flow, what will be the NPV expecting worst scenario in the third year.

A-29.

The possible outcomes will be as follows:

Year	PVF @ 9%	Worst Case		Most Likely		Best Case	
		Cash Flow (Rs. 000)	PV (Rs. 000)	Cash Flow (Rs. 000)	PV (Rs. 000)	Cash Flow (Rs. 000)	PV (Rs. 000)
0	1.000	(1,400)	(1,400)	(1,400)	(1,400)	(1,400)	(1,400)
1	0.917	450	412.65	550	504.35	650	596.05
2	0.842	400	336.80	450	378.90	500	421.00
3	0.772	700	540.40	800	617.60	900	694.80
NPV			**-110.15**		**100.85**		**311.85**

NPV with most likely but expecting worst scenario in the third year:

NPV = 5,50,000 / (1+0.09)+4,50,000 / (1+0.09)2+7,00,000 / (1+0.09)3 - - Rs.14,00,000 = **Rs.23,872**

TOPIC -8 COST OF CAPITAL

Q-30. A company issued 10,000, 15% Convertible debentures of Rs.100 each with a maturity period of 5 years. At maturity the debenture holders will have the option to convert the debentures into equity shares of the company in the ratio of 1:10 (10 shares for each debenture). The current market price of the equity shares is Rs.12 each and historically the growth rate of the shares are 5% per annum.

Compute the cost of debentures assuming 35% tax rate.

A-30.

Determination of Redemption value:

Higher of

(i) The cash value of debentures = Rs.100

(ii) Value of equity shares = 10 shares × Rs.12(1 + 0.05)5

= 10 shares × 15.312 = Rs.153.12

Rs.153.12 will be taken as redemption value as it is higher than the cash option and attractive to the investors.

Calculation of Cost of Convertible debenture:

Alternative 1: Using approximation method:

$$Kd = I\ (1-t) + \left(\frac{RV-NP}{n}\right) \Big/ \frac{RV-NP}{2} \times 100 = \frac{15\ (1-0.35) + 153.12-100/\ 5}{153.12 + 100/2}$$

= **16.09%**

Alternative 2: Using present value method:

Calculation of NPV at two discount rates:

Year	Cash Flow	Present Value		Present Value	
		10%	**DCF**	**20%**	**DCF**
0	100	1.000	(100)	1.000	(100)
1 - 5	9.75	3.352	32.68	2.991	29.16
5	153.12	0.497	76.10	0.402	61.55
NPV			+8.78		-9.29

$IRR/K_d = LR + NPV_L / NPV_L – NPV_H \times (H - L) = 15\% + 8.78/8.78-(-9.29) \times (20\% - 15\%)$

= **17.43%**

Q-31. RBML is proposing to sell a 5-year bond of Rs. 5,000 at 8 per cent rate of interest per annum. The bond amount will be amortised equally over its life.

What is the bond's present value for an investor if he expects a minimum rate of return of 6 per cent?

A-31.

The amount of interest will go on declining as the outstanding amount of bond will be reducing due to amortization. The amount of interest for five years will be:

First year	:	Rs.5,000 × 0.08	=	Rs.400
Second year	:	(Rs.5,000 – Rs.1,000) × 0.08	=	Rs.320
Third year	:	(Rs.4,000 – Rs.1,000) × 0.08	=	Rs.240
Fourth year	:	(Rs.3,000 – Rs.1,000) × 0.08	=	Rs.160; and
Fifth year	:	(Rs.2,000 – Rs.1,000) × 0.08	=	Rs.80.

The outstanding amount of bond will be zero at the end of fifth year. Since RBML will have to return Rs.1,000 every year, the outflows every year will consist of interest payment and repayment of principal:

First year	:	Rs.1,000 + Rs.400	=	Rs.1,400
Second year	:	Rs.1,000 + Rs.320	=	Rs.1,320
Third year	:	Rs.1,000 + Rs.240	=	Rs.1,240
Fourth year	:	Rs.1,000 + Rs.160	=	Rs.1,160; and
Fifth year	:	Rs.1,000 + Rs.80	=	Rs.1,080.

The above cash flows of all five years will be discounted with the cost of capital. Here the expected rate i.e. 6% will be used. Value of the bond is calculated as follows:

$VB = 1400/(1.06)^1+1320/(1.06)^2+1240/(1.06)^3+1160/(1.06)^4+1080/(1.06)^4$

Q-32. Mr. Mehra had purchased a share of Alpha Limited for Rs.1,000. He received dividend for a period of five years at the rate of 10 percent. At the end of the fifth year, he sold the share of Alpha Limited for Rs.1,128.

You are required to compute the cost of equity as per realized yield approach.

A-32.

Calculation of IRR/Ke

$Ke = LR + NPV_L / NPV_L – NPV_H \times (H - L) = 11\% + 38.50 / 38.50\text{-}(-35.80) \times (13\% - 11\%)$

= **12.04% or 12%**

Calculation of NPV at two discount rates:

Year	Cash Flow	Present Value		Present Value	
		11%	DCF	13%	DCF
0	1,000	1.000	(1,000)	1.000	(1,000)
1 - 5	100	3.696	369.60	3.517	351.70
5	1,128	0.593	668.90	0.543	612.50
NPV			+38.50		-35.80

Q-33. Calculate the WACC using the following data by using:

(a) Book value weights

(b) Market value weights

The capital structure of the company is as under:

Debentures (Rs.100 per debenture) Rs.5,00,000

Preference shares (Rs.100 per share) Rs.5,00,000

Equity shares (Rs.10 per share)	Rs.10,00,000
Debentures	Rs.105 per debenture
Preference shares	Rs.110 per share
Equity shares	Rs.24 each

Additional information:

(i) Rs.100 per debenture redeemable at par, 10% coupon rate, 4% floatation cost, 10 years of maturity. The market price per debenture is Rs.105.

(ii) Rs.100 per preference share redeemable at par, 5% coupon rate, 2% floatation cost, 10 years of maturity.

(iii) Equity share has Rs.4 floatation cost and market price per share of Rs.24.

The next year expected dividend is Rs.1 per share with annual growth of 5%. The firm has a practice of paying all earnings in the form of dividends. Corporate Income-tax rate is 50%.

A-33.

(a) Calculation of Weighted Average Cost of Capital by Using Book Value Weight

Particular	Book Value	Weight	Cost (K)	Weighted cost
10% Debenture	5,00,000	0.25	5.51%	1.38%
5% Preference share	5,00,000	0.25	5.25%	1.31%
Equity Share Capital	10,00,000	0.50	10.00%	5.00%
Total	**20,00,000**	**1.00**	**WACC**	**7.69%**

(b) Calculation of Weighted Average Cost of Capital by Using Market Value Weight

Particular	Market value	Weight	Cost	Weighted cost
10% Debenture	5,25,000	0.151	5.51%	0.83%
5% Preference share	5,50,000	0.158	5.25%	0.83%
Equity Share Capital	24,00,000	0.691	10.00%	6.90%
Total	**34,75,000**	**1.0000**	**WACC**	**8.56%**

Working notes:

$K_e = D_1 / P_0 – F + g$ = 1/ 24 +0.05 = 10%

$K_d = I(1-t) + (RV-NP/n)/ RV+NP/2$ = 109(1-0.05)+(100-96/10) / 100+96/2 ×100

= **5.51%**

K_p = PD++(RV-NP/n) / RV+NP/2 ×100 = 5+(100-98/10) / 100+98/2 ×100 = 5.25%

Q-34. Determine the cost of capital of Best Luck Limited using the book value (BV) and market value (MV) weights from the following information:

Sources of Fund	Book Value	Market Value
Equity Shares	Rs.1,20,00,000	Rs.2,00,00,000
Retained Earnings	Rs.30,00,000	Nil
Preference Shares	Rs.36,00,000	Rs.33,75,000
Debentures	Rs.9,00,000	Rs.10,40,000

Additional Information:

1. Equity: Equity shares are quoted at Rs.130 per share and a new issue priced at Rs.125 per share will be fully subscribed; flotation costs will be Rs.5 per share.

2. Dividend: During the previous 5 years, dividends have steadily increased from Rs.10.60 to Rs.14.19 per share. Dividend at the end of the current year is expected to be Rs.15 per share.

3. Preference Shares: 15% Preference shares with face value of Rs.100 would realize Rs.105 per share.

4. Debentures: The company proposes to issue 11 year 15% debentures but the yield on debentures of similar maturity and risk class is 16%; flotation cost is 2%.

5. Tax: Corporate tax rate is 35%. Ignore dividend tax.

A-34.

(a) Calculation of Weighted Average Cost of Capital by Using Book Value Weight

Particulars	Book Value	Weight (W)	Cost (K)	Weighted cost

Equity Shares	Rs.1,20,00,000	0.615	0.1850	0.1138
Retained Earnings	Rs.30,00,000	0.154	0.1800	0.0277
Preference Shares	Rs.36,00,000	0.185	0.1429	0.0264
Debentures	Rs.9,00,000	0.046	0.1095	0.0050
Total	Rs.**1,95,00,000**	**1.000**	**WACC**	**0.1729**

WACC (K_o) = **0.1729 or 17.29%**

(b) Calculation of Weighted Average Cost of Capital by Using Market Value Weight

Particulars	Market Value	Weight (W)	Cost (K)	Weighted cost
*Equity Shares	Rs.1,60,00,000	0.655	0.1850	0.1212
*Retained Earnings	Rs.40,00,000	0.164	0.1800	0.0296
Preference Shares	Rs.33,75,000	0.138	0.1429	0.0197
Debentures	Rs.10,40,000	0.043	0.1095	0.0047
Total	Rs.**2,44,15,000**	**1.000**	**WACC**	**0.1752**

WACC (K_o) = **0.1752 or 17.52%**

Working notes:

K_e = D_1/P_0-F + g = 15/125-5 + 6% = 18.50%

g = $\sqrt[5]{\frac{14.19}{10.60}}$ = 6%

K_r = D1/P0 + g = 15/125 + 6% = 18.00%

K_d =I (1−t) + (RV−NP/n)/(RV + NP/2) × 100 = 15 (1−0.35) + (100−91.75/11)/(100 + 91.75/2) × 100 = **10.95%**

K_p = PD/NP × 100 = 15/105 × 100 = **14.29%**

MV of Debenture = Interest / Market rate of Interest = 15% of 100 / 16% × 100 = Rs.**93.75**

NP of Debenture = MV of Debenture – Floatation Cost

= Rs.93.75 - Rs.2 (2% of Rs.100) = Rs.**91.75**

*Since yield on similar type of debentures is 16 per cent, the company would be required to offer debentures at discount.

Market value of Equity Shares = Rs.2,00,00,000 × 120/150 = Rs. 1,60,00,000

Market value of Retained Earnings = Rs.2,00,00,000 × 30/150 = Rs. 40,00,000

*Market Value of equity has been apportioned in the ratio of Book Value of equity and retained earnings.

TOPIC – 9 , CAPITAL STRUCTURE

Q-35. X Ltd. and Y Ltd. are identical except that the former uses debt while the latter does not. Thus levered firm has issued 10% Debentures of Rs.9,00,000. Both the firms earn EBIT of 20% on total assets of Rs.15,00,000. Assuming tax rate is 50% and capitalization rate is 15% for an all equity firm.

