

PAPER – 2 : MANAGEMENT ACCOUNTING AND FINANCIAL ANALYSIS

QUESTIONS

1. Compute the values of a preference share and an equity share of each of the companies A and B on the basis of following information:-

	<i>Company A</i>	<i>Company B</i>
	<i>Rs.</i>	<i>Rs.</i>
Profit after tax	10,00,000	10,00,000
12% Preference Capital (shares of Rs.100 each)	10,00,000	20,00,000
Equity Capital (shares of Rs.10 each)	50,00,000	40,00,000

Assume that market expectation is 15% and that 80% of profits are distributed.

2. The capital structure of a company, on 31st March, 2006 was as under:

	<i>Rs.</i>
Equity share capital	5,00,000
11% Preference Capital	3,00,000
12% Secured Debentures	4,00,000
Reserves	3,00,000

The company on an average, earns a profit of Rs.4 lakhs annually before deduction of interest on debentures and income tax, which works out to 45%.

The normal return on equity shares of companies similarly placed is 15%, provided:

- (a) The profit after tax covers the fixed interest and fixed dividends at least four times;
- (b) Equity capital and reserves are 150% of debentures and preference capital;
- (c) Yield on shares is calculated at 60% of profits distributed and 5% on undistributed profits;

The company has been paying regularly an equity dividend of 18%.

Ascertain the value of each equity share of the Company.

3. Sterling Video Ltd. is considering building an assembly plant and the company has two options, out of which it wishes to choose the best plant. The projected output is 10,000 pieces per month. The following data are available:

		<i>Plant A</i>	<i>Plant B</i>
		<i>Rs.</i>	<i>Rs.</i>
Initial Cost		30,00,000	25,00,000
Direct Labour Cost Per year	First shift	15,00,000	7,50,000
	Second shift	----	9,50,000
Overhead (per year)		2,50,000	2,10,000

Both the plants have an expected life of 10 years after which there will be no salvage value. The cost of capital is 10%. The present value of an ordinary annuity of Re.1 for 10 years @ 10% is 6.1446. Ignore effect of taxation.

You are to determine (a) what would be the desirable choice and (b) what other important elements are to be considered before final decision is taken.

4. A company is considering the replacement of its existing machine which is obsolete and unable to meet the rapidly rising demand for its product. The company is faced with two alternatives to buy Machine A which is similar to the existing machine or to go in for Machine B which is more expensive and has much greater capacity. The cash flows at the present level of operations under the two alternatives are as follows:

Machine	Immediate Cash outflow (in lakhs of Rs.)	Cash inflows (in lakhs of Rs.) at the end of				
		1 st Year	2 nd year	3 rd year	4 th year	5 th year
Machine A	25	--	5	20	14	14
Machine B	40	10	14	16	17	15

The Company's cost of capital is 10%.

The Finance Manager tries to appraise the machines by calculating the following:-

- (1) Net Present Value;
- (2) Profitability Index;
- (3) Payback period; and
- (4) Discounted payback period.

At the end of his calculations, however, the Finance Manager is unable to make up his mind as to which machine to recommend.

You are required to make these calculations and in the light thereof to advise the Finance Manager about the proposed investment.

Note: Present values of Rs.1 at 10% discount rate are as follows:-

Year P.V.	0	1	2	3	4	5
	1.00	.91	.83	.75	.68	.62

5. A chemical company belongs to a risk-class for which the appropriate P/E ratio is 10. It currently has 50,000 equity shares (outstanding) selling at Rs.100 each. The firm is contemplating the declaration of dividend of Rs.8 per share at the current fiscal year which has just started. Given the assumptions of modigliani and Miller, answer the following questions:
- (i) What will be the price of the share at the end of the year (a) if dividend is not declared; and (b) if it is declared?
 - (ii) Assuming that the company pays the dividend, has a net income (Y) of Rs.5,00,000 and makes new investments of Rs.10,00,000 during the period, how many new shares must be issued.
6. The Capital of XYZ Ltd., is as follows:
- | | | |
|------------------------------------|---|-------------|
| 9% Preference Shares of Rs.10 each | = | Rs.3,00,000 |
| Equity Shares of Rs.10 each | = | Rs.8,00,000 |
- The following further informations are available:
- (i) Profit after tax Rs.2,70,000
 - (ii) Equity Dividend paid 20%
 - (iii) Market price of Equity Shares Rs.40 each.

You are required to workout the following indices. Show your workings:

- (i) Dividend yield on Equity Shares.
 - (ii) Cover for Preference & Equity Dividend.
 - (iii) Earning per Equity Share &
 - (iv) Price Earning Ratio.
7. From the following information, calculate the expected rate of return of a portfolio:
- | | |
|---|------|
| Risk free rate of interest | 12% |
| Expected return of market portfolio | 18% |
| Standard deviation of an asset | 2.8% |
| Market standard deviation | 2.3% |
| Correlation co-efficient of portfolio with market | 0.8% |
8. Calculate the expected return on portfolio 'A' with the following data:
- (a) Risk free rate of return 8%.
 - (b) Expected return on market portfolio 12%.
 - (c) Market sensitivity index 0.75%.
9. Following is the data regarding six securities:
- | | A | B | C | D | E | F |
|------------|---|---|----|---|---|---|
| Return (%) | 8 | 8 | 12 | 4 | 9 | 8 |
| Risk (%) | 4 | 5 | 12 | 4 | 5 | 6 |
- (Standard Deviation)
- (i) Which of the securities will be selected?
 - (ii) Assuming perfect correlation, analyse whether it is preferable to invest 75% in security A and 25% in security C.
10. ABC Company Ltd., has two financial options in respect of procuring an Equipment for utilizing the same for 5 years costing Rs.10,00,000/-. The two options are:-
- Option I: Borrow Rs.10,00,000/- at an interest rate of 15%. The loan is repayable at 5-year-end instalments. The equipment could be sold at the end of its 5 year economic life at a realizable value of Rs.1,00,000/-.
- Option II: Lease-in the asset for a period of 5 years at an yearly rental of Rs.3,30,000/- payable at end-year.
- The rate of Depreciation allowable on the equipment is 15%. The Company has to pay Income tax @ 50% and has a Discounting rate of 16% Restrict working up to 10th year in case of Option I.
- Evaluate the two options and give your opinion.
11. ABC Company Ltd., is faced with two options as under in respect of acquisition of an asset valued Rs.1,00,000/-. Either
- (a) to acquire the asset directly by taking a Bank Loan of Rs.1,00,000 payable in 5 year end instalments at an interest of 15%.
- OR
- (b) to lease in the asset at yearly rentals of Rs.320 per Rs.1,000 of the asset value for 5 years payable at year end.

The following additional information are available:

- (a) The rate of depreciation of the asset is 15% W.D.V.
- (b) The Company has an effective tax rate of 50%.
- (c) The Company employs a discounting rate of 16%.

You are to indicate in your report which option is more preferable to the Company. Restrict calculations over a period of ten years.

The present value of one Rupee due at the end of each year is:

<i>End of Year</i>	<i>Present Value</i>
1	0.86207
2	0.74316
3	0.64066
4	0.55229
5	0.47611
6	0.41044
7	0.35313
8	0.30503
9	0.26295
10	0.22668

12. The summarized balance sheet of R Co. Ltd. as on 31st March, 2006 is given below:

<i>Liabilities</i>	<i>Rs.</i>	<i>Assets</i>	<i>Rs.</i>
Equity share capital (2,00,000 @ Rs.10 each)	20,00,000	Fixed assets	19,00,000
13% Preference share capital	1,00,000	Investments	1,00,000
Retained earnings	4,00,000	Current assets:	
12% Debentures	3,00,000	Inventories	5,00,000
Current liabilities	2,00,000	Debtors	4,00,000
		Bank	1,00,000
	<u>30,00,000</u>		<u>30,00,000</u>

Negotiations for takeover of R Ltd. result in its acquisition by A Ltd. The purchase consideration consists of : (i) Rs.3,30,000 13% debentures of A Ltd., for redeeming the 12% debentures of R Ltd; (ii) Rs.1,00,000 12% convertible preference shares in A Ltd. for the payment of the preference share capital of R Ltd.; (iii) 1,50,000 equity shares of A Ltd. to be issued at its current market price of Rs.15; and (iv) A Ltd. would meet dissolution expenses of Rs.30,000. The break-up figures of eventual disposition by A Ltd., of unrequired assets and liabilities of R Ltd. are: investments- Rs.1,25,000; debtors- Rs.3,50,000; inventories- Rs.4,25,000; and payment of current liabilities – Rs.1,90,000.

The project is expected to generate yearly operating CFAT of Rs.7,00,000 for 6 years. It is estimated that fixed assets of R Ltd. would fetch Rs.3,00,000 at the end of 6th year.

The firm's cost of capital is 15%. As a Financial Consultant, comment on the financial prudence of merger decision of A Ltd. (PV at 15% rate of discount is- 1st year: 0.870, 2nd year: 0.756, 3rd year: 0.658, 4th year: 0.572, 5th year: 0.496 and 6th year 0.432).

13. A Deep Discount Bond (DDB) was issued by a financial institution for a maturity period of 10 years and having a par value of Rs.25,000. Find out the value of the Bond given that the required rate of return is 16%.