(i) Compute the value of the two firms using NI approach.

(ii) Compute the value of the two firms using NOI approach.

(iii) Calculate the overall cost of capital, Ko for both the firms using NOI approach.

A-35.

(i) Calculation of Value of firms by NI Approach:

Particulars	**X Ltd (**Rs.**)**	**Y Ltd (**Rs.**)**
EBIT (20% of Rs.15,00,000)	3,00,000	3,00,000
Less: Interest on Debt	90,000	-

Profit Before Tax	2,10,000	3,00,000
Less: Tax @ 50%	1,05,000	1,50,000
Profit After Tax	1,05,000	1,50,000
Equity Capitalization rate	15%	15%
Market Value of Equity (PAT ÷ K_e)	7,00,000	10,00,000
Value of debt	9,00,000	-
Total Value of the Firm	**16,00,000**	**10,00,000**

(ii) Values of the firm as per NOI Approach:

Value of unlevered firm = EBIT(1-t)/K_o = 3,00,000(1-0.30)

= Rs.10,00,000

Value of levered firm (X Ltd) = Value of unlevered firm + Debt × tax

= Rs.10,00,000 + 9,00,000 × 50% = Rs.**14,50,000**

This value of Rs.14,50,000 can be bifurcated into Debt of Rs.9,00,000 and Equity of Rs.5,50,000.

(iii) Calculation of K_o under NOI Approach:

Y Ltd (K_o) = Ke = **15%**

X Ltd (K_o) = KeWe + KdWd

= 19.1% × + 5% × = **10.34%** 000 50 14 000 50 5 , , , , 000 ,50,14000 ,00,9

Or

X Ltd (K_o) = × 100 V) t(EBIT1

= × 100 = **10.34%** 000 ,50,14) 50.01(000,00,3

Working Notes:

Calculation of K_e of X Ltd:

K_e = Earning for Equity Market value of Equity × 100

= (3,00,000−90,000) (1−0.50) 5,50,000 × 100 = **19.10%**

Q-36. RES Ltd. is an all equity financed company with a market value of Rs.25,00,000 and cost of equity Ke 21%. The company wants to buyback equity shares worth Rs.5,00,000 by issuing and raising 15% perpetual amount (Debt).

Rate of tax may be taken as 30%. After the capital restructuring and applying MM model with taxes.

You are required to calculate:

(a) Market value of RES Ltd.

(b) Cost of Equity Ke.

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

A- 36.

(a) Market Value (MV) of RES Ltd:

MV before restructuring (V_{UL}) = 25,00,000

MV after restructuring (V_L) = V_{UL} + Debt × Tax

= 25,00,000 + 5,00,000 × 30% = **26,50,000**

(b) Cost of Equity:

K_e = K_o + (K_o – K_d) × E) D(1-t)/E

= .21 + (.21 - .15) × 5,00,000(1-.30)/21,50,000 = **21.97%**

Here,

K_d = before tax cost of debt

K_o = K_o of unlevered firm

K_o of unlevered firm = K_e of unlevered firm = **21%**

E = Value of Equity

E = Value of firm – Value of Debt

= 26,50,000 – 5,00,000 = **21,50,000**

(c) Weighted average cost of capital:

WACC = $K_e W_e + K_d W_d$

= 21.97% × 21,50,000/26,50,000+ 10.50% × 5,00,000/26,50,000

= **19.806 %**

Here,

K_d = I (1-t) = 15% (1- .30) = **10.50%**

Comment: WACC after restructuring is lower than before restructuring. Hence, company should restructure the firm.

Q-37. Alpha Limited and Beta Limited are identical except for capital structures. Alpha Ltd. has 50 per cent debt and 50 per cent equity, whereas Beta Ltd. has 20 per cent debt and 80 per cent equity. (All percentages are in market value terms). The borrowing rate for both companies is 8 per cent in a no-tax world, and capital markets are assumed to be perfect.

(a) (i) If you own 2 per cent of the shares of Alpha Ltd., determine your return if the company has net operating income of Rs.3,60,000 and the overall capitalisation rate of the company, Ko is 18 per cent?

(ii) Calculate the implied required rate of return on equity?

(b) Beta Ltd. has the same net operating income as Alpha Ltd.

(i) Determine the implied required equity return of Beta Ltd.?

(ii) Analyze why does it differ from that of Alpha Ltd.?

A-37.

(a) Value of the Alpha Ltd. = NOI / K_o = 3,60,000 / 18% = **Rs.20,00,000**

Value of Shares of Alpha Ltd. = 50% of Rs.20,00,000 = **Rs.10,00,000**

(i) Return on Shares on Alpha Ltd

Particulars	Rs.
Net Operating income	3,60,000
Less: Interest on Debt @ 8% on Rs.10,00,0,00 (50% of Rs.20,00,000)	80,000
Earnings for Equity Investors	2,80,000
Return on 2% Shares (2% of Rs.**2,80,000)**	**5,600**

(ii) Implied required rate of return on Equity = 2,80,000 / 10,00,000 × 100 = **28%**

(b) (i) Return on Shares on Beta Ltd

Particulars	Rs.
Net Operating income	3,60,000
Less: Interest on Debt @ 8% on Rs.4,00,0,00 (20% of Rs.20,00,000)	32,000
Earnings for Equity Investors	3,28,000

Value of Shares of Beta Ltd. = 80% of Rs.20,00,000 = **Rs.16,00,000**

Implied required rate of return on Equity = 3,28,000 / 16,00,000 × 100 = **20.50%**

(ii) It is lower than the Alpha Ltd. because Beta Ltd. uses less debt in its capital structure. As the equity capitalization is a linear function of the debt-to-equity ratio when we use the net operating income approach, the decline in required equity return offsets exactly the disadvantage of not employing so much in the way of "cheaper" debt funds.

Q-38. Following data is available in respect of two companies having same business risk:

Capital employed = Rs.2,00,000

EBIT = Rs.30,000

Sources	Levered Company (Rs.)	Unlevered Company (Rs.)

Debt (@ 10%)	1,00,000	-
Equity	1,00,000	2,00,000
K_e	20%	12.5%

Investor is holding 15% shares in Unlevered company.

Calculate increase in annual earnings of investor if he switches his holding from unlevered to levered company.

Answer

1. Calculation of Value of firms:

Particulars	Levered (Rs.)	Unlevered (Rs.)
EBIT	30,000	30,000
Less: Interest @ 10%	10,000	-
Earning available to Equity Shareholders	20,000	30,000
Equity Capitalization rate	20%	12.5%
Market Value of Equity (Earning for Equity ÷ K_e)	1,00,000	2,40,000
Value of Debt	1,00,000	-
Value of the Firm	**2,00,000**	**2,40,000**

Value of Unlevered company is more than that of Levered company therefore investor will sell his shares in unlevered company and buy shares in levered company. Market value of Debt and Equity of Levered company are in the ratio of Rs.1,00,000 : Rs.1,00,000, i.e., 1:1. To maintain the level of risk he will lend proportionate amount (50%) and invest balance amount (50%) in shares of Levered company.

2. Investment:

Sell shares in Unlevered company (2,40,000 × 15%)	36,000
Lend money (36,000 × 50%)	18,000
Buy shares in Levered company	18,000
Total investment	**36,000**

3. Change in Return:

Income from shares in Levered company (18,000 × 20%)	3,600
Add: Interest on money lent (18,000 × 10%)	1,800
Total income after switch over	5,400
Income from Unlevered firm (36,000 × 12.5%)	4,500
Incremental Income due to arbitrage	**900**

TOPIC – 10 , DIVIDEND DECISIONS

Q-39. AB Engineering ltd. belongs to a risk class for which the capitalization rate is 10%. It currently has outstanding 10,000 shares selling at Rs.100 each. The firm is contemplating the declaration of a dividend of Rs.5 per share at the end of the current financial year. It expects to have a net income of Rs.1,00,000 and has a proposal for making new investments of Rs.2,00,000.

Required:

1. Calculate value of firm when dividends are not paid.

2. Calculate value of firm when dividends are paid.

A-39.

1. Value of the firm when dividends are not paid:

Step 1: Calculate price at the end of the period:

K_e = 10%, P_o = Rs.100, $D_1 = 0$

$P_o = P_1 + D_1 / 1+K_e$

Rs.100 $= P_1+0 / 1+0.10$ or P1 = Rs.**110**

Step 2: No. of shares required to be issued:

No. of shares Δn = Funds required−(E−D) / Price at end(P_1) = 2,00,000−(1,00,000−0) / 110

= **909.09 shares**

Step 3: Calculation of value of firm:

$nP_o = (n+ \Delta n)P_1 - I+E_1+Ke$

nP_o = (10,000+909.09)110−2,00,000+1,00,000 / (1+.10) = **Rs.10,00,000**

2. Value of the firm when dividends are paid:

Step 1: Calculate price at the end of the period:

K_e = 10%, P_o = Rs.100, D_1 = Rs.5

P_o = P_1 +D_1 / 1+K_e

Rs.100 = P1+51+0.10 or P1 = **Rs.105**

Step 2: No. of shares required to be issued:

No. of shares Δn = Funds required−(E−D) / Price at end(P_1) = 2,00,000−(1,00,000−50,000) / 105

= **1,428.57 shares**

Step 3: Calculation of value of firm:

nP_o = (n+ Δn)P1− I+E1+Ke

nP_o = (10,000+1,428.57)105−2,00,000+1,00,000(1+.10) = **Rs.10,00,000**

Thus, it can be seen that the value of the firm remains the same in either case.

Q-40. The following information is supplied to you:

Total Earnings	Rs.2,00,000
No. of equity shares (of Rs.100 each)	20,000
Dividend paid	Rs.1,50,000
Price/Earnings ratio	12.5

Applying Walter's Model:

1. Ascertain whether the company is following an optimal dividend policy.

2. Find out what should be the P/E ratio at which the dividend policy will have no effect on the value of the share.

3. Will your decision change, if the P/E ratio is 8 instead of 12.5?

A-40.

1. K_e = 1 / PE = 1 / 12.5 = 8%

r = Total Earnings / Total Funds × 100 = 2,00,000 / 20,000 Shares ×100 per share × 100 = 10%

r > K_e, Therefore as per Walter model optimum dividend payout is Nil and company is paying dividend to shareholders means company is not following optimum dividend policy.

2. The P/E ratio at which the dividend policy will have no effect on the value of the share is such at which the ke would be equal to the rate of return (r) of the firm.

K_e = r = 10%

PE = 1 / K_e = 1 / .10 = **10 times**

3. If the P/E is 8 instead of 12.5, then the Ke which is the inverse of P/E ratio, would be 12.5:

K_e = 1 / PE = 1 / 8 = 12.5%

In such a situation Ke > r and optimum dividend payout will be 100%.

Question 41.

A N Ltd. gives you the following information:

The appropriate market rate of discount is 8% and that the company is expected to enjoy an above-average performance for eight years with dividends growing at say 10% per annum.

After that time, because of competition and the company losing its present technological or marketing lead, the growth in dividends will revert to the average for all companies-say 4%.

The present dividend is Rs.0.10 per share.

Compute the current value of equity share of the company.

A- 41.