14. Calculate the value of equity share from the followings:

Equity Share Capital (Rs.20 each)	Rs. 50,00,000
Reserves and Surplus	Rs. 5,00,000
15% Secured Loans	Rs. 25,00,000
12.5% Unsecured Loans	Rs. 10,00,000
Fixed Assets	Rs. 30,00,000
Investments	Rs. 5,00,000
Operating Profit	Rs. 25,00,000
Tax Rate	50%
P/E Ratio (Price-Earnings)	12.5

15. An investor has invested his savings in a company from whom dividends are expected to grow @ 20% for 15 years and thereafter @7% forever. Find out the value of the equity share given that the current dividend per share is Rs.1 and the required rate of return of the investor is 9%.

16. A Ltd. wants to take over B Ltd. and the financial details of both are as follows:

	<i>A Ltd.</i>	<i>B Ltd.</i>
Preference share capital	Rs.20,000	—
Equity share capital of Rs.10 each	1,00,000	Rs.50,000
Share Premium	—	2,000
Profit and Loss A/c	38,000	4,000
10% Debentures	15,000	5,000
	1,73,000	61,000
Fixed assets	1,22,000	35,000
Current assets	51,000	26,000
	1,73,000	61,000
Profit after tax and preference dividend	24,000	15,000
Market price	24	27

What should be share exchange ratio to be offered to the shareholders of B Ltd., based on net assets value, (ii) EPS, and (iii) market price. Which should be preferred from the point of view of A Ltd.

17. Company X acquires Company Y on "Share exchange" basis. The position before take-over was as under:

	<i>Company X</i>	<i>Company Y</i>
No. of shares	10,000	5,000
Total earnings	Rs.1,00,000	Rs.50,000
Market price of share (MPS)	Rs.20	Rs.15

The shareholders of Company Y are offered 3 shares of Company X for 4 shares Company Y.

You are required to calculate the EPS of the amalgamated company vis-à-vis before take over position, of the two companies and gain/loss of the shareholders of both the firms consequent to amalgamation.

18. X Co. Ltd. issued Commercial Paper s per following details:

Date of issue	17 th January, 2003	No. of days	–90
Date of maturity	17 th April, 2003	Interest rate	–11.25% p.a.

What was the net amount received by the company on issue of Commercial Paper?

19. P Co. has to make payment of Rs.2 million (Rs.20 lakhs) on 16th April, 2003. It has a surplus money today i.e., 15th January, 2003 and the company has decided to invest in Certificate of Deposit (CDs) of a leading nationalized bank at 8% p.a. What money is required to be invested now?
20. Lucky Limited issued shares of Rs.100 each amounting to Rs.1,000 crores. The company appointed Merchant Banker as Book-runner who collected information from various investors for book building process. The quoted prices of various investors are:

X ₁	Quoted price for each share	@ Rs.97 for Rs.100 Crores
X ₂	Quoted price for each share	@ Rs.98 for Rs.500 Crores
X ₃	Quoted price for each share	@Rs.101 for Rs.100 Crores
X ₄	Quoted price for each share	@Rs.100 for Rs.200 Crores
X ₅	Quoted price for each share	@Rs.99 for Rs.100 Crores

Calculate Book Built price of share.

21. (a) Outline the benefits of Book Building Process?
(b) What are the SEBI's major guidelines regarding 75% Book Building Process?
22. An investor is seeking the price to pay for a security, whose standard deviation is 2.00 per cent. The correlation coefficient for the security with the market is 0.8 and the market standard deviation is 2.2 per cent. The return from Government securities is 5.2 per cent and from the market portfolio is 9.8 per cent. The investor knows that, by calculating the required return, he can then determine the price to pay for the security. What is the required return on the security?
23. The following information is given:

Risk-free rate of return	8%
Expected rate of return on market portfolio	16%
β of a security	0.7

- (i) Find out the expected rate of return of the security.
(ii) If another security has an expected return of 20%, what must be its beta?
24. Calculate the expected rate of return of the security and interpret the same from the following information:

Beta of a security	0.5
Expected rate of return on portfolio	15%
Risk-free rate of return	0.06

If another security has an expected rate of return of 18%, what would be its beta?

25. From the following information, calculate the expected rate of return of a portfolio:

Risk-free rate of interest	8%
Expected return of market portfolio	18%
Standard deviation of an asset	2.8%
Market standard deviation	2.3%
Correlation co-efficient of portfolio with market	0.5%

26. (i) Calculate the market sensitivity index and the expected return on the portfolio from the following data:

Standard deviation of an asset	2.5%
Market standard deviation	2.0%
Risk-free rate of return	13.0%
Expected return on market portfolio	15.0%
Correlation coefficient of portfolio with market	0.8

- (ii) What will be the expected return on the portfolio if portfolio beta is 0.5 and the risk-free return is 10%.

27. The market portfolio has a historically based expected return of 0.095 and a standard deviation of 0.035 during a period when risk-free assets yielded 0.025. The 0.06 risk premium is thought to be constant through time. Riskless investments may now be purchased to yield 0.08.

A security has a standard deviation of 0.07 and a 0.75 correlation with the market portfolio. The market portfolio is now expected to have a standard deviation of 0.035.

- (i) Find the market's return-risk trade-off. (ii) Find the security beta; (iii) Find the expected rate of return on the security.

28. John inherited the following securities on his uncle's death:

Type of Security	Nos.	Annual Coupon %	Maturity Years	Yield %
Bond A (Rs.1,000)	10	9	3	12
Bond B (Rs.1,000)	10	10	5	12
Preference Shares C (Rs.100)	100	11	.	13*
Preference Shares D (Rs.100)	100	12	.	13*

*Likelihood of being called at a premium over par. Compute the current value of his uncle's portfolio.

29. Stocks A and B have the following historical returns:

Year	Stock A's Return (K_A) %	Stock B's Return (K_B) %
2002	-12.24	-5.00
2003	23.67	19.55
2004	35.45	44.09
2005	5.82	1.20
2006	28.30	21.16

You are required to calculate the average rate of return for each stock during the period 2002 through 2006. Assume that someone held a portfolio consisting 50% of Stock A and 50% of Stock B. What would have been the realised rate of return on the portfolio in each year from 2002 through 2006? What would have been the average return on the portfolio during the period? (You may assume that the year ended on 31st March).

30. The total market value of the equity share of Sun Company is Rs.60,00,000 and the total value of the debt is Rs.40,00,000. The treasurer estimate that the beta of the stocks is currently 1.5 and that the expected risk premium on the market is 10 per cent. The treasury bill rate is 8 per cent.

Required:

1. What is the beta of the Company's existing portfolio of assets?
 2. Estimate the Company's Cost of capital and the discount rate for an expansion of the company's present business.
31. The turnover of R Ltd. is Rs.60 lakhs of which 80% is on credit. Debtors are allowed one month to clear off the dues. A factor is willing to advance 90% of the bills raised on credit for a fee of 1% a month plus a commission of 4% on the total amount of debts. R Ltd. as a result of this arrangement is likely to save Rs.21,600 annually in management costs and avoid bad debts at 1% on the credit sales. Advise the company regarding the method to be followed.
32. Under an advance factoring arrangement Bharat Factors Ltd. (BFL) has advanced a sum of Rs.14 lakhs against the receivables purchased from ABC Ltd. The factoring agreement provides for an advance payment of 80% (maintaining 'factory reserve' of 20% to provide for disputes and deductions relating to the bills assigned) of the value of factored receivables and for guaranteed payment after three months from the date of purchasing the receivables. The advance carries a rate of interest of 20% per annum compounded quarterly and the factoring commission is 1.5% of the value of factored receivables. Both the interest and commission are collected up-front.
- (i) Compute the amount of advance payable to ABC Ltd.
 - (ii) Calculate per annum the effective cost of funds made available to ABC Ltd.
 - (iii) Calculate the effective cost of funds made available to ABC Ltd. assuming that the interest is collected in arrear and commission is collected in advance.
33. A Bank is analyzing the receivables of Jackson Company in order to identify acceptable collateral to a short-term loan. The company's credit policy is 2/10 net 30. The bank lends 80 per cent on accounts where customers are not currently overdue and where the average payment period does not exceed 10 days past the net period. A schedule of Jackson's receivables has been prepared. How much will the bank lend on a pledge of receivables, if the bank uses a 10 per cent allowance for cash discount and returns?

<i>Account</i>	<i>Amount (Rs.)</i>	<i>Days Outstanding in days</i>	<i>Average Payment Period historically</i>
74	25,000	15	20
91	9,000	45	60
107	11,500	22	24
108	2,300	9	10
114	18,000	50	45
116	29,000	16	10
123	14,000	27	48
	1,08,800		

34. A Ltd. has a total sales of Rs.3.2 crores and its average collection period is 90 days. The past experience indicates that bad-debt losses are 1.5% on Sales. The expenditure incurred by the firm in administering its receivable collection efforts are Rs.5,00,000. A factor is prepared to buy

the firm's receivables by charging 2% commission. The factor will pay advance on receivables to the firm at an interest rate of 18% p.a. after withholding 10% as reserve. Calculate the effective cost of factoring to the Firm. Assume a year of 360 days.

35. Explain briefly the Dow-Jones theory regarding the behaviour of stock market prices?
36. Write a short note on the following:
 - (i) Packing Credit;
 - (ii) Hypothecation and Pledge;
 - (iii) Risk Capital Foundation;
 - (iv) Social Cost Benefit Analysis;
 - (v) Convertible debentures;
 - (vi) Bridge Finance;
 - (vii) CPP Method
 - (viii) Current Cost Accounting;
 - (ix) Use of tax provision as a source of Finance.

SUGGESTED ANSWERS/HINTS

1. Working Notes:

	Company A (Rs.)	Company B (Rs.)
Profit after tax	10,00,000	10,00,000
Less: Preference Dividend	1,20,000	2,40,000
Profit available to Equity Shareholders	8,80,000	7,60,000
Earning Per Share (EPS)	Rs. 8,80,000	Rs. 7,60,000
Equity shares	5,00,000	4,00,000
	= Rs.1.76	Rs.1.90
80% of Profits are distributed		
80% of 8,80,000 =	7,04,000	6,08,000
Dividend Per Share (DPS)	Rs.7,04,000	Rs.6,08,000
5,00,000 Eq. Shares		4,00,000
	= Rs.1.408	Rs.1.52
Preference Dividend Coverage:	$\frac{10,00,000}{1,20,000}$	$\frac{10,00,000}{2,40,000}$
= $\frac{\text{PAT}}{\text{Preference Dividend}}$	= 8.33 times	= 4.17 times
Solution	Company A	Company B
a. Value of Preference Share	$\frac{12\% \times 100}{15\%}$	$\frac{12\% \times 100}{15\%}$
$\frac{\text{Preference Dividend}}{\text{Market capitalisation rate}} \times 100$	= Rs.80.00	= Rs.80.00
Preference Dividend coverage	8.33 times	4.17 times
Hence value of preference share may be taken as	Rs.90.00	Rs.80.00
b. Value of Equity Share: (Note 1)		
i. Dividend capitalization Method		

	$\frac{\text{DPS}}{\text{Market Capitalisation Rate}} \times 100$	$\frac{1.408 \times 100}{15}$ = Rs.9.39	$\frac{1.52 \times 100}{15}$ = Rs.10.13
ii.	Earnings Capitalisation Method		
	$\frac{\text{EPS}}{\text{Market Capitalisation Rate}} \times 100$	$\frac{1.76 \times 100}{15}$ = Rs.11.73	$\frac{1.90 \times 100}{15}$ = Rs.12.67

Note: 1.If an investor wants to buy a small portion of Equity capital of the company, Dividend Capitalisation method may be adopted for valuing Equity Shares. If he wants to have controlling interest in the company, Earnings Capitalisation method may be adopted for valuing Equity Share. If he wants to have controlling interest in the company, Earnings Capitalisation method is better for valuing Equity Share.

2. (a)	Coverage for the fixed interest and fixed dividends:	Rs.
	EBIT	4,00,000
Less:	Debenture Interest 12% on 4 lakhs	48,000
	PBT	3,52,000
Less:	Tax at 45%	1,58,400
	PAT	1,93,600
	Add back: Debenture Interest	48,000
	Profit before Interest but after tax	2,41,600
	Fixed Interest (Debenture Interest)	48,000
	Preference Dividends 11% on 3 lakhs	33,000
	Fixed Interest & fixed dividends	81,000

$$\text{Coverage for fixed interest and fixed dividends} = \frac{2,41,600}{81,000}$$

$$= 2.98 \text{ times}$$

Note.- It should be 4 times as given in the question.

- (b) Equity Share capital + Reserves = Rs.8,00,000
Debentures & preference capital = Rs.7,00,000

$$\text{Ratio} = \frac{8,00,000}{7,00,000} \times 100 = 114.29\%$$

But it should be 150% as given in the question.

- (c) Yield on equity shares;

		Rs.
	PAT	1,93,600
Less:	Preference Dividends	33,000
	Equity dividends 18% on 5 lakhs	90,000
	Undistributed Profit	70,600
	60% of distributed profit of Rs.90,000 =	54,000
	5% of undistributed profit of Rs.70,600 =	3,530
		57,530

$$\text{Yield on Equity Shares} = \frac{57,530}{5,00,000} \times 100 = 11.506\%$$

Note.- The company has been paying regularly an equity dividend of 18%.

Solution

Normal return on equity shares of companies similarly placed is 15% provided a, b and c are within the parameters mentioned in the question.

Normal return			15%	
Add	(a)	risk for low coverage	2%	(assumed)
	(b)	risk for low ratio	2%	(assumed)
			<u>19%</u>	
Less:	(c)	Premium for higher yield.		
		18% is higher than 11.506%	0.5%	(assumed)
		Normal Return (Recalculated)	18.5%	

$$\begin{aligned} \text{Value of each equity share} &= \frac{\text{Expected rate of dividend}}{\text{Normal Return}} \times \text{Paid-up value of share} \\ &= \frac{18\%}{18.5\%} \times 10 = \text{Rs.9.73} \end{aligned}$$

Note.-The solution may vary depending upon the assumptions for risk and premium.

3. (a) Statement of N.P.V.

Direct Labour Cost + Overheads for Plant B	19,10,000
Direct Labour Cost + Overheads for Plant A	<u>17,50,000</u>
Savings in Cost for using Plant A	<u>1,60,000</u>
P.V. of Savings for 10 years:	
1,60,000 × 6.1446 =	9,83,136
Extra Initial Cost for Plant A:	
30 lakhs - 25 lakhs =	<u>5,00,000</u>
NPV	<u>4,83,136</u>

As the NPV is Positive, the desirable choice is to choose the Plant A.

- (b) (i) Market demand may be ascertained.
(ii) If the demand is higher, second shift operation can be introduced.
(iii) Overheads may be divided into fixed and variable.

4. 1. N.P.V. Method

Machine A				Machine B			
Year end	Cash inflow	PV factor at 10%	Present value (Rs. in lakhs)	Year end	Cash inflow	P.V. factor at 10%	Present Value (Rs.in lakhs)
1.	---	0.91	----	1.	10	0.91	9.10
2.	5	0.83	4.15	2.	14	0.83	11.62

3.	20	0.75	15.00	3.	16	0.75	12.00
4.	14	0.68	9.52	4.	17	0.68	11.56
5.	14	0.62	8.68	5.	15	0.62	9.30
Total	53		37.35	Total	72		53.58
Less: Investment			25.00	Less: Investment			40.00
N.P.V.			12.35	N.P.V.			13.58

2. Profitability Index: $\frac{\text{Total P.V. of Cash inflows}}{\text{Total P.V. of Cash outflow}}$

$$\text{Machine A} = \frac{\text{Rs. 37.35 lakhs}}{\text{Rs. 25.00 lakhs}} = 1.494$$

$$\text{Machine B} = \frac{\text{Rs. 53.58 lakhs}}{\text{Rs. 40.00 lakhs}} = 1.3395$$

3. Payback Period

Machine A (Rs. in lakhs)			Machine B (Rs. in lakhs)		
Year end	Cash in flow	Cumulative Cash inflow	Year end	Cash inflow	Cumulative Cash inflow
1.	-----	----	1.	10	10
2.	5	5	2.	14	24
3.	20	25	3.	16	40
4.	14	39	4.	17	57
5.	14	53	5.	15	72
Investment:	Rs. 25 lakhs		Investment:	Rs. 40 lakhs	
Payback	Period: 3 Years		Payback	Period: 3 Years	

4. Discounted Payback Period

Machine A (Rs. in lakhs)			Machine B (Rs. in lakhs)		
Year end	Discounted Cash inflow	Cumulative Discounted Cash inflow	Year end	Discounted Cash inflow	Cumulative Discounted Cash inflow
1.	-----	----	1.	9.10	9.10
2.	4.15	4.15	2.	11.62	20.72
3.	15	19.15	3.	12.00	32.72
4.	9.52	28.67	4.	11.56	44.28
5.	8.68	37.35	5.	9.30	53.58
Investment:		25.00	Investment:		40.00
At the end of 3 years		19.15	At the end of 3 Years		32.72
Balance		5.85	Balance		7.28
3 years + $\frac{5.85}{9.52} = 3 + 0.61$		3.61 Years	3 Years + $\frac{7.28}{11.56} = 3 + 0.63$		3.63 Years

Summary

Method	Preference of Machine	Reason
1. N.P.V.	B	Higher N.P.V.
2. Profitability Index	A	Higher Index
3. Payback Period	Both are same	—
4. Discounted Payback Period	A	Lower Period

Advice

Each method gives different result. The ranking is different. Assuming that there is no Capital rationing, Machine B is preferable as it is having higher N.P.V. of Rs.13.58 lakhs. Machine B has much greater capacity. The demand is rapidly rising for its product as stated in the question. Hence it is advised that Machine B should be purchased.