Calculation of Present Value or Current Market Value of Share

Year	Expected benefits	PVF @ 8%	DCF
1	0.10 + 10% = Rs.0.11	0.926	0.101
2	0.11 + 10% = Rs.0.121	0.857	0.103
3	0.121 + 10% = Rs.0.133	0.794	0.106
4	0.133 + 10% = Rs.0.146	0.735	0.107
5	0.146 + 10% = Rs.0.161	0.681	0.110
6	0.161 + 10% = Rs.0.177	0.630	0.112
7	0.177 + 10% = Rs.0.195	0.583	0.114
8	0.195 + 10% = Rs.0.214	0.540	0.116
(9 to ∞)	P8 = Rs.5.55	0.540	3.00
Present value of all future benefits of Current market value of Share			**Rs.3.87**

P8 = $D_9 / K_e - g$ = .214+4% / 8% - 4% = Rs.5.55

Q- 42.

Given the last year's dividend is Rs.9.80, speed of adjustment = 45%, target payout ratio 60% and EPS for current year Rs.20.

Calculate current year's dividend using Linter's model.

A – 42.

$D_1 = D_0 + [(EPS \times Target\ payout) - D_0] \times Af$

$= 9.80 + [(20 \times 60\%) - 9.80] \times 0.45$ = **Rs.10.79**

TOPIC – 11, RATIO ANALYSIS

Question 43.

The following figures and ratios are related to a company:

(a) Sales for the year (all credit)	Rs.30,00,000
(b) Gross profit ratio	25 percent
(c) Fixed assets turnover (basis on cost of goods sold)	1.5
(d) Stock turnover (basis on cost of goods sold)	6
(e) Liquid ratio	1 : 1
(f) Current ratio	1.5 : 1
(g) Debtors collection period	2 months
(h) Reserve and surplus to Share capital	0.6 : 1
(i) Capital gearing ratio	0.5
(j) Fixed assets to net worth	1.20 : 1

You are required to prepare:

1. Balance Sheet of the company on the basis of above details.

2. The statement showing working capital requirement, if the company wants to make a provision for contingencies @ 10% of net working capital including such provision.

A-43.

(1) Projected Balance Sheet Balance Sheet

Liabilities	Rs.	Assets	Rs.
Share Capital	7,81,250	Fixed Assets	15,00,000
Reserve & Surplus	4,68,750	Stock	3,75,000
Debt	6,25,000	Debtors	5,00,000

Current Liabilities	7,50,000	Cash	2,50,000
	26,25,000		**26,25,000**

Working Notes:

a. Cost of Goods Sold = 30,00,000 - 25% = **22,50,000**

b. Fixed Assets Turnover Ratio = COGS / Fixed Assets = 1.5 times

Fixed Assets = 22,50,000 / 1.5 = Rs.15,00,000

c. Fixed Assets to Net Worth = Fixed Assets / Net Worth = 1.2 times

Net Worth = 15,00,000 / 1.2= Rs.12,50,000

d. Capital Gearing = Debt+ preference / Equity = Debt + Nil / 12,50,000

Debt = 0.5 × Rs.12,50,000 = **Rs.6,25,000**

Assumption: Preference Share capital is zero.

e. Reserves & Surplus = 12,50,000 × 0.6/1.6 = **Rs.4,68,750**

f. Share Capital = 12,50,000 × 1/1.6 = **Rs.7,81,250**

g. Stock Turnover = COGS / Stock = 6 times

Stock = 22,50,000 / 6 = **Rs.3,75,000**

h. Debtors = Sales × Collection Period / 12

= 30,00,000 × = Rs.5,00,000 12 2

i. Stock = CL (Current ratio – Liquid ratio)

Current Liabilities = Stock / CR - LR

= 3,75,500 / 1.5 – 1 = Rs.7,50,000

j. Current Ratio = CA / CL = 1.5 times

Current Assets = 1.5 × 7,50,000 = **Rs.11,25,000**

k. Cash in Hand = 11,25,000 - 3,75,000 - 5,00,000

= Rs.2,50,000

(2) Statement of Working Capital Requirement

Particulars	**Rs.**
Current Assets: Stock	3,75,000
Debtors	5,00,000

Cash	2,50,000
	11,25,000
Less: Current Liabilities	(7,50,000)
Working Capital Before Provision (A - B)	**3,75,000**
Add: Provision for Contingencies @ 10% of WC (Including provision)	41,667
Working Capital Including Provision $\left(3,75,000 \times \frac{100}{90}\right)$	**4,16,667**

Q- 44.

MNP Limited has made plans for the next year 2010-11. It is estimated that the company will employ total assets of Rs.25,00,000; 30% of assets being financed by debt at an interest cost of 9% p.a. the direct costs for the year are estimated at Rs.15,00,000 and all other operating expenses are estimated at Rs.2,40,000. The sales revenue are estimated at Rs.22,50,000. Tax rate is assumed to be 40%.

You are required to calculate: (i) Net profit margin, **(ii)** Return on Assets, **(iii)** Assets turnover, **(iv)** Return on equity

A-44.

(i) Net Profit Margin = EAT / Sales × 100 = 2,65,000 / 22,50,000 × 100 = **11.80%**

(ii) Return on Assets = EBIT (1−t) / Assets = 5,10,000 (1−.40) / 25,00,000 = **12.24%**

(iii) Assets turnover = = Assets Total Sales 000 ,00,25000 ,50,22 = **0.90**

(iv) Return on Equity = EAT / Share holder's Fund × 100 =2,65,000 / 17,50,000 × 100 = **15.171%**

Working Notes:

Particulars	Rs.
Sales Revenue	22,50,000
Less: Direct Cost	15,00,000
Gross Profit	**7,50,000**
Less: Other operating expenses	2,40,000
EBIT	**5,10,000**
Less: Interest on 9% Debt (2500000 × 30% × 9%)	67,500
EBT	**4,42,500**
Less: Taxes @ 40%	1,77,000
EAT	**2,65,500**

Q- 45.

With the following ratios and further information given below prepare a Trading Account, Profit and Loss Account and Balance Sheet of ABC Company.

Fixed Assets	Rs.40,00,000
Closing Stock	Rs.4,00,000
Stock turnover ratio	10 times
Gross Profit Ratio	25%
Net Profit Ratio	20%
Net profit to capital	1/5
Capital to total liabilities	1/2
Fixed assets to capital	5/4
Fixed assets / Total current assets	5/7

Answer

Trading and Profit & Loss Account

Particulars	Rs.	**Particulars**	Rs.
To Opening Stock	80,000	By Sales	32,00,000
To Purchase & Conversion Cost (b.f.)	27,20,000	By Closing Stock	4,00,000
To Gross Profit c/d (25% of 32 Lacs)	8,00,000		
	36,00,000		**36,00,000**
To Operating Expenses (b.f.)	1,60,000	By Gross Profit b/d	8,00,000
To Net Profit	6,40,000		
	8,00,000		**8,00,000**

Balance Sheet

Liabilities	Rs.	**Assets**		Rs.
Capital	32,00,000	Fixed Assets		40,00,000
Other Liabilities	64,00,000	Current Assets:		
		Stock	4,00,000	56,00,000
		Other CA (b.f.)	52,00,000	
	96,00,000			**96,00,000**

Working Notes:

(i) Calculation of Capital:

= Fixed Assets / Capital = 5/4 or Capital = 40,00,000 × 4/5

= **Rs.32,00,000**

(ii) Calculation of Other Liabilities:

= Capital / Other Liabilities = 1/2 or Other Liabilities = 32,00,000 × 2

= **Rs.64,00,000**

(iii) Calculation of Current Assets:

= Fixed Assets / Current Assets = 5/7 or Current Assets = 40,00,000 × 7/5

= **Rs.56,00,000**

(iv) Calculation of Net Profit:

= Net Profit / Capital = 1/5 or = 32,00,000 × 1/5

= **Rs.6,40,000**

(v) Calculation of Sales:

= Net Profit / Sales =20% or Sales = 6,40,000 ÷ 20%

= **Rs.32,00,000**

(vi) Calculation of Opening Stock:

COGS = 75% of Sales = 75% of 32,00,000

= **24,00,000**

= COGS / Average Stock = 10 or Average Stock = 24,00,000 ÷ 10

= **2,40,000**

Average stock = (Opening Stock + Closing Stock) ÷ 2 = 2,40,000

Opening Stock = (2,40,000 × 2) – 4,00,000 = **Rs.80,000**

Question 46.

The following accounting information and financial ratios of PQR Ltd. relate to the year ended 31st December, 2019:

Accounting Information:	
Gross profit	15% of sales

Net profit	8% of sales
Raw material consumed	20% of works cost
Direct wages	10% of works cost
Stock of raw materials	3 months' usage
Stock of finished goods	6% of works cost
Debt collection period	60 days
All sales are on credit	
Financial Ratios:	
Fixed assets to Sales	1 : 3
Fixed assets to Current assets	13 : 11
Current ratio	2 : 1
Long term loan to Current liabilities	2 : 1
Capital to Reserve and Surplus	1 : 4

If value of fixed assets as on 31st December, 2019 amounted to Rs.26 lakhs, prepare a summarised profit and loss account of the company for the year ended 31st December, 2019 and also the balance sheet as on 31st December, 2019.

A- 46.

Profit and Loss account for the year ended 31.12.2019

Particulars	Rs.	Particulars	Rs.
To Direct Materials	13,26,000	By Sales	78,00,000
To Direct Wages	6,63,000		
To Works Overheads (b.f.)	46,41,000		
To Gross profit (15% of Rs.78,00,000)	11,70,000		
	78,00,000		**78,00,000**
To Administration and Selling expenses (b.f.)	5,46,000	By Gross Profit	11,70,000
To Net Profit (8% of Rs.78,00,000)	6,24,000		

11,70,000	**11,70,000**		

Balance Sheet as at 31st December, 2019

Liabilities	Rs.	**Assets**	Rs.
Share Capital	3,00,000	Fixed Assets	26,00,000
Reserves and Surplus	12,00,000	Current Assets:	
Long term loans	22,00,000	Raw Material Stock	3,31,500
Current Liabilities	11,00,000	Finished Goods Stock	3,97,800
		Receivables	12,82,192
		Cash	1,88,508
	48,00,000		**48,00,000**

Working Notes:

(a) Calculation of Sales:

Fixed Assets / Sales = 1/3 or Sales = 3 × Rs.26,00,000

Sales = **Rs.78,00,000**

(b) Calculation of Current Assets:

Fixed Assets / Current Assets = 13/11 or Current Assets = Rs.26,00,000 × 11/13

Current Assets = **Rs.22,00,000**

(c) Calculation of Raw Material Consumption and Direct Wages:

Works Cost = Sales – Gross Profit

= 78,00,000 – 15% of Sales = Rs.66,30,000

Raw Material Consumption = 20% of Rs.66,30,000 = **Rs.13,26,000**

Direct Wages = 10% of Rs.66,30,000 = **Rs.6,63,000**

(d) Calculation of Finished Goods Stock:

Finished Goods Stock = 6% of Rs.66,30,000 = **Rs.3,97,800**

(e) Calculation of Raw Material Stock:

Raw Material Stock = Raw Material Consumption × 3/12

= Rs.13,26,000 × 3/12 = **Rs.3,31,500**

(f) Calculation of Current Liabilities:

Current Ratio = Current Assets / Current Liabilities = 2

Current Liabilities = Rs.22,00,000 ÷ 2 = **Rs.11,00,000**

(g) Calculation of Receivables:

Receivables = Credit Sales × ACP / 365

= Rs.78,00,000 × 60 / 365 = **Rs.12,82,192**

(h) Calculation of Long Term Loan:

Long Term Loan / Current Liabilities = 2

Long Term Loan = 2 × Rs.11,00,000 = **Rs.22,00,000**

(i) Calculation of Cash Balance:

Current Assets = Cash + Stock + Receivables

Cash Balance = Rs.22,00,000 – (Rs.3,97,800 + Rs.3,31,500 + Rs.12,82,192)

= Rs.1,88,508

(j) Calculation of Net Worth:

Total Liabilities = Total Assets (Fixed Assets + Current Assets)

= Rs.22,00,000 + Rs.26,00,000 = Rs.48,00,000

Net Worth = Total Liabilities – Long Term Loan – Current Liabilities

= Rs.48,00,000 - Rs.22,00,000 - Rs.11,00,000

= Rs.15,00,000

(k) Calculation of Capital, Reserve and Surplus:

Net Worth = Share Capital + Reserve and surplus

Capital to Reserve and Surplus = 1 : 4

Share Capital = Rs.15,00,000 × 1/5 = Rs.3,00,000

Reserve and Surplus = Rs.15,00,000 × 4/5 = Rs.12,00,000

Q- 47.