5. Under M-M model the following formula is used to ascertain the market price of Equity Share:

$$PO = \frac{1}{1+Ke} \times (D1 + P1)$$

- (i) a. If dividend is not declared:

$$100 = \frac{1}{1+0.10} \times (0 + P1) \qquad 100 = \frac{P1}{1.10}$$

$$P1 = 100 \times 1.10 = \text{Rs.}110 \text{ price of the share at the end of the year.}$$

- b. If dividend is declared:

$$100 = \frac{1}{1+0.10} \times (8 + P1) \qquad 100 = \frac{8 + P1}{1.10}$$

$$110 = 8 + P1$$

$$P1 = 110 - 8 = \text{Rs.}102.$$

- (ii) Price of Equity share would be Rs.102, if dividend is paid. Total dividend on 50,000 equity shares = 50,000 × 8 = Rs.4,00,000. Hence number of shares to be issued:

$$nP1 = I - (NP - nD1)$$

$$n102 = 10,00,000 - (5,00,000 - 4,00,000)$$

$$n102 = 9,00,000 \quad n = \frac{9,00,000}{102} = 8824 \text{ shares to be issued}$$

Note: Appropriate P/E ratio is 10. It has been taken as capitalization rate of 10%. Hence Ke = 0.10.

6. Working Notes

Equity Dividend Paid 20% i.e., 20% of 10 = Rs.2 per share.

Solution

$$(i) \text{ Dividend Yield on Equity Share} = \frac{DPS}{\text{Market price per Eq. Share}} \times 100$$

$$= \frac{2}{40} \times 100 = 5\%$$

$$(ii) \text{ Cover for Pref. \& Eq. Dividend} = \frac{\text{Profit after tax}}{\text{Preference Dividend} + \text{Equity Dividend}}$$

$$= \frac{2,70,000}{27,000 + 1,60,000} = \frac{2,70,000}{1,87,000} = 1.44 \text{ times.}$$

(iii) Earnings per Equity Share (EPS):

	Rs.
Profit after tax	2,70,000
Less: Preference Dividend	27,000
Profit to Eq. Shareholders	2,43,000

No. of Equity Shares = 80,000

$$\text{E.P.S.} = \frac{2,43,000}{80,000} = 3.0375$$

(iv) Price Earnings (PE) Ratio:

$$\frac{\text{Market price per Eq. Share}}{\text{EPS}} = \frac{40}{3.0375} = 13.17$$

7. The formula for the expected rate of return is as follows:

Formula for expected return:

$$E(R_P) = R_f + B_P [E(R_M) - R_f]$$

Where

$E(R_P)$ = Expected rate of return

R_f = Risk free rate of return

B_P = Market sensitivity index or portfolio beta

$E(R_M)$ = Expected return on Market Portfolio

$[E(R_M) - R_f]$ = Market risk premium

The information regarding Beta (B) is not given in the question. But it can be ascertained as follows:-

$$B = \frac{r_{sm} \times \text{standard deviation of asset}}{\text{standard deviation of market}}$$

Where r_{sm} = Correlation Co-efficient of Portfolio with market.

$$B = \frac{0.8 \times 0.028}{0.023} = 0.97$$

$$E(R_P) = 12\% + 0.97 (18\% - 12\%)$$

$$= 0.12\% + 0.97 (0.06)$$

$$= 0.12 + 0.0582 = 0.1782 \text{ i.e. } 17.82\%.$$

8. Formula for expected return:

$$E(R_P) = R_f + B_P [E(R_M) - R_f]$$

Where $E(R_P)$ = Expected return of the portfolio

R_f = Risk free rate of return

B_P = Market sensitivity index or portfolio Beta

$E(R_M)$ = Expected return on market portfolio

$[E(R_M) - R_f]$ = Market Risk Premium

Solution

$$\begin{aligned} E(R_P) &= 8\% + 0.75 (12\% - 8\%) \\ &= 0.08 + (0.75 \times 0.40) \\ &= 0.80 + 0.03 \\ &= 0.11 \text{ i.e. } 11\%. \end{aligned}$$

9. (i) D: Very low return & risk of 4% - Need not be selected.
A, B & F: Same return of 8% but risk is more in B & F. Hence A is to be selected.
E: Compared to B, return is more but risk is same. Hence E is to be selected.
C: Though it is of high risk, it gives highest return. Hence it may also be selected.

Conclusion: Securities A, C & E will be selected.

- (ii) In case of perfect correlation, their risk and return can be averaged as follows:

A 75% i.e. $\frac{3}{4}$

C 25% i.e. $\frac{1}{4}$

Return: A $\frac{3}{4}$ of 8% + C $\frac{1}{4}$ of 12%.

$$= 6\% + 3\% = 9\% \text{ Average return.}$$

Risk: A $\frac{3}{4}$ of 4% + C $\frac{1}{4}$ of 12%

$$3\% + 3\% = 6\% \text{ average risk.}$$

In case of E, Return is 9%, risk is 5%. Hence it is not preferable to invest in A & C. But it is preferable to invest in E as it has lesser risk (5%) for the same return (9%).

10. Evaluation of Two Options

Option I

Borrowing option with 15% depreciation and salvage value

(Rs.'000)

Year	Principal Repayment	Interest at 15%	Depreciation	Tax Shield (3+4)×50%	Net Cash Flow (2+3)-(5)	Discounted Cash Flow @ 16%
1	200.00	150.00	150.00	150.00	200.00	172.42
2	200.00	120.00	127.5	123.8	196.2	145.82
3	200.00	90.00	108.4	99.2	190.8	122.23
4	200.00	60.00	92.1	76.1	183.9	101.57
5	200.00	30.00	78.3	54.2	175.8	83.70
	(100.00)	Realisable	Value		(100.00)	(47.61)
6	---	---	51.6	25.8	(25.8)	(10.59)
7	---	---	43.8	21.9	(21.9)	(7.75)
8	---	---	37.2	18.6	(18.6)	(5.67)
9	--	---	31.7	15.9	(15.9)	(4.18)
10	---	----	26.9	13.5	(13.5)	(3.06)
						546.88

Option II Ind-
Lease – In option

(Rs.'000)

Year	Lease Rental	Tax Shield 50% of 2	Net Cash Flow (2) – (3)	Discounted Cash Flow @ 16%
1	330	165	165	142.25
2	330	165	165	122.63
3	330	165	165	105.72
4	330	165	165	91.12
5	330	165	165	78.56
				540.28

Option: Option II i.e. lease-in the asset is more profitable.

Note

- Depreciation at 15% on Rs.10 lakhs = Rs.1,50,000/- in the first year and calculated WDV from second year onwards.
- Cost of equipment 10,00,000
 Less: Depn. During 5 years 5,56,300
 WDV at end of 5 years 4,43,700
 Less: Realisable value 1,00,000
 WDV 3,43,700
 Depn. during 6th year at 15% 51,600
- Depreciation is continued to be charged as we have to restrict working upto 10th year in case of Option I.

11. To,

The Director (Finance), ABC Co. Ltd.

Sir,

Subject: Report showing evaluation of 2 options for acquisition of an asset valued at Rs.1,00,000

Working Notes

1. Calculation of Depreciation

Year 1	Original Cost	1,00,000	Year 6	W.D.V.	44,370
	Dep. 15%	15,000		Dep. 15%	6,655
	W.D.V.	85,000		W.D.V.	37,715
Year 2	Dep. 15%	12,750	Year 7	Dep. 15%	5,657
	W.D.V.	72,250		W.D.V.	32,058
Year 3	Dep. 15%	10,838	Year 8	Dep. 15%	4,808
	W.D.V.	61,412		W.D.V.	27,250
Year 4	Dep. 15%	9,212	Year 9	Dep. 15%	4,087
	W.D.V.	52,200		W.D.V.	23,163
Year 5	Dep. Of 15%	7,830	Year 10	Dep. 15%	3,474
		44,370			19,689

2. Calculation of Interest at 15%

Year 1	1,00,000	X	15%	=	15,000	Repayment at year end 20,000
Year 2	80,000	X	15%	=	12,000	Repayment at year end 20,000
Year 3	60,000	X	15%	=	9,000	Repayment at year end 20,000
Year 4	40,000	X	15%	=	6,000	Repayment at year end 20,000
Year 5	20,000	x	15%	=	3,000	Repayment at year end 20,000

Solution

Option (A) to borrow fund

1	2	3	4	5	6	7
Year	Principal Repayment	Interest @ 15%	Depreciation @ 15% WDV	Tax Shield 50% of Col (3) & (4)	Net cash outflow Col (2) + (3) - (5)	Discounted cash outflow @ 16%
1	20,000	15,000	15,000	15,000	20,000	17,241
2	20,000	12,000	12,750	12,375	19,625	14,584
3	20,000	9,000	10,838	9,919	19,081	12,224
4	20,000	6,000	9,212	7,606	18,394	10,159
5	20,000	3,000	7,830	5,415	17,585	8,372
6			6,655	3,327	(3,327)	(1,365)
7			5,657	2,829	(2,829)	(1,000)
8			4,808	2,404	(2,404)	(732)
9			4,087	2,043	(2,043)	(537)
10			3,474	1,737	(1,737)	(393)
	1,00,000					58,553

Option (B) – Leasing Option

Lease Rentals at Rs.320 per Rs.1,000 i.e. Rs.32,000 for Rs.1,00,000

1	2	3	4	5
Year	Lease Rental	Tax Shield 50% of Col (2)	Net cash outflow Col (2) – (3)	Discounted cash outflow @ 16%
1	32,000	16,000	16,000 × 0.86207 =	13,793
2	32,000	16,000	16,000 × 0.74316 =	11,890
3	32,000	16,000	16,000 × 0.64066 =	10,250
4	32,000	16,000	16,000 × 0.55229 =	8,836
5	32,000	16,000	16,000 × 0.47611 =	7,618
	1,60,000			52,387

Advice: Leasing option is more preferable to the Company as its discounted cash outflow is lower than that of borrowing option.