The Balance Sheets of A Ltd. and B Ltd. as on 31st March 2020 are as follows:

Particulars	A Ltd	B Ltd
Liabilities:		
Share Capital	40,00,000	40,00,000
Reserve and surplus	32,30,000	25,00,000
Secured Loans	25,25,000	32,50,000
Current Liabilities and provisions:		
Sundry Creditors	15,00,000	14,00,000
Outstanding Expenses	2,00,000	3,00,000
Provision for Tax	3,00,000	3,00,000
Proposed Dividend	6,00,000	-
Unclaimed Dividend	15,000	-
Assets:	**1,23,70,000**	**1,17,50,000**
Fixed Assets (Net)	**80,00,000**	**50,00,000**
Investments	15,00,000	-
Inventory at Cost	23,00,000	45,00,000
Sundry Debtors	-	17,00,000
Cash & Bank	5,70,000	5,50,000
	1,23,70,000	**1,17,50,000**

Additional information available:

(i) 75% of the Inventory in A Ltd. readily saleable at cost plus 20%,

(ii) 50% of Sundry Debtors of B Ltd. are due from C Ltd. which is not in a position to repay the amount B Ltd. agreed to accept 15% debentures of C Ltd.

(iii) B Ltd. had also proposed 15% dividend but that was not shown in the accounts.

(iv) At the year end, B Ltd. sold investments amounting to Rs.1,20,000 and repaid Sundry Creditors.

On the basis of the given Balance Sheet and the additional information, you are required to evaluate liquidity of the companies. All working should form part of the answer.

A- 47.

Particulars	A	B
Current Assets and Liquid Assets:		
Stock (23,00,000 × 75%) + 20%	20,70,000	-
Debtor (17,00,000 × 50%)	-	8,50,000
Cash & Bank	5,70,000	5,50,000
Liquid Assets	**26,40,000**	**14,00,000**
Add: Stock (23,00,000 × 25%)	5,75,000	45,00,000
Total Current Assets	**32,15,000**	**59,00,000**
Current Liabilities:	6,00,000	6,00,000
Proposed Dividend	15,00,000	15,20,000
Creditor	2,00,000	3,00,000
Out Expenses	3,00,000	3,00,000
Provision for tax	15,000	-
Unclaimed Dividend	**26,15,000**	**27,20,000**

Evaluation of Liquidity

RATIO	A	B
1. Current Ratio = CA / CL	32,15,000 / 26,15,000 = **1.23**	59,00,000/27,20,000= **2.17**
2. Liquid Ratio = LA / CL	26,40,000 / 26,15,000 = **1.009**	14,00,000 /27,20,000 = **.51**

THEORY QUESTIONS – ANSWER

TOPIC - 1. , Basic Concepts

Q-1. Differentiate between Financial Management and Financial Accounting.

A-1. Though financial management and financial accounting are closely related, still they differ in the treatment of funds and also with regards to decision - making.

Basis	**Financial Accounting**	**Financial Management**
Treatment of Funds	In accounting, the measurement of funds is based on the **accrual** principle. The accrual based accounting data does not reflect fully the financial conditions of the organization. An organization which has earned profit (sales less expenses) may said to be profitable in the accounting sense but it may not be able to meet its current obligations due to shortage of liquidity.	The treatment of funds, in financial management is based on **cash flows**. The revenues are recognised only when cash is actually received (i.e. cash inflow) and expenses are recognised on actual payment (i.e. cash outflow). Thus, cash flow based returns help financial managers to avoid insolvency and achieve desired financial goals.
Decision making	The chief focus of an accountant is to **collect and present the data**.	Financial manager's primary responsibility relates to **financial planning, controlling and decision making**.

Q-2. Explain the two basic functions of Financial Management.

A-2.

Procurement of Funds	✓ Funds can be obtained from different sources having different characteristics in terms of risk, cost and control. ✓ The funds raised from the issue of equity shares are the best from the risk point of view since repayment is required only at the time of liquidation. ✓ However, it is also the most costly source of finance due to dividend expectations of shareholders. ✓ On the other hand, debentures are cheaper than equity shares due to their tax advantage. ✓ However, they are usually riskier than equity shares. ✓ There are thus risk, cost and control considerations which a finance manager must consider while procuring funds. ✓ The cost of funds should be at the minimum level for that a proper balancing of risk and control factors must be carried out.
Effective Utilization of Funds	✓ The Finance Manager has to ensure that funds are not kept idle or there is no improper use of funds. ✓ The funds are to be invested in a manner such that they generate returns higher than the cost of capital to the firm. ✓ Besides this, decisions to invest in fixed assets are to be taken only after sound analysis using capital budgeting techniques. ✓ Similarly, adequate working capital should be maintained so as to avoid the risk of insolvency.

Q-3. State the role of a Chief Financial Officer.

A-3.

Financial analysis and planning	✓ Determining the proper amount of funds to employ in the firm, i.e. designating the size of the firm and its rate of growth.
Investment decisions	✓ The efficient **allocation of funds** to specific assets.
Financing and capital structure decisions	✓ **Raising funds** on favourable terms as possible i.e. determining the composition of liabilities.
Management of financial resources	✓ **Judicious mix** of Current Assets and liabilities.
Risk management	✓ Protecting assets
Decision regarding stock market	✓ **Increasing shareholders wealth** by bonus shares, right shares & stock split decisions etc.
Financial Negotiations	✓ Negotiations with **financial institutions**, bank, public depositors, shareholders, investors etc.

Q-4. Distinguish between Profit maximization vs. Wealth maximization objective of the firm.

A-4.

Profit maximization	✓ Profit maximization is a **short-term objective** and cannot be the sole objective of a company. ✓ It is at best a limited objective. ✓ If profit is given undue importance, a number of problems can arise like the **term profit is vague**, profit maximization has to be attempted with a realization of risks involved, it does not take into account the time pattern of returns and as an objective it is too narrow.

Wealth maximization	✓ Wealth maximization, as an objective, means that the company is using its resources in a good manner. ✓ If the share value is to stay high, the company has to reduce its costs and use the resources properly. ✓ If the company follows the goal of wealth maximization, it means that the company will promote only those policies that will lead to an efficient allocation of resources.

Q-5. "The profit maximization is not an operationally feasible criterion." Comment on it.

A-5.

Validity of statement	✓ "The profit maximization is not an operationally feasible criterion." This **statement is true** because Profit maximization can be a **short-term objective** for any organization 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.
Limitations	✓ 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? ✓ 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.

	✓ It **ignores the risk** factor. ✓ The term **maximization is also vague**.

Q-6. Discuss emerging issues affecting the future role of Chief Financial Officer (CFO).

A-6.

Regulation	✓ **Regulation requirements are increasing** and CFOs have an increasingly personal stake in regulatory adherence.
Globalization	✓ The challenges of globalization are creating a **need for finance leaders** to develop a finance function that works effectively on the global stage and that embraces diversity.
Technology	✓ Technology is evolving very quickly, providing the potential for CFOs to **reconfigure finance processes** and drive business insight through 'big data' and analytics.
Risk	✓ The nature of the risks that organizations face is changing, requiring more effective risk management approaches and increasingly CFOs have a role to play in ensuring an appropriate corporate ethos.
Transformation	✓ There will be more pressure on CFOs to transform their finance functions to drive a better service to the business at zero cost impact.
Stakeholder Management	✓ Stakeholder management and relationships will become important as increasingly CFOs become the face of the corporate brand.
Strategy	✓ There will be a greater role to play in strategy validation and execution, because the environment is more complex and quick changing, calling on the analytical skills CFOs can bring.
Reporting	✓ Reporting requirements will broaden and continue to be burdensome for CFOs.
Talent and Capability	✓ A brighter spotlight will shine on talent, capability and behaviors in the top finance role.

Q-7. Explain 'Finance Function'.

A-7. The finance function is most important for all business enterprises. It remains a focus of all activities. It starts with the setting up of an enterprise. It is concerned with raising of funds, deciding the cheapest source of finance, utilization of funds raised, making provision for refund when money is not required in the business, deciding the most profitable investment, managing the funds raised and paying returns to the providers of funds in proportion to the risks undertaken by them.

Therefore, it aims at acquiring sufficient funds, utilizing them properly, increasing the profitability of the organization and maximizing the value of the organization and ultimately the shareholder's wealth.

Q-8. What are the roles of Finance Executive in Modem World?

A-8. Today, the role of Financial Executive, is no longer confined to accounting, financial reporting and risk management. Some of the key activities that highlight the changing role of a Finance Executive are as follows :

- Budgeting
- Forecasting
- Managing M & As
- Profitability analysis relating to customers or products
- Pricing Analysis
- Decisions about outsourcing
- Overseeing the IT function.
- Overseeing the HR function.
- Strategic planning (sometimes overseeing this function).
- Regulatory compliance.
- Risk management.

Q-9. What are the two main aspects of the Finance Function?

A-9. Long term Finance Function Decisions

Investment Decisions	✓ These decisions relate to the **selection of assets** in which funds will be invested by a firm. Funds procured from different sources have to be invested in various kinds of assets. Long term funds are used in a project for various fixed assets and also for current assets.
Financing decisions	✓ These decisions relate to **acquiring the optimum finance** to meet financial objectives and seeing that fixed and working capital are effectively managed.
Dividend decisions	✓ These decisions relate to the **determination as to how much and how frequently cash can be paid out of the profits of an organization as income** for its owners/ shareholders. The owner of any profit-making organization looks for reward for his investment in two ways, the growth of the capital invested and the cash paid out as income; for a sole trader this income would be termed as drawings and for a limited liability company the term is dividends.

Short term Finance Function Decisions

Generally short-term decisions are reduced to management of current asset and current liability (i.e., working capital Management).

TOPIC – 2, Sources of Finance

Q-10. Explain the term Ploughing back of profits.

A- 10.

Meaning	✓ Ploughing back of Profits or Retained earnings means **retention of profit**. ✓ In other words, that part of surplus **profit which is not distributed as dividend** are termed as Retained Profit or Ploughing back of Profits.

Features	✓ Retained Earnings are an **internal source of long term financing** and are treated as long term funds. ✓ Such funds belong to the ordinary shareholders and increase the net worth of the company. ✓ A public limited company **must plough back a reasonable amount of profit every year** keeping in view the legal requirements in this regard and its own expansion plans. ✓ Such funds also entail almost **no risk**. ✓ Further, **control of present owners** is also not diluted by retaining profits.

Q-11. Briefly discuss the concept of seed capital assistance.

A-11. ✓ The seed capital assistance has been **designed by IDBI** for professionally or technically qualified entrepreneurs.

✓ All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance are eligible under the scheme.

✓ The **project cost should not exceed Rs. 2 crores** and the **maximum assistance** under the project will

be restricted to **50% of the required promoters contribution or Rs. 15 lacs** whichever is lower.

✓ The seed capital assistance is interest free but carries a security charge of one percent per annum for the first five years and an increasing rate thereafter.

Q- 12. Distinguish between Global Depository Receipts and American Depository Receipts.

A-12.

Basis	**GDR**	**ADR**
Meaning	The **depository receipts in world market** is GDR.	The **depository receipts in US market** is ADR.

Compliance with SEC	It **need not comply** with any of the condition of SEC (Securities Exchange Commission) of USA.	It is issued in accordance with the **provisions of SEC**.
Disclosure requirement	Disclosure requirement is **less stringent**.	Disclosure requirement is **very strict**.
Cost	Cost of issuing GDR is **less** in comparison to ADR.	Cost of issuing ADR is **more** in comparison to GDR.
Listing	GDRs are listed in **any foreign stock exchange other than the American Stock Exchange**. Example: London Stock Exchange, Luxemburg Stock Exchanges etc.	ADRs are listed **only in American Stock Exchange**.

Q-13. What is debt securitization? Explain the basic debt securitization process.

A-13.

Meaning of Debt Securitization	✓ It 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 asset pool, **market securities can be issued**, e.g. housing finance, auto loans, and credit card receivables.	
Process of Debt Securitization	The origination function	✓ A borrower seeks a loan from a finance company, bank, HDFC. ✓ **The credit worthiness of borrower is evaluated** and contract is entered into with repayment schedule structured over the life of the loan.
	The pooling function	✓ Similar **loans on receivables are clubbed together** to create an underlying pool of assets. ✓ The pool is transferred in favour of Special purpose Vehicle

		(SPV), which acts as a trustee for investors.
	The securitization function	✓ SPV will **structure and issue securities** on the basis of asset pool. ✓ The securities carry a coupon and expected maturity which can be asset based/ mortgage based. ✓ These are generally **sold to investors** through merchant bankers. ✓ Investors are pension funds, mutual funds, insurance funds.

Q-14. Distinguish between Operating lease and financial lease.

A-14.

Basis	**Finance Lease**	**Operating Lease**
Risk and reward	The risk and reward incident to ownership are **passed on the lessee**. The lessor only remains the legal owner of the asset.	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership **belongs only to the lessor**.
Risk of obsolescence	The **lessee** bears the risk of obsolescence.	The **lessor** bears the risk of obsolescence.
Cancellation	The lease is **non-cancellable** by either party under it.	The lease is kept **cancellable by the lessor**.
Cost of repairs	The **lessor does not bear** the cost of repairs, maintenance or operations.	Usually, the **lessor bears** the cost of repairs, maintenance or operations.
Life of contract	Life of contract **approximates the economic life** of the asset.	Life of contract is **shorter than the economic life** of the asset.

Q-15. Explain Bridge finance.

A-15. ✓ Bridge finance refers, normally, to **loans taken by the business**, usually from commercial banks **for a short period**, **pending disbursement of term loans by financial institutions**, normally it takes time for the financial institution to finalize procedures of creation of security, tie-up participation with other institutions etc. even though a positive appraisal of the project has been made.

✓ However, once the loans are approved in principle, firms in order not to lose further time in starting their projects arrange for bridge finance.

✓ Such **temporary loan** is normally **repaid out of the proceeds of the principal term loans**.

✓ It is secured by hypothecation of moveable assets, personal guarantees and demand promissory notes.

✓ Generally, **rate of interest on bridge finance is higher** as compared with that on term loans.

Q-16. Discuss factors that a venture capitalist should consider before financing any risky project.

A-16. ✓ 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.

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

✓ **Technical feasibility** of the new product/ service should be considered.

✓ 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.

✓ A **research** must be carried out to ensure that there is a market for the new product.

✓ The venture capitalist himself should have the **capacity to bear risk or loss**, if the project fails.

✓ The venture capitalist should try to establish a **number of exist routes**.

✓ 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.

Q-17. Write short note on Deep Discount Bonds.

A-17. ✓ 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.

Q- 18. What is debt securitization? And also state its advantages.

A-18.

Meaning of Debt Securitization	✓ It 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 asset pool, market securities can be issued, e.g. housing finance, auto loans, and credit card receivables.
Advantages to Originator	✓ The asset is shifted off the Balance Sheet, thus giving the originator recourse to **off balance sheet funding**. ✓ It converts **illiquid assets to liquid portfolio**. ✓ It facilitates **better balance sheet management**; assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms. ✓ The originator's **credit rating enhances**.
Advantages to	✓ For the investor, securitization opens up **new investment avenues**.

Investor	✓ Though the investor bears the credit risk, the securities are tied up to **definite assets**. ✓ Securitization helps to convert a stream of cash receivables into a **source of long term finance**. ✓ Securities are **rated by Credit Rating Agencies** and it becomes easier for an investor to compare risk return profile and make an informed choice.

Q-19. What is venture capital financing? State the factors which are to be considered in financing any risky project.

The pooling

function

A-19.

Meaning of Venture Capital Financing	✓ The Venture Capital Financing refers to **financing of new high risky ventures** promoted by qualified entrepreneurs who lack experience & funds to give shape to their ideas.
Factors to be considered in financing risky project	✓ Please refer answer to Question 7.

Q-20. State the main elements of leveraged lease.

A-20.✓ Under this lease, a **third party is involved** beside lessor and lessee.

✓ The **lessor borrows a part of the purchase cost** (say 80%) of the asset from the third party

i.e., lender.

✓ The **asset** so purchased is held as **security against the loan**.

✓ The **lender is paid off from the lease rentals directly by the lessee** and the surplus after meeting the claims of the lender goes to the lessor.

✓ The lessor is entitled to claim depreciation allowance.

Q- 21. State the main features of Global Depository Receipts (GDRs) and American Depository Receipts (ADRs).

A-21.

Global Depository Receipts	✓ Global Depository Receipts (GDRs) are basically **negotiable certificates** denominated in US dollars that represent a **non-US company's publicly traded local currency equity shares**. ✓ These are created when the local currency shares of Indian company are delivered to the depository's local custodian bank, against which the depository bank issues Depository Receipts in US dollars.
American Depository Receipts	✓American Depository Receipts (ADRs) are **securities offered** by **non-US companies** who want to list on any of the US exchange. ✓Each ADR represents a certain number of a company's regular shares. ✓ADRs allow US investors to buy shares of these companies without the costs of investing directly in a foreign stock exchange. ✓ADRs are issued by an approved New York bank or trust company against the deposit of the original shares. ✓These are deposited in a custodial account in the US.

	✓Such receipts have to be issued in accordance with the **provisions stipulated by the SEC USA** which are very stringent.

Q-22. Name any four financial instruments, which are related to international financial market.

A-22.

✓Euro Bonds

✓Foreign Bonds

✓Fully Hedged Bonds

✓Medium Term Notes

✓Floating Rate Notes

✓External Commercial Borrowings

✓Foreign Currency Futures

✓Foreign Currency Option

✓Euro Commercial Papers

Q- 23. State the different types of Packing Credit.

A-23.

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.
Packing credit	✓Export finance is made available on certain terms and conditions where the

against hypothecation of goods	**exporter has pledge able interest** and the goods are hypothecated to the bank as security with stipulated margin. ✓At the time of utilizing the advance, the exporter is required to submit along with 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.
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.
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.
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**.

Q- 24. Explain 'Sales and Lease Back'.

A-24.

✓Under this type of lease, the **owner of an asset sells the asset to a party** (the buyer), who in turn **leases back the same asset to the owner** in consideration of a lease rentals.

✓Under this arrangement, the asset are not physically exchanged but it all **happen in records only**.

✓The main advantage of this method is that the lessee can satisfy himself completely regarding

the quality of an asset and after possession of the asset convert the sale into a lease agreement.

✓Under this transaction, the **seller assumes the role of lessee and the buyer assumes the role of a lessor**.

✓The seller gets the agreed selling price and the buyer gels the lease rentals.

Q-25. What is meant by venture capital financing? State its various methods.

A-25.

Meaning of Venture Capital	✓The venture capital financing refers to **financing and funding of the small scale enterprises**, high technology and risky ventures.	
Methods of Venture Capital financing	Equity financing	✓The venture capital undertakings generally requires funds for a **longer period** but may not be able to provide returns to the investors during the initial stages. ✓Therefore, the venture capital finance is generally provided by way of equity share capital.
	Conditional Loan	✓ A conditional loan is **repayable in the form of a royalty** after the venture is able to generate sales. ✓ No interest is paid on such loans. ✓ In India, Venture Capital Financers charge royalty ranging between 2 to 15 per cent; **actual rate depends on other factors** of

		the venture such as ❖ gestation period, ❖ cash flow patterns, ❖ riskiness and ❖ other factors of the enterprise.
	Income Note	✓ It is a hybrid security which combines the **features of both conventional loan and conditional loan**. ✓ The entrepreneur has to pay **both interest and royalty** on sales but at substantially low rates.
	Participating Debenture	✓ Such security carries charges in **three phases** : ❖ in the startup phase, no interest is charged, ❖ next stage a low rate of interest is charged upto a particular level of operations, ❖ after that, a high rate of interest is required to be paid.

Q-26. Distinguish between the Preference Shares and Debentures.

A-26.

Basis	**Preference Share**	**Debenture**
Ownership	Preference Share Capital is a special kind of share i.e. **part of ownership**.	Debenture is a **type of loan** which can be raised from the public.
Dividend/ Interest	It carries fixed percentage of **dividend**.	It carries fixed percentage of **interest**.
Charge or appropriation	Dividend on preference share is **appropriation** against profits.	Interest on debentures is **charge** against profits.
Nature	Preference shares are a **hybrid form of financing** with some characteristic of equity shares and some attributes of Debt Capital.	Debentures are instrument for **raising long term capital** with a period of maturity.

Q- 27. What are Masala Bonds?

A-27. Masala (means spice) bond is an Indian name used for Rupee denominated bond that Indian corporate borrowers can sell to investors in overseas markets. These bonds are issued outside India but denominated in Indian Rupees. NTPC raised Rs.2,000 crore via masala bonds for its capital expenditure in the year 2016

Q- 28. Explain in brief following financial instruments :

A-28.