Dated: 12-6-2006

Yours faithfully,

Sd/-
Chartered Accountant

12. Cost of Acquisition of R. Ltd. to A. Ltd

	Rs.
13% Debentures	3,30,000
12% convertible preference shares	1,00,000
Equity share capital (1,50,000 x Rs.15/-)	22,50,000
Dissolution expenses of R. Ltd	30,000
Payment of current liabilities	1,90,000
	<u>29,00,000</u>
Less: Realised proceeds from sale of assets	Rs.
Investments	1,25,000
Debtors	3,50,000
Inventories	4,25,000
	<u>(-)9,00,000</u>
Less: Bank balance of R Ltd.	<u>(-)1,00,000</u>
	<u>19,00,000</u>

Statement of NPV of merger decision

Year	CFAT (Cash flow After Tax)	P.V. factor at 15%	Present value (Rs.)
1 to 6	700000 each year	3.784 (Note 1)	26,48,800
End of 6 th year	300000 (Fixed assets would fetch Rs.3,00,000 at the end of 6 th year)	0.432	1,29,600
	Total		27,78,400
	Less: Cost of acquisition		19,00,000
	NPV		8,78,400

Comment: NPV is positive by Rs.8,78,400 and hence the merger is beneficial to A Ltd.

Note: 1. The total of $0.870 + 0.756 + 0.658 + 0.572 + 0.496 + 0.432 = 3.784$

13. Solution: The Bond's value can be find out by applying the following equation:

$$Bo (DDB) = \frac{FV}{1+r)^n}$$

Where, Bo (DDB) = Value of DDB

Fv = Face Value of DDB payable at maturity.

r = The required rate of return.

n = Life the DDB

By substituting the figures in the equation, we get

$$Bo (DDB) = \frac{Rs. 25,000}{(1+16\%)^{10}}$$

$$= Rs.25,000 \times (PVF 16\%, 10 \text{ years})$$

$$= Rs.25,000 \times .227$$

$$= Rs.5,675$$

Hence, the value of the bond is Rs.5,675.

14. The value of the share can be ascertained on the basis of earnings of the firm and the price-earning multiple as follows:

Value = EPS × P/E Ratio.

The P/E Ratio is given and the EPS may be ascertained as follows:

	<i>Amount (Rs.)</i>
Operating Profit i.e. EBIT	25,00,000
Less: Interest on 15% Secured Loans	3,75,000
Interest on 12.5% Unsecured Loans	1,25,000
Profit before Tax (PBT)	20,00,000
Tax @ 50%	10,00,000
Profit after Tax (PAT)	10,00,000
Number of Equity Shares (Rs.50,00,000/20)	2,50,000
Therefore, EPS (Rs.10,00,000/2,50,000)	4.00
P/E Ratio (given)	12.5

Therefore,

Value = EPS × P/E Ratio.

= 4 × 12.5

= Rs.50.

15. The dividends from the company are expected to grow at 20% p.a. for first 15 years and at 7% p.a. thereafter forever. Therefore, the value of the equity share is to be ascertained in two stages as follows:

Stage 1: Calculation of present value of dividends for 15 years:

<i>Year</i>	<i>Dividend (Rs.) (g = 20%)</i>	<i>PVF at 9%</i>	<i>Present Value (Rs.)</i>
1	1.200	.917	1,100
2	1.440	.842	1,212
3	1.728	.722	1,334
4	2.074	.708	1,334
5	2.488	.650	1,468
6	2.986	.596	1,780
7	3.583	.547	1,960
8	4.300	.502	2,159
9	5.160	.460	2,376
10	6.192	.442	2,613
11	7.430	.388	2,883
12	8.916	.356	3,174
13	10.696	.326	3,488
14	12.839	.299	3,839
15	15.407	.275	4,237
Total	<u>86.442</u>		<u>34,955</u>

So, the total dividend of Rs.86.44 are expected from the company during next 15 years, whose present value @ 9% is Rs.34.96.

Stage 2: The value of the equity share at the end of 15th year depends upon the dividend for the 16th year (D_{16}), k_e and the growth rate, g , as follows:

$$D_{16} = D_{15} (1 + g) \text{ or } 15.407(1.07) = \text{Rs. } 16.49$$

$$\begin{aligned} \text{The share price is } P_{15} &= \frac{D_{16}}{K_e - g} \\ &= \frac{\text{Rs. } 16.49}{.09 - .07} \\ &= \text{Rs. } 824.50 \end{aligned}$$

This amount of Rs.824.50 is realizable after 15 years. Therefore, the present value of this amount at 9% is Rs.226.74 (i.e. Rs.824.50 $\times$.275).

Now, the value of the share is the sum of the (i) present value of future dividend and (ii) present value of expected price at the end of year 15 i.e.

$$\begin{aligned} \text{Value} &= \text{Rs. } 34.96 + \text{Rs. } 226.74 \\ &= \text{Rs. } 261.70 \end{aligned}$$

16. (i) Share Exchange Ratio based on assets value:

	<i>A Ltd.</i>	<i>B Ltd.</i>
Total assets	Rs.1,73,000	Rs.61,000
-Liabilities (debentures)	15,000	5,000
-Preference share capital	20,000	—
Net worth	1,38,000	56,000
Number of equity shares	10,000	5,000
Worth per share	Rs.13.80	Rs.11.20

$$\text{Share Exchange ratio} = \frac{\text{Worth per share of target firm}}{\text{Worth per share of acquiring firm}}$$

$$\text{Share Exchange ratio} = \frac{\text{Rs. } 11.20}{\text{Rs. } 13.80} = .812$$

$$\text{Number of shares to be issued} = 5,000 \times .812 = 4,060$$

(ii) Share Exchange Ratio based on EPS:

	<i>A Ltd.</i>	<i>B Ltd.</i>
Earnings	Rs.24,000	Rs.15,000
Number of shares	10,000	5,000
EPS	Rs.2.40	Rs.3.00

$$\text{Share Exchange ratio} = \frac{\text{EPS of target firm}}{\text{EPS of acquiring firm}}$$

$$\text{Share Exchange ratio} = \frac{\text{Rs. } 3.00}{\text{Rs. } 2.40} = 1.25$$

$$\text{Number of shares to be issued} = 5,000 \times 1.25 = 6,250$$

(iii) Share Exchange Ratio based on Market Price:

$$\text{Share Exchange ratio} = \frac{\text{Market price of target firm}}{\text{Market price of acquiring firm}}$$

$$\text{Share Exchange ratio} = \frac{\text{Rs.27}}{\text{Rs.24}} = 1.125$$

$$\text{Number of shares to be issued} = 5,000 \times 1.125 = 5,625$$

From the point of view of A Ltd., the Share Exchange ratio based on net asset value may be preferred because in this case the number of shares to be issued is least i.e., 4,060 only.

17. As the Share Exchange ratio is given as 3:4, Company X would issue 3,750 (i.e., $5,000 \times 3/4$) shares to the shareholders of Company Y.

(i) Position of EPS of the two companies:

	<i>Before take over</i>		<i>After take over</i>
	<i>Company X</i>	<i>Company Y</i>	<i>Company (X+Y)</i>
No. of shares	10,000	5,000	13,750
Total earnings	Rs.1,00,000	Rs. 50,000	Rs.1,50,000
EPS	Rs.10	Rs.10	Rs.10.91
Share price (MPS)	Rs.20	Rs.15	
Gain or loss due to amalgamation (Company Y):			
Present dividend of shareholders of Y ($5,000 \times \text{Rs.10}$)			Rs.50,000.00
New dividend from X ($3,750 \times \text{Rs.10.91}$)			Rs.40,912.50
Loss			9,087.50
Gain or loss due to amalgamation (Company X):			
Present dividend of shareholders of X ($10,000 \times \text{Rs.10}$)			Rs.1,00,000
New dividend from X ($10,000 \times \text{Rs.10.91}$)			Rs.1,09,100
Gain			9,100

Therefore, as a result of amalgamation, the annual dividend/earnings of the shareholders of Company Y would be reduced by Rs.9,087.50, whereas earnings of the shareholders of Company X would increase by Rs.9,100.

18. Calculation of net amount received by the Company on issue of Commercial Paper:

Let us assume that the company has issued Commercial Paper worth Rs.10 crores

$$\begin{aligned} \text{No. of days} &= 90 \\ \text{Interest rate} &= 11.25\% \text{ p.a.} \\ \text{Interest for 90 days} &= 11.25\% \text{ p.a.} \times 90 \text{ days}/365 \text{ days} = 2.774\% \\ &= 10 \text{ crores} \times \frac{2.774}{100 + 2.774} = \text{Rs.26,99,126} \\ &\text{say 0.27 crores} \end{aligned}$$

$$\text{Net amount received at the time of issue} = 10 \text{ crores} - 0.27 \text{ crores} = \text{Rs.9.73 crores}$$

- 19.

$$\begin{aligned} \text{Amount required for making payment on 16th April, 2003} &= \text{Rs.20,00,000} \\ \text{Investment in Certificates of Deposit (CDs) on 15th January, 2003} &= \\ \text{Rate of interest} &= 8\% \text{ p.a.} \\ \text{No. of days to maturity} &= 91 \text{ days} \\ \text{Interest on Re.1 for 91 days (Re.0.08} \times 91/365) &= 0.0199452 \\ \text{Amount to be received for Re.1} &= 1.0199452 \\ \text{Invested now, value after 91 days} &= (\text{Re.1.00} + \text{Rs.0.0199452}) \end{aligned}$$

Calculation of amount now to be invested to get Rs.20 Lakhs after 91 days:

$$= \frac{\text{Rs.20,00,000}}{\text{Rs.1.0199452}} = \text{Rs.19,60,890 say Rs.19,61,000}$$

20. Based on the said information and data, the computation is made hereunder. Work sheet of computation made by merchant banker is given in the following table:

Computation regarding Book Building

<i>Variables</i> (Rs.) (x)	<i>Weights</i> (Rs. crores) (w)	<i>Product of variables</i> & <i>Weights</i> (Rs.crores) (wx)
97	100	9,700
98	500	49,000
101	100	10,100
100	200	20,000
99	100	9,900
	$\Sigma W = 1,000$	$\Sigma WX = 98,700$

Weighted Average =

$$\frac{\Sigma WX}{\Sigma W} = \frac{98,700}{1,000} = \text{Rs.98.70}$$

Rs.98.70 is the price arrived by computations under weighted average formula. This price is derived and recorded by the Issue Manager (i.e., Book-runner). Thus, the issue price is determined and finalized. The Book runner builds up his book at least to the size of the issue and syndicate members. On the strength of their commitment, the book runner enters into a procurement or underwriting agreement with the issuer. The syndicate members agree to the securities at an issue price and specify the payment date.

21. (a) Book Building Process seeks to determine the intrinsic value of the instrument being offered by the issuer to investors. It enhances the credibility of issuing company in the eyes of public. The entire exercise is done on a wholesale basis. It offers numerous benefits like:
- Price determination is more realistic.
 - Firm commitment by investors.
 - Attracts high network investors.
 - Highest market Price
 - Feedback from potential investors as to how they view the issue.
 - Access to capital more quick.
 - No uncertainties relating to the fate of the issue involved.
 - Advertising and brokerage commissions saved.
 - Issuers can choose investors by quality.
 - Investors have a voice in the pricing of issues. They have a greater certainty of being allotted what they demand. Investors need not lock up huge amounts of capital with the issuer as they pay at the end of the process.
 - The issue price is market-determined. As it is a distant possibility that the market price of the shares would fall lower than the issue price. Hence, the investor is less likely to suffer from erosion of his investment on listing.

- (xii) Optimal demand based pricing is possible.
- (xiii) Efficient capital raising with improved issue procedures, leading to a reduction in (a) issue costs, (b) paper work and (c) lead times.
- (xiv) Flexibility to increase/decrease price and/or size of offering the issues is possible.
- (xv) Transparency of allocations is made.
- (xvi) Upgraded information flow of issues, lead managers, syndicate members and investors is made possible.
- (xvii) Book-building process inspires investors confidence leading to a larger investor universe.
- (xviii) Book-building process creates a liquid and buoyant share market.
- (xix) As the syndicate members will get firm allocation, the investors to that extent are assured of allotment.
- (xx) Immediate allotment and listing of placement portion of securities.

(b) SEBI Guidelines for Book Building*

SEBI (Disclosure and Investor Protection) Guidelines, 2000 contain guidelines for book building under Chapter XI which contain guidelines for 75% book building process, 100% book building process, disclosure requirements, allocation/allotment procedure and maintenance of books and records. Companies are bound to follow the following SEBI guidelines for book building offers.

75% Book-Building Process

In an issue of securities to the public through a prospectus the option for 75% book building shall be available to the issuer company subject to the following:

- The option of book-building shall be available to all body corporates which are otherwise eligible to make an issue of capital to the public.
- The book-building facility shall be available as an alternative to, and to the extent of the percentage of the issue which can be reserved for firm allotment, as per these Guidelines.
- The issuer company shall have an option of either reserving the securities for firm allotment or issuing the securities through book-building process.
- The issue of securities through book-building process shall be separately identified/indicated as 'placement portion category', in the prospectus.
- The securities available to the public shall be separately identified as "net offer to the public".
- The requirement of minimum 25% of the securities to be offered to the public shall also be applicable.
- In case the book-building option is availed of, underwriting shall be mandatory to the extent of the net offer to the public.
- The draft prospectus containing all the information except the information regarding the price at which the securities are offered shall be filed with SEBI.
- One of the lead Merchant Bankers to the issue shall be nominated by the issuer company as a Book Runner and his name shall be mentioned in the prospectus.
- The copy of the draft prospectus filed with SEBI may be circulated by the Book Runner to the Institutional buyers who are eligible for firm allotment and to the Intermediaries eligible to act as Underwriters inviting offers for subscribing to the securities.
- The draft prospectus to be circulated shall indicate the price band within which the securities are being offered for subscription.

Student may log on to:

<http://www.SEBI.gov.in>

22. Calculation of BETA Co-efficient

$$\beta_1 = \frac{\sigma_1}{\sigma_m} \times r_m = \frac{0.02}{0.022} \times 0.8 = 0.73$$

Calculation of Required Rate of Return on Security

$$\begin{aligned} E(R_p) &= R_f + \beta_p (R_m - R_f) \\ &= 5.2 + 0.73 (9.8 - 5.2) = 5.2 + 3.36 = 8.56\% \end{aligned}$$

23. (i) Calculation of expected rate of return of the security

$$E(R_p) = R_f + \beta_i (R_m - R_f)$$

Where,

$E(R_p)$ = Expected rate of return on the security.

R_f = Risk free rate of return i.e., 8%

R_m = Expected rate of return on market portfolio i.e. 16%.

β_i = Market sensitivity index or Beta factor of investment i.e., 0.7

$$E(R_p) = 0.80 + 0.7 (0.16 - 0.08) = 0.08 + 0.7 (0.08) = 0.08 + 0.056 = 0.136 \text{ or } 13.6\%$$

(ii) If a security has an expected return of 20% what must be its beta?

$$\begin{aligned} E(R_p) &= R_f + \beta_i (R_m - R_f) \\ 0.20 &= 0.08 + \beta_i (0.16 - 0.08) \\ 0.20 &= 0.08 + \beta_i 0.08 \\ \beta_i 0.08 &= 0.20 - 0.08 \\ \beta_i 0.08 &= 0.12 \\ \beta_i &= 0.12/0.08 = 1.5 \end{aligned}$$

24. Calculation of expected rate of return of the security

$$E(R_p) = R_f + \beta (R_m - R_f)$$

Where,

$$R_f = 6\% \quad R_m = 15\% \quad \beta = 0.5$$

$$E(R_p) = 6 + 0.5 (15 - 6) = 6 + 4.5 = 10.5\%$$

Calculation of Beta of another security, whose expected rate of return is 18%

$$E(R) = R_f + \beta (R_m - R_f)$$

$$18 = 6 + \beta_i (15 - 6)$$

$$\beta_i = 1.33$$

25. Working Notes:

Calculation of Beta factor (market sensitivity index)

$$\beta = \frac{\sigma_i}{\sigma_m} \times r_{im}$$

Where

$$\beta_i = \text{Beta factor of investment.}$$

$$\begin{aligned}
 r_m &= \text{Co-relation co-efficient of port-folio with market.} \\
 \sigma_i &= \text{Standard deviation of investment.} \\
 \sigma_m &= \text{Market Standard deviation.} \\
 \beta_i &= \frac{2.8\%}{2.3\%} \times 0.5 = 0.61
 \end{aligned}$$

Calculation of Expected Rate of Return of Portfolio

$$E(R) = R_f + \beta_i (R_m - R_f)$$

Where,

$$\begin{aligned}
 E(R_i) &= \text{Expected rate of return on investment.} \\
 R_f &= \text{Risk free rate of return i.e. 8\%.} \\
 R_m &= \text{Expected return on market portfolio i.e., 18\%} \\
 \beta_i &= \text{Market sensitivity index of investment (Beta factor of investment) i.e., 0.61} \\
 E(R_i) &= 8\% + 0.61 (18\% - 8\%) \\
 &= 8\% + 0.61 (10\%) = 8\% + 6.1 = 14.1\%
 \end{aligned}$$

26. (i) Market Sensitive Index or Portfolio Beta

$$\beta_i = \frac{\sigma_i}{\sigma_m} \times r_{im}$$

Where

$$\begin{aligned}
 \beta_i &= \text{Market sensitivity index.} \\
 \sigma_i &= \text{Standard deviation of asset i.e., 2.5\%} \\
 \sigma_m &= \text{Market Standard deviation i.e., 2.0\%} \\
 r_{im} &= \text{Correlation coefficient of portfolio with market i.e., 0.8} \\
 \beta_i &= \frac{0.025}{0.20} \times 0.8 = 1.25 \times 0.8 = 1
 \end{aligned}$$

Equation for Calculating the Expected Rate of Return on the Portfolio:

$$E(R_p) = R_f + \beta_i (R_m - R_f)$$

$$\begin{aligned}
 \text{Where, } E(R_p) &= \text{Expected return of portfolio.} \\
 \beta_i &= \text{Portfolio Beta i.e., market sensitive Index i.e. 1.} \\
 R_m &= \text{Expected return on market portfolio i.e. 15\%.} \\
 R_f &= \text{Risk-free rate of return i.e. 13\%.}
 \end{aligned}$$