(i) Euro Bonds

(ii) Floating Rate Notes

(iii) Euro Commercial Paper

(iv) Fully Hedged Bond

Euro Bonds -

These are the Bonds issued or traded in a country using a currency other than the one in which the bond is denominated. These are issued by multinational corporations, for example, a British company may issue a Eurobond in Germany, denominating it in U.S. dollars.

Floating Rate Notes -

These are issued up to seven years maturity. Interest rates are adjusted to reflect the prevailing exchange rates. They provide cheaper money than foreign loans.

Euro Commercial Paper -

These are short term money market instruments. They are for maturities less than one year. They are usually designated in US Dollars.

Fully Hedged Bond -

Usually in foreign bonds, the risk of currency fluctuations exists. Fully hedged bonds eliminate the risk by selling in forward markets the entire stream of principal and interest payments.

TOPIC – 3, Cost of Capital

Q-29. What do you understand by Weighted Average Cost of Capital?
A-29.

Meaning	✓ The **composite or overall cost of capital** of a firm is the weighted average of the costs of the various sources of funds. ✓ Weights are taken to be in the proportion of each source of fund in the capital structure. ✓ While making financial decisions, this overall or weighted cost is used. ✓ Each investment is financed from a pool of funds which represents the various sources from which funds have been raised. ✓ Any **decision of investment**, therefore, has to be **made with reference to the overall cost of capital** and not with reference to the cost of a specific source of fund used in the investment decision.
Calculation	The weighted average cost of capital is calculated by : ✓ **Calculating the cost of specific source** of fund e.g. cost of debt, equity etc; ✓ **Multiplying the cost of each source by its proportion** in capital structure; and

	✓ **Adding the weighted component** cost to get the firm's WACC represented by k0. **k0 = k1 w1 + k2 w2 + …….** Where, k1, k2 are component costs and w1, w2 are weights.

Q-30. "Financing a business through borrowing is cheaper than using equity." Briefly explain.

A-30. ✓ Debt capital is cheaper than equity capital from the point of its cost and **interest being deductible for income tax purpose**, whereas no such deduction is allowed for dividends.

✓ Issue of new equity dilutes existing control pattern while **borrowing does not result in dilution of control**.

✓ In a **period of rising prices, borrowing is advantageous**. The fixed monetary outgo decreases in real terms as the price level increases.

TOPIC – 4, Leverage

Q-31. What do you understand by Business Risk and Financial Risk?

A-31.

Business 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.

Financial Risk	✓ 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.

Q-32. Distinguish between business risk and financial risk.

A-32.

Basis	**Business Risk**	**Financial Risk**
Meaning	Business Risk refers to the **risk associated with the firm's operations**. In other words, Business Risk is defined as the risk of running a business.	Financial Risk refers to the additional risk placed on the firm's shareholders as a result of **use of debt**.
Type of cost	It occurs due to **fixed operating cost**.	It occurs due to **fixed financing cost**.
Avoidable or Unavoidable	Business Risk is generally **unavoidable**.	Financial Risk **can be avoided** by not using the source of finance involving fixed payment.
Higher Risk	Higher the **fixed operating cost**, higher the Business Risk.	**Companies that issue more debt instruments** would have higher financial risk than companies financed mostly or entirely by equity.

Q-33. "Operating risk is associated with cost structure, whereas financial risk is associated with capital structure of a business concern." Critically examine this statement.

A-33.

Validity of statement	✓ The **statement is valid** that "Operating risk is associated with cost structure whereas financial risk is associated with capital structure of a business concern".
Explanation	✓ Operating risk refers to the risk associated with the firm's operations. ✓ It is represented by the variability of earnings before interest and tax (EBIT). ✓ The variability in turn is influenced by revenues and expenses, which are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost. ✓ If there is no fixed cost, there would be no operating risk. ✓ Whereas financial risk refers to the additional risk placed on firm's shareholders as a result of debt and preference shares used in the capital structure of the concern. ✓ Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity.

TOPIC – 5, Capital Structure

Q-34. What do you understand by Capital structure? How does it differ from Financial structure?

A-34.

Meaning of Capital Structure	✓ Capital Structure refers to the **combination of debt and equity** which a company uses to finance its long-term operations. ✓ It is the **permanent financing** of the company representing long-term sources of capital i.e. owner's equity and long-term debts but excludes current liabilities.
Financial Structure	✓ On the other hand, Financial Structure is the entire left-hand side of the balance sheet which represents all the **long-term and short-term sources of capital**. ✓ Thus, **capital structure is only a part of financial structure**.

Q- 35. Discuss financial break–even and EBIT–EPS indifference analysis.

A-35.

Financial Break Even	✓ Financial break-even point is the **minimum level of EBIT needed to satisfy all the fixed financial charges** i.e. interest and preference dividend. ✓ It denotes the **level of EBIT for which firm's EPS equals zero**. ✓ If the EBIT is less than the financial breakeven point, then the EPS will be negative but if the expected level of EBIT is more than the breakeven point, then more fixed costs financing instruments can be taken in the capital structure, otherwise, equity would be preferred.
EBIT–EPS indifference analysis	✓ EBIT-EPS analysis is a vital **tool for designing the optimal capital structure** of a firm. ✓ The objective of this analysis is to find the EBIT level that will equate EPS regardless of the financing plan chosen.
Computation	$(\mathbf{EBIT} - \mathbf{I1})\ (\mathbf{1} - \mathbf{t})/\ \mathbf{n1} = (\mathbf{EBIT} - \mathbf{I2})(\mathbf{1} - \mathbf{t})/\ \mathbf{n2}$ Where EBIT = Indifference point n1 = Number of equity shares in Alternative 1 n2 = Number of equity shares in Alternative 2 I1 = Interest charges in Alternative 1 I2 = Interest charges in Alternative 2 t = Tax Rate Alternative 1 = All equity finance Alternative 2 = Debt-equity finance.

Q-36. List the fundamental principles governing capital structure.

A-36.

Cost Principle	✓ According to this principle, an ideal pattern or capital structure is one that ❖ **minimizes cost of capital** structure and ❖ **maximizes earnings per share** (EPS).

Risk Principle	✓ According to this principle, **reliance is placed more on common equity** for financing capital requirements than excessive use of debt. ✓ Use of more and more debt means higher commitment in form of interest payout. ✓ This would lead to erosion of shareholders value in unfavorable business situation.
Control Principle	✓ While designing a capital structure, the finance manager may also keep in mind that existing management **control and ownership remains undisturbed**.
Flexibility Principle	✓ It means that the management chooses such a combination of sources of financing which it finds easier to **adjust according to changes in need of funds** in future too.
Other Considerations	✓ Besides above principles, other factors such as **nature of industry**, **timing of issue** and **competition in the industry** should also be considered.

Q-37. What is Over capitalisation? State its causes and consequences.

A-37.

Meaning of Over Capitalisation	✓ It is a situation where a **firm has more capital than it needs** or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest.
Causes	✓ **Raising more money** through issue of shares or debentures than company can employ profitably. ✓ **Borrowing huge amount at higher rate** than rate at which company can earn. ✓ Excessive payment for the **acquisition of fictitious assets** such as goodwill etc. ✓ **Improper provision for depreciation**, replacement of assets and

	distribution of dividends at a higher rate. ✓ **Wrong estimation** of earnings and capitalization.
Consequences	✓ Considerable **reduction in the rate of dividend** and interest payments. ✓ **Reduction in the market price** of shares. ✓ Resorting to "**window dressing**". ✓ Some companies may opt for **reorganization**. However, sometimes the matter gets worse and the company may go into liquidation.

Q-38. What do you mean by capital structure? State its significance in financing decision.

A-38.

Meaning of Capital Structure	✓ Capital structure refers to the mix of a firm's capitalisation i.e. **mix of long-term sources of funds** such as debentures, preference share capital, equity share capital and retained earnings for meeting its total capital requirement.
Significance in Financing Decision	✓ The capital structure decisions are very important in financial management as they **influence debt – equity mix** which ultimately affects shareholders return and risk. ✓ These decisions help in deciding ❖ the forms of financing (which sources to be tapped), ❖ their actual requirements (amount to be funded) and ❖ their relative proportions (mix) in total capitalisation. ✓ Therefore, such a pattern of capital structure must be chosen which ❖ **minimizes cost of capital** and ❖ **maximizes the owners' return**.

TOPIC – 6, Theories of Capital Structure

Q-39. What is Net Operating income theory of capital structure? Explain the assumptions on which the NOI theory is based.

A-39.

Meaning	✓ 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	✓ There are **no taxes**. ✓ The market capitalizes the value of the firm as a whole. Thus, the **split between debt and equity is not important**. ✓ 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. ✓ The **overall cost of capital remains same** for all degrees of debt equity mix.

TOPIC – 7, Investment Decisions (Capital Budgeting)

Q-40. Explain the term Desirability factor.

A-40.

✓ In certain cases, we have to **compare a number of proposals** each involving different amount of cash inflows.

✓ One of the methods of comparing such proposals is to work out what is known as the 'Desirability factor' or 'Profitability index'.	
Formula	$\frac{\textbf{Sum of Discounted Cash inflows}}{\textbf{Initial Cash outlay or Total Discounted Cash outflow}}$
Acceptance Criteria	✓ A project is **acceptable** if its profitability index value is **greater than 1**.

Q-41. Distinguish between Net present value method and Internal Rate of Return method.

A-41.

Introduction	✓ NPV and IRR methods differ in the sense that the **results** regarding the choice of an asset under certain circumstances are **mutually contradictory** under two methods. ✓ In case of mutually exclusive investment projects, in certain situations, they may give contradictory results such that if the NPV method finds one proposal acceptable, IRR favours another.
Causes of difference	✓ The different rankings given by the NPV and IRR methods could be due to ❖ **Size disparity** problem, ❖ **time disparity** problem and ❖ **unequal expected lives**.
Absolute value or percentage	✓ The net present value is expressed in **financial values** whereas internal rate of return (IRR) is expressed in **percentage terms**.
Reinvestment	✓ In the net present value, cash flows are assumed to be **re-invested at cost**

of cash flows	**of capital** rate. ✓ In IRR, reinvestment is assumed to be made at **IRR rates**.

Q-42. What is 'Internal Rate of Return'? Explain.

A-42.

Meaning	✓ It is that rate at which **discounted cash inflows are equal to the discounted cash outflows**.
Computation	✓ This rate is to be found by trial and error method. ✓ This rate is used in the **evaluation of investment proposals**. ✓ In this method, the discount rate is not known but the cash outflows and cash inflows are known.
Relevance	✓ In evaluating investment proposals, internal rate of return is **compared with a required rate of return**, known as cut-off rate. ✓ If it is **more than cut-off rate** the project is treated as **acceptable**; otherwise project is rejected.

Q-43. Which method of comparing a number of investment proposals is most suited if each proposal involves different amount of cash inflows? Explain and state its limitations.

A-43.

✓ Profitability Index (PI) method is best suited if each investment proposal involves different amount of cash inflows. PI considers both present value of cash inflows and present value of cash outflows.

Formula	$\frac{\textbf{Sum of Discounted Cash inflows}}{\textbf{Initial Cash outlay or Total Discounted Cash outflow}}$
Acceptance Criteria	✓ A project is **acceptable** if its profitability index value is **greater than 1**.
Superiority	✓ PI is known as a superior method of comparing a number of investment proposal than Net present value method (NPV).

Limitations	✓ Profitability index fails as a guide in resolving capital rationing where projects are indivisible. ✓ Once a single large project with high NPV is selected, possibility of accepting several small projects which together may have higher NPV than the single project is excluded. ✓ Also, situations may arise where a project with a lower profitability index selected may generate cash flows in such a way that another project can be taken up one or two years later, the total NPV in such case being more than the one with a project with highest Profitability Index.

TOPIC – 8, Estimation of Working Capital

Q-44. Discuss the estimation of working capital need based on operating cycle process.

A-44.

Meaning	✓ One of the methods for **forecasting working capital requirement** is based on the concept of operating cycle. ✓ The determination of operating capital cycle helps in the **forecast, control and management of working capital**. ✓ The duration of working capital cycle may vary depending on the nature of the business.
Relevance	✓ The length of operating cycle is the **indicator of performance of management**. ✓ The net operating cycle represents the time interval for which the firm has to negotiate for Working Capital from its Bankers. ✓ It enables to **determine accurately the amount of working capital needed** for the continuous operation of business activities.
Formula	✓ In the form of an equation, the operating cycle process can be expressed as follows:

	Operating Cycle = R + W + F +D – C ✓ Where, R = Raw material storage period W = Work-in-progress holding period F = Finished goods storage period D = Debtors collection period C = Credit period availed

TOPIC – 9, Debtor's Management

Q-45. Differentiate between Factoring and Bills discounting.

A-45.

Basis	**Factoring**	**Bill Discounting**
Other name	Factoring is called as "**Invoice Factoring**".	Bills discounting is known as '**Invoice discounting**."
Parties	In Factoring, the parties are known as the **client, factor and debtor**.	In Bills discounting, they are known as **drawer, drawee and payee**.
Purpose	Factoring is a sort of **management of book debts**.	Bills discounting is a sort of **borrowing from commercial banks**.
Relevant statute	For factoring, there is **no specific act**.	In the case of bills discounting, the **Negotiable Instruments Act** is applicable.

Q- 46. Explain briefly the accounts receivable systems.

A-46. ✓ **Manual systems** of recording the transactions and managing receivables are **cumbersome and costly**.

✓ The **automated receivable management systems automatically update** all the accounting records affected by a transaction.

✓ This system allows the application and tracking of receivables and collections to store important information for an unlimited number of customers and transactions, and accommodate **efficient processing** of customer payments and adjustments.

Q-47. What is factoring? Enumerate the main advantages of factoring.

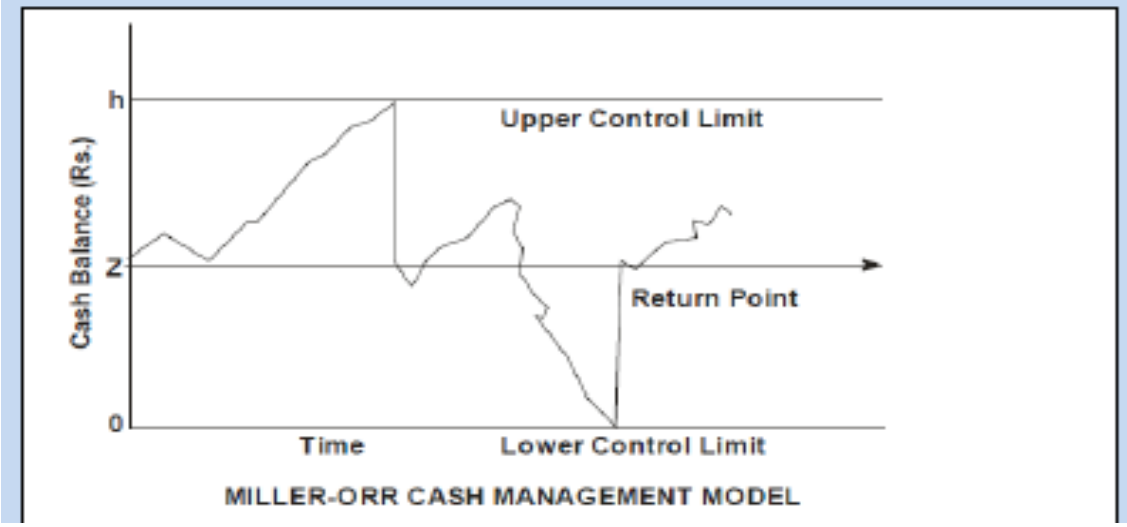
A-47.

Meaning	✓ In factoring, **accounts receivables are generally sold to a financial institution** (a subsidiary of commercial bank-called "Factor"), who charges commission and bears the credit risks associated with the accounts receivables purchased by it. ✓ Its operation is very **simple**. ✓ **Clients enter into an agreement with the "factor"** working out a factoring arrangement according to his requirements. ✓ The **factor then takes the responsibility** of monitoring, follow-up, collection and risk-taking and provision of advance. ✓ The factor generally fixes up a limit customer-wise for the client (seller).	
Advantages	Convertibility	✓ The biggest advantages of factoring are the **immediate conversion of receivables into cash**.
	Certainty	✓ Factoring ensures a **definite pattern of cash inflows**.
	No feature of loan	✓ There is **no debt repayment**, no compromise to balance sheet, no long term agreements or delays associated with other methods of raising capital.

TOPIC – 10, Treasury & Cash Management

Q-48. Write short note on William J. Baumal Vs. Miller–Orr cash management model.
A-48.

- According to this model, the net cash flow is completely stochastic.
- When **changes in cash balance occur randomly, the application of control theory** serves a useful purpose.
- The Miller – Orr model is one of such **control limit models**.
- This model is designed to determine the time and size of transfers between an investment account and cash account.
- In this model **control limits are set for cash balances**.
- These limits may consist of 'h' as upper limit, 'z' as the return point and zero as the lower limit.



MILLER-ORR CASH MANAGEMENT MODEL

- When the cash balance reaches the **upper limit**, the **transfer of cash** equal to 'h – z' is invested in marketable securities account.
- When it touches the **lower limit**, a **transfer from marketable securities** account to cash account is made.
- During the period, when cash balance stays between (h, z) and (z, 0) i.e. high and low limits, no transactions between cash and marketable securities account is made.

- The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transaction, the opportunities cost of holding cash and degree of likely fluctuations in cash balances.
- These **limits satisfy the demands for cash at the lowest possible total costs**.

Q-49. State the advantage of Electronic Cash Management System.

A-49.

✓Significant **saving in time**.

✓**Decrease in interest** costs.

✓**Less paper** work.

✓Greater accounting accuracy.

✓More control over time and funds.

✓Supports **electronic payments**.

✓Faster transfer of funds from one location to another, where required.

✓**Speedy** conversion of various instruments into cash.

✓Making available funds wherever required, whenever required.

✓Reduction in the amount of 'idle float' to the maximum possible extent.

✓Ensures **no idle funds** are placed at any place in the organization.

✓It makes inter-bank balancing of funds much easier.

✓It is a true form of **centralized 'Cash Management'**.

✓Produces faster electronic reconciliation.

✓Allows for detection of book-keeping errors.

✓ Reduces the number of cheques issued.

✓ Earns **interest income** or reduce interest expense.

Q-50. What is Virtual Banking? State its advantages.

A-50.

Meaning	✓ Virtual banking refers to the provision of **banking and related services through the use of information technology** without direct recourse to the

	bank by the customer.
Advantages	✓ **Lower cost** of handling a transaction. ✓ The **increased speed of response** to customer requirements. ✓ The lower cost of operating branch network along with reduced staff costs leads to **cost efficiency**. ✓ Possibility of improved and a **range of services** being made available to the customer rapidly, accurately and at his convenience.

Q-51. 'Management of marketable securities is an integral part of investment of cash.' Comment.

A-51.

- Management of marketable securities is an **integral part of investment of cash** as it serves both the purposes of liquidity and cash, provided choice of investment is made correctly.
- As the working capital needs are fluctuating, it is possible to **invest excess funds in some short term securities**, which can be liquidated when need for cash is felt.
- The selection of securities should be guided by **three principles** namely
- safety,
- maturity and
- marketability.

Q-52. Explain the following :

(i) Concentration Banking

(ii) Lock Box System

A-52.

Concentration Banking	✓ In concentration banking, the company establishes a number of **strategic collection centers in different regions** instead of a single collection centre at the head office. ✓ This system reduces the period between the time a customer mails in his remittances and the time when they become spendable funds with the

	company. ✓ Payments received by the different collection centers are **deposited with their respective local banks** which in turn transfer all surplus funds to the concentration bank of head office.
Lock Box System	✓ Another means to **accelerate the flow of funds** is a lock box system. ✓ The purpose of lock box system is to **eliminate the time** between the receipts of remittances by the company and deposited in the bank. ✓ A lock box arrangement usually is on **regional basis** which a company chooses according to its billing patterns.

Q-53. Explain four kinds of float with reference to management of cash.
A-53.

Billing Float	✓ The **time between the sale and the mailing of the invoice** is the billing float.
Mail Float	✓ This is the **time when a cheque is being processed** by post office, messenger service or other means of delivery.
Cheque processing float	✓ This is the **time required for the seller to sort, record and deposit the cheque** after it has been received by the company.
Bank processing float	✓ This is the **time from the deposit of the cheque to the crediting of funds** in the seller's account.

Q-54. Evaluate the role of cash budget in effective cash management system.

- Cash Budget is the most significant device to **plan for and control cash receipts and payments**.
- It plays a very significant role in **effective Cash Management System**.
- This represents cash requirements of business during the budget period.
- The various **roles of cash budgets** in Cash Management System are :
- Coordinate the timings of cash needs. It identifies the period(s) when there might either be a shortage of cash or an abnormally large cash requirement.
- It also helps to pinpoint period(s) when there is likely to be excess cash.

- It enables firm which has sufficient cash to take advantage like cash discounts on its accounts payable. and
- Lastly, it helps to plan/ arrange adequately needed funds (avoiding excess/ shortage of cash) on favorable terms.

Q-55. Describe the three principles relating to selection of marketable securities.

A-55.

Safety	✓ Return and risks go hand in hand. ✓ As the objective in this investment is ensuring liquidity, **minimum risk** is the criterion of selection.
Maturity	✓ Matching of maturity and forecasted cash needs is essential. ✓ **Prices of long term securities fluctuate more** with changes in interest rates and are therefore, more risky.
Marketability	✓ It refers to the **convenience, speed and cost at which a security can be converted** into cash. ✓ If the security can be sold quickly without loss of time and price, it is highly liquid or marketable.

Q-56.. Explain briefly the functions of Treasury Department.

A-56.

The functions of treasury department management are to ensure proper usage, storage and risk management of liquid funds so as to ensure that the organization 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 :	
Cash Management	✓ The **efficient collection and payment of cash** both inside the organization and to third parties is the function of treasury department. ✓ Treasury normally manages surplus funds in an investment portfolio.