By substituting the figures in the above equation, we may get as under:

$$E(R_i) = 13\% + 1(15\% - 13\%) = 15\%$$

$$(ii) \quad E(R_p) = 10\% + 0.5(15\% - 10\%) = 12.5\%$$

27. (i) Calculation of market's Return-Risk Tradeoff

$$= \frac{R_m - R_f}{\sigma}$$

Where,

$$\begin{aligned}
 R_m &= \text{Market rate of return i.e., 0.095} \\
 R_f &= \text{Risk free return i.e., 0.025} \\
 \sigma &= \text{Standard deviation i.e., 0.035}
 \end{aligned}$$

$$= \frac{0.095 - 0.025}{0.035} = 2$$

(ii) Calculation of Security Beta

$$\beta_i = \frac{\sigma_i}{\sigma_m} \times r_{im}$$

Where

$$\begin{aligned} \beta_i &= \text{Beta factor of investment} \\ r_{im} &= \text{Correlation Co-efficient of portfolio with market i.e., 0.75} \\ \sigma_i &= \text{Standard deviation of investment i.e., 0.07} \\ \sigma_m &= \text{Market standard deviation i.e. 0.035} \\ \beta_i &= \frac{0.07}{0.035} \times 0.75 = 2 \times 0.75 = 1.5 \end{aligned}$$

(iii) Calculation of expected rate of return on the security

$$E(R_i) = R_f + \beta_i (R_m - R_f)$$

Where,

$$\begin{aligned} E(R_i) &= \text{Expected rate of return on investment} \\ R_f &= \text{Risk free rate of return i.e., 0.08} \\ R_m &= \text{Expected return on market portfolio} \\ \beta_i &= \text{Market sensitive index (Beta factor) of investment i.e., 1.5} \\ E(R_i) &= 0.08 + 1.5 (0.06) = 0.08 + 0.09 = 0.17 \text{ or } 17\% \end{aligned}$$

28. Calculation of current value of John's Portfolio inherited from his uncle *Current value (Rs.)*

Bond A				
(i)	Interest p.a. (10,000×9/100) = Rs.900 compounded @ 12% p.a. for 3 years	(900 × 2.4020	2,162	9,282
(ii)	Current value of Bonds amount received on maturity p.v. @ 12% on 3 rd year	(10,000 × 0.712)	7,120	
Bond B				
(i)	Interest p.a. 10,000 × 10/100 = Rs.1,000 compounded @12% p.a. for 5 years	(1,000 × 3.605)	3,605	9,275
(ii)	Current value of Bonds received on maturity p.v. 12% on 5th year.	(10,000×0.567)	5,670	
Preference Shares C				8,462
$\left[\frac{\text{Rs.100} \times 100 \text{Nos.} \times 11\%}{13\%} \right]$		$= \frac{1100}{0.13}$		
Preference Shares D				9,231
$\left[\frac{\text{Rs.100} \times 100 \text{Nos.} \times 12\%}{13\%} \right]$		$= \frac{1200}{0.13}$		
Current Value of John's Portfolio				36,250

29. Calculation of average rate of return on portfolio during 2002-2006

Year	Stock A's Return %	Stock B's Return %
2002	-12.24	-5.00
2003	23.67	19.55
2004	35.45	44.09
2005	5.82	1.20
2006	28.30	21.16
Total	81.00	81.00
	81/5 years	81/5 years
Average rate of return	= 16.20%	= 16.20%

Calculation of realized rate of return on portfolio during 2002-2006

	Stock A			Stock B			Total
Year	Proportion	Return	Net Return	Proportion	Return	Net Return	Net return
2002	0.50	-12.24	-6.12	0.50	-5.00	-2.50	-8.62
2003	0.50	23.67	11.83	0.50	19.55	9.77	21.60
2004	0.50	35.45	17.72	0.50	44.09	22.04	39.76
2005	0.50	5.82	2.91	0.50	1.20	0.60	3.51
2006	0.50	28.30	14.15	0.50	21.16	10.58	24.73
			40.49			40.49	80.98

$$\text{Average Rate of return} = \frac{\text{Rs. } 80.98}{5} = 16.20\%$$

30. Beta of Company's existing portfolio of assets

$$\beta_A = \left[\beta_E \times \frac{E}{D+E} \right] + \left[\beta_D \times \frac{D}{D+E} \right]$$

Where

β_A = Beta of company assets

β_E = Beta of Equity i.e. 1.5

β_D = Beta of Debt (since company's debt capital is risk less, its Beta is zero)

E = Value of Equity i.e., Rs.60,00,000

D = Value of Debt i.e. Rs.40,00,000

D+E= Total value of the company

= Value of Debt + Value of Equity

= 40,00,000 + 60,00,000 = Rs.1,00,00,000

Risk premium ($R_m - R_f$) = 10%

Risk free return (R_f) = 8%

$$\begin{aligned} \beta_A &= \left[1.5 \times \frac{\text{Rs. } 60 \text{ lakhs}}{\text{Rs. } 100 \text{ lakhs}} \right] + \left[0 \times \frac{\text{Rs. } 40 \text{ lakhs}}{\text{Rs. } 100 \text{ lakhs}} \right] \\ &= 0.9 + 0 = 0.9 \end{aligned}$$

2. Estimation of company's Cost of Capital

$$= \text{Risk free return} + (b_A \times \text{Risk premium})$$

$$= 8 + (0.9 \times 10) = 8 + 9 = 17\%$$

- In case of expansion plan, 17% can be used as discount factor.
- In case of diversification plan, a different discount factor would be used depending on its risk profile.

31. Alternative 1: Cost of Factoring Book Debts		(Rs.)
Fees payable for factoring	$(3,60,000 \times 1/100)$	3,600
Commission	$(4,00,000 \times 4/100)$	16,000
		19,600
Less: Saving per month to the Company	$(21,600/12 \text{ months})$	1,800
Saving of Bad Debts	$(4,00,000 \times 1/100)$	4,000
Net Cost of Factoring		5,800
		13,800

Notes:

	(Rs. in lakhs)
Total Sales p.a.	60
Less: Cash Sales p.a. (20%)	12
Credit Sales p.a. (80%)	48
Credit Sales p.m. (48/12)	4
Amount eligible for Factoring/advance by the bank (90% of credit sales p.m.)	3.6

Alternative II: Cost of Bank advance against Book Debts		(Rs.)
Interest Charges	$(3,60,000 \times 18/100 \times 1/12)$	5,400
Processing fee	(@ 2% of 4,00,000)	8,000
Bad debts loss	(unavoidable)	4,000
		17,400

Advice: Since, the net cost of factoring is less than the cost of Bank advance, the company is advised to adopt factoring.

32. (i) Computation of Advance Payable to ABC Ltd. (Rs. lakhs)

Value of factored receivable	(14/0.8)	17.50
Maximum Permissible advance		14.00
Less: Commission @ 1.5 per cent	(17.50×0.015)	0.26
		13.74
Less: Discount charge	$(14 \times 0.2 \times 90/360)$	0.70
Funds made available to ABC Ltd.		13.04

(ii) Effective Cost

Discount charge expressed as a percentage of funds made available to ABC Ltd.

$$= 0.7/13.04$$

$$= 5.37\% \text{ per quarter}$$

The annualized rate of interest

$$= [(1.0537)^4 - 1] = 23.27$$

Hence cost of funds

$$= 23.27\%$$

(iii) Effective cost when interest in arrears and commission in advance; (Rs. in lakhs)

Maximum permissible advance		14.00
Less: Commission payable up-front	(17.50 × 0.015)	0.26
Funds made available to ABC Ltd.		13.74
Interest charges collected in arrears	(i.e., 14 × 0.20 × 90/360)	0.70

Interest charges expressed as a percentage of funds made available

$$70/13.74 = 5.095 \text{ per quarter}$$

$$\text{Annualised interest cost} = [(1.05095)^4 - 1] \times 100 = 21.99\%$$

33. Calculation of amount to be lent by bank on Pledge of Receivables

Jackson Company's credit policy 2/10 net 30 with another 10 days as allowance

Account No.	Analysis
74	Not overdue currently and in past.
91	Overdue currently and in past.
107	Not overdue currently and in past.
108	Not overdue currently and in past.
114	Overdue currently and in past.
116	Not overdue currently and in past.
123	Not overdue currently but overdue in the past.

From the above analysis, we can observe that Account Nos. 91, 114 and 123 are not eligible for bank finance. Account Nos. 74, 107, 108 and 116 are only eligible for bank finance on pledge of receivables.

Calculation of amount which can be lent by Bank to Jackson company on pledge of its receivable

Particulars	Account Nos.			
	74	107	108	116
Invoice Amount	25,000	11,500	2,300	29,000
Less: 10% allowance for Cash discount and returns	2,500	1,150	230	2,900
	22,500	10,350	2,070	26,100
Eligible Bank finance (80% of the above)	18,000	8,280	1,656	20,880

Analysis: Therefore, the Bank can finance upto Rs.48,816 to Jackson company on pledge of its receivables to the Bank.

34. Total Sales = Rs. 3,20,00,000

Average collection period = 90 days

Receivables = $3,20,00,000 \times 90/360$ = Rs. 80,00,000

- (i) If Factor service is not taken
- Bad debt loss = 1.5% of sales
 - Cost of administration of Receivables = Rs.5,00,000
- (ii) If factor service is taken:
- Factor commission payable = 2%
 - Interest on advance payment of receivable = 18% p.a.
 - Factor reserve = 10%

(Rs.)

Receivables		80,00,000
Less: 10% Advance	8,00,000	
Factor commission (80,00,000 × 2/100)	1,60,000	9,60,000
Amount available for advance		70,40,000
Interest on advance (70,40,000 × 18/100 × 90/360)		3,16,800
Net amount paid to the firm		67,23,200

Evaluation of cost of factoring to the firm

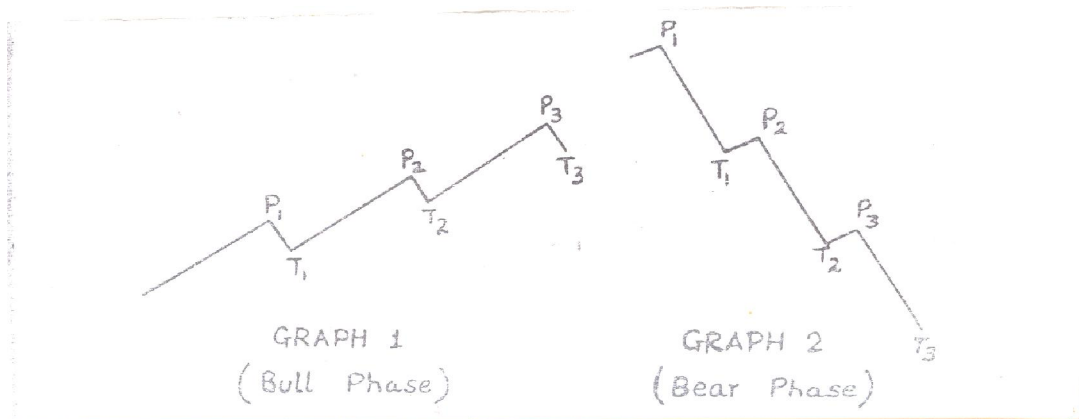
(i)	Savings			
	1. Cost of administration of receivables			5,00,000
	2. Cost of Bad debts	(3,20,00,000 × 1.5/100)		4,80,000
			(i)	9,80,000
(ii)	Costs			
	1. Factoring commission	(80,00,000 × 2/100 × 360/90)		6,40,000
	2. Interest charges	(3,16,800 × 360/90)		12,67,200
			(ii)	19,07,200
	Net cost to the Firm		(ii)–(i)	9,27,200

$$\text{Effective rate of interest to the firm} = \frac{9,27,200}{67,23,200} \times 100 = 13.79\%$$

35. Dow-Jones theory deals with the behaviour of share prices in the market. The theory derives its name from Charles H. Dow, who established Dow-Jones & Co. and was the first Editor of the Wall Street Journal. According to Dow-Jones theory, the movements in the share prices on the share market can be classified into the following three major categories:-

- (a) The Primary Movement.
- (b) The Secondary Movements.
- (c) The Daily Fluctuations.

The Primary Movements reflect the trend of the share market and may continue from one to three years or even more. If one observes the long-range behaviour of share prices in the market, it may be seen that for sometime a definite consistent phase i.e., rise or fall in prices is observed. The former is known as bull phase and latter as bear phase. These phases are depicted in the following graphs:



The basic characteristic feature of primary movements is that they indicate basic trends in the market. However, in the short run some reverse trend may also be observed but in the long run they will end up either with a rise or fall in prices.

The bull phase is one in which the succeeding highs exceed the preceding highs, and the successive lows are higher than the preceding lows. The reverse is the case in bear phase. Correct determination of such movements is the major objective of Dow-Jones theorists.

The secondary movements refer to the intervening movements in prices which last for a short period say three weeks to several months but, running counter to the primary trend. The graph depicting the bull phase would indicate that after each fall there is rise in prices. These reverse movements in prices are shorter in duration and known as secondary movements. The secondary movements are supposed generally to retrace from one-third to two-thirds of the primary price change in the average since the proceedings secondary movement terminated. It is apparent that the problem of determining from day or week whether a movement apparently under way is secondary one or a reversal of a major trend presents a difficult task.

The daily movements refer to every day's irregular fluctuations in share prices in either direction. These fluctuations are the result of activities of speculators. An investor really is not interested in such fluctuations and therefore, he should keep himself away from them.

The Dow-Jones theory was concerned with the movement of the market as a whole, and not individual securities. It was very popular during the 1920s and 1930s. It was believed that active stocks tend to move in consonance with the averages, but individual issues may reflect conditions peculiar to them which will cause deviations from the pattern of the averages.

The understanding of Dow-Jones theory proves useful for an investor. The theory may help him in choosing time for investment in shares. According to this theory, investment should be made in shares when their prices have reached the lowest level and sell them at a time when they reached the highest peak. Alternatively, the investor may time his decision in such a manner that he buys shares when the prices are on the rise and sells when; they are on the fall. In practice, it may be difficult to identify these points or trends. Dow-Jones theory identifies the turn in the market prices. By seeing the successive peaks and troughs, the investor can know when the bull trend or bear trend has started and accordingly he can take decisions about the sale or purchase of shares.

However, the Dow-Jones theory in its pure form retains few followers today because it has generally failed to be a leading indicator of future stock prices and it has not enabled the investors to achieve superior investment performance. The theory of Dow-Jones has been improved upon by some of his successors. The development of random unit walk theory is one such improvement.

36. (i) Packing Credit: Packing credit means the short term finances made available by the commercial banks to finance the needs of exporters. The requirements of exporters can be

divided into two categories – funds required to finance preshipment requirements, and funds required to finance post-shipment requirements. For all practical purposes, preshipment finance is referred to as packing credit. Packing credit covers the requirement of funds for purchase of raw material, manufacturing or processing of the raw materials, packing of goods, warehousing and their transportation etc. Thus though the credit extends much beyond the stage of packing, it is known as packing credit.

The packing credit in India is given by commercial banks under the various export promotion schemes of the Reserve Bank of India. It is essentially available to the exporter at the point when he receives an export order from the foreign buyer. After the execution of the order/shipment of the goods, the exporter can repay the packing credit advance out of the proceeds of the bill drawn on the foreign buyer. The Reserve Bank of India gives several concessions/benefits to the commercial banks who extend export credit to the exporters. These include refinance of the advances, interest subsidy to compensate the banks for making export credit at concessional interest rates, and extending export credit guarantee. For a bank to be eligible for the above concessions/benefits, commercial banks should follow the rules made by Reserve Bank of India in this regard. The following are the salient features of the Reserve Bank of India's packing credit scheme.

- (a) The exporter has to deliver either a foreign buyer's letter of credit issued by a reputed bank or a confirmed order for the export of the goods.
- (b) All packing credit advances will be repaid out of the proceeds of the bill drawn in respect of the goods shipped or remittances received.
- (c) Generally packing credit will be available for a period of 90 days; however, in case of specified items, like engineering goods, credit period may extend to 180 days.
- (d) All packing credit advances in respect of incentives are to be re-paid as soon as these are realized.
- (e) Interest rates may vary according to the period of credit and the guidelines issued by the Reserve Bank of India in this regard.

Packing credit advances can be in the form of loan or cash credit facility. The Export Credit and Guarantee Corporation guarantees to the extent of 75% of the loss in respect of packing credit advances made by banks.

As stated above Packing credit is an advance made available by banks to an exporter. Any exporter, having at hand a firm export order placed with him by his foreign buyer or an irrevocable letter of credit opened in his favour, can approach a bank for availing of packing credit. An advance so taken by an exporter is required to be liquidated within 180 days from the date of its commencement by negotiation of export bills or receipt of export proceeds in an approved manner. Thus, Packing Credit is essentially a short-term advance.

Normally, banks insist upon their customers to lodge the irrevocable letters of credit opened in favour of the customer by the overseas buyers. The letter of credit and firm sale contracts not only serve as evidence of a definite arrangement for realization of the export proceeds but also indicate the amount of finance required by the exporter. Packing Credit, in the case of customers of long standing may also be granted against firm contracts entered into by them with overseas buyers. Packing credit may be of the following types:

- (a) *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 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.
- (b) *Packing credit against hypothecation of goods*: Export finance is made available on certain terms and conditions where the exporter has pledgeable interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilizing

the advance, the exporter is required to submit, alongwith the firm export order or letter of credit, relative stock statements and thereafter continue submitting them every fortnight and or whenever there is any movement in stocks.

- (c) *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 are kept under its lock and key.
- (ii) **Hypothecation and Pledge:** Hypothecation is a charge against property for an amount of debt where neither ownership nor possession is passed to the creditor. Thus hypothecation is a legal transaction, whereby goods or other movable assets are made available as security for a debt, without transferring either the property or possession thereof to the lender. It is a useful means of raising loan on the security of movable property which cannot be pledged. It is sometimes granted side by side with pledge. For example, in a manufacturing unit, the stocks of raw material and finished goods can be conveniently pledged and, therefore, for