Currency Management	✓ The treasury department manages the **foreign currency risk exposure** of the company. ✓ It advises on the currency to be used when invoicing overseas sales. ✓ It also manages any net exchange exposures in accordance with the company policy.
Fund Management	✓ Treasury department is responsible for **planning and sourcing the company's short, medium and long-term cash needs**. ✓ It also participates in the decision on capital structure and forecasts future interest and foreign currency rates.
Banking	✓ Since short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market, therefore, treasury department carries out **negotiations with bankers** and acts as the initial point of contact with them.
Corporate Finance	✓ Treasury department is involved with both **acquisition and disinvestment activities** within the group. ✓ In addition, it is often responsible for investor relations.

TOPIC – 11, Working Capital Finance

Q-58. Enumerate the various forms of bank credit in financing working capital of a business organization.

A-58.

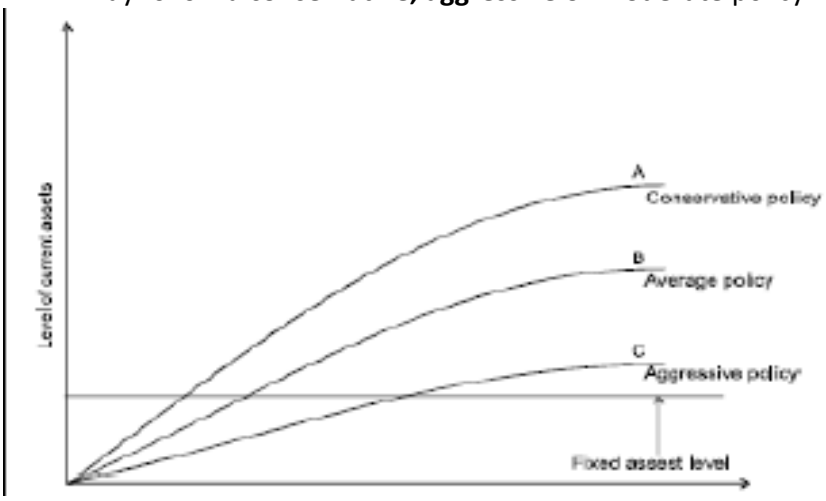
Short Term Loans	✓ In a loan account, the **entire advance is disbursed at one time** either in cash or by transfer to the current account of the borrower. ✓ It is a single advance and given against securities like shares, government securities, life insurance policies and fixed deposit receipts, etc.
Overdraft	✓ Under this facility, customers are allowed to **withdraw in excess of credit balance** standing in their Current Account. ✓ A fixed limit is therefore granted to the borrower within which the borrower is allowed to overdraw his account.

Clean Overdrafts	✓ Request for clean advances are entertained only **from parties which are financially sound and reputed** for their integrity. ✓ The bank has to rely upon the personal security of the borrowers.
Cash Credits	✓ Cash Credit is an arrangement under which a customer is allowed an **advance up to certain limit against credit** granted by bank. ✓ Interest is not charged on the full amount of the advance but on the amount actually availed of by him.
Advances against goods	✓ **Goods are charged to the bank** either by way of pledge or by way of hypothecation. ✓ Goods include all forms of movables which are offered to the bank as security.
Bills Purchased/ Discounted	✓ These advances are allowed against the **security of bills** which may be clean or documentary. ✓ Usance bills maturing at a future date or sight are **discounted by the banks** for approved parties. ✓ The borrower is paid the present worth and the bank collects the full amount on maturity.
Advance against documents of title to goods	✓ A document becomes a document of title to goods when its **possession is recognised by law or business custom** as possession of the goods like bill of lading, dock warehouse keeper's certificate, railway receipt, etc. ✓ An advance against the pledge of such documents is an advance against the pledge of goods themselves.
Advance against supply of bills	✓ Advances against bills for supply of goods to government or semi-government departments against firm orders after acceptance of tender fall under this category. ✓ It is this debt that is assigned to the bank by **endorsement of supply bills and executing irrevocable power of attorney in favour of the banks** for receiving the amount of supply bills from the Government departments.

Q-59. Discuss the liquidity vs. profitability issue in management of working capital.

A-59.

- Working capital management entails the **control and monitoring of all components of working capital** i.e. cash, marketable securities, debtors, creditors etc.
- Finance manager has to pay particular attention to the levels of current assets and their financing.
- To decide the level of financing of current assets, the **risk return trade off** must be taken into account.
- The level of current assets can be measured by creating a **relationship between current assets and fixed assets**.
- A firm may follow a **conservative, aggressive or moderate** policy.



✓A conservative policy means lower return and risk while an aggressive policy produces higher return and risk.

✓The two important aims of the working capital management are **profitability and solvency**.

✓A liquid firm has less risk of insolvency i.e. it will hardly experience a cash shortage or a stock out situation.

✓However, there is a cost associated with maintaining a sound liquidity position.

✓ So, to have a **higher profitability** the firm may have to **sacrifice solvency** and maintain a relatively low level of current assets.

Q-60. Discuss the risk-return considerations in financing current assets.
A-60.

Introduction	✓ The financing of current assets involves a **tradeoff between risk and return**. ✓ A firm can choose from short or long term sources of finance. ✓ **Short term financing is less expensive** than long term financing but at the same time, short term financing involves greater risk than long term financing. ✓ Depending on the mix of short term and long term financing, the approach followed by a company may be referred as matching approach, conservative approach and aggressive approach.
Matching	✓ In matching approach, **long-term finance is used to finance fixed assets and**
Approach	Permanent current assets and short term financing to finance temporary or variable current assets.
Conservative Approach	✓ Under the conservative plan, the firm finances its permanent assets and also a part of temporary current assets with long term financing and hence less risk of facing the problem of shortage of funds.
Aggressive Approach	✓ An aggressive policy is said to be followed by the firm when it uses more short term financing than warranted by the matching plan and finances a part of its permanent current assets with short term financing.

TOPIC – 12, Ratio Analysis

Q-62. Explain briefly the limitations of Financial ratios.

A-62.

Diversified product lines	✓ Many businesses operate a large number of divisions in quite different industries. ✓ In such cases, **ratios calculated on the basis of aggregate data** cannot be used for inter-firm comparisons.
Financial data badly distorted by inflation	✓ **Historical cost values** may be substantially **different from true values**. ✓ Such distortions of financial data are also carried in the financial ratios.
Seasonal factors	✓ Seasonal factors may also **influence financial data**.
Biased ratios	✓ To give a good shape to the popularly used financial ratios (like current ratio, debt equity ratios, etc.), the business may make some **year-end adjustments**. ✓ Such window dressing can change the character of financial ratios which would be different had there been no such change.
Differences in accounting policies and accounting period	✓ It can make the accounting **data of two firms non-comparable** as also the accounting ratios.
No standard set of ratios	✓ Sometimes, a firm's ratios are **compared with the industry average**. ✓ But, if a firm desires to be above the average, then industry average becomes a low standard. ✓ On the other hand, for a below average firm, industry averages become too high a standard to achieve.

Q- 63. Explain the following ratios :

a. Operating ratio

b. Price earnings ratio

A-63.

Operating Ratio	Meaning	✓ This is the **test of the operational efficiency** with which the business is being carried.
	Relevance	✓ The operating ratio **should be low** enough to leave a portion of sales to give a fair return to the investors.
	Formula	$\textbf{Cost of goods sold} + \textbf{Operating Expenses} / \textbf{Net Sales} \times 100$
Price-Earnings ratio	Meaning	✓ This ratio indicates the **number of times the earnings per share is covered** by its market price.
	Relevance	✓ It indicates the **expectation of equity investors** about the earnings of the firm.
	Formula	$\frac{\textbf{Market price per equity share}}{\textbf{Earning per share}}$

Q- 64. Explain the important ratios that would be used in each of the following situations :

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

b. A long term creditors interested in determining whether his claim is adequately secured.

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

d. A finance manager interested to know effectiveness with which a firm uses its available resources.

A-64.

a	**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.
b	**Capital Structure/ Leverage**	✓ 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

	Ratios	adequately secured may use **Debt-service coverage and interest coverage ratio**.
c	**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.
d	**Activity Ratios**	✓ The finance manager would use these ratios to evaluate the efficiency with which the firm manages and utilizes its assets. ✓ Some important ratios are : ❖ **Capital turnover ratio** ❖ **Current and fixed assets turnover ratio** ❖ Stock, Debtors and Creditors turnover ratio.

Q-65. Comment on the Debt Service Coverage Ratio.

A-65.

Meaning	✓ Debt service coverage ratio indicates the **capacity of a firm to service a particular level of debt** i.e. repayment of principal and interest.
Relevance	✓ High credit rating firms **target Debt service coverage ratio to be greater than 2** in its entire loan life. ✓ High Debt service coverage ratio facilitates the firm to borrow at the most competitive rates. ✓ Lenders are interested in this ratio to judge the **firm's ability to pay off current interest and installments**.
Formula	$\frac{\textbf{Earnings available for debt service}}{\textbf{Interest} + \textbf{Installments}}$

TOPIC – 13, Risk Analysis in Capital Budgeting

Q-66. What is certainty equivalent.

A-66.

Definition	✓ As per CIMA terminology, "An approach to dealing with risk in a capital budgeting context. ✓ It involves **expressing risky future cash flows in terms of the certain cash flow** which would be considered, by the decision maker, as their equivalent, that is the decision maker would be indifferent between the risky amount and the (lower) riskless amount considered to be its equivalent."
Mechanism	✓ The certainty equivalent is a **guaranteed return** that the management would accept rather than accepting a higher but uncertain return. ✓ This approach allows the decision maker to incorporate his or her utility function into the analysis. ✓ In this approach, a **set of risk less cash flow is generated** in place of the original cash flows.
Advantages	✓ It is **simple** and easy to understand and apply. ✓ It can **easily be calculated** for different risk levels applicable to different cash flows.
Disadvantages	✓ There is **no Statistical or Mathematical model** available to estimate certainty Equivalent. ✓ Certainty Equivalent are **subjective** and vary as per each individual's estimate.

Q-67. Write two main reasons for considering risk in Capital Budgeting decisions.

A-67.

Opportunity Cost	✓ There is an opportunity cost involved while investing in a project for the level of risk. Adjustment of risk is necessary **to help make the decision as to whether the returns out of the project are proportionate with the risks borne** and whether it is worth investing in the project over the other investment options available.
Real Value	✓ Risk adjustment is required **to know the real value of the Cash Inflows**.

TOPIC – 14, Leasing Decisions

Q- 68. Discuss the advantages of leasing.

A-68.

Lease may be low cost alternative	✓ Leasing is alternative to purchasing. ✓ As the lessee is to make a series of payments for using an asset, a lease arrangement is similar to a debt contract. ✓ The benefit of lease is based on a comparison between leasing and buying an asset. ✓ Many lessees find **lease more attractive because of low cost**.
Tax benefit	✓ Lease Rent is **tax deductible**.
Working	✓ In case of purchase of asset, bank doesn't provide 100% finance usually and

capital conservation	the difference is to be paid from own funds. ✓ In case of lease, there is **no requirement of large amount of funds initially**.
Preservation of Debt Capacity	✓ **Operating lease** payment is treated as expenditure in the profit and loss account. ✓ Neither the asset taken on lease appears as asset nor does the liability representing present value of future lease payment (cost of leased asset) appear as liability in the balance sheet. ✓ That is, operating lease **doesn't have any balance sheet impact**. ✓ So, operating lease does not matter in computing debt equity ratio. ✓ This enables the lessee to **go for debt financing more easily**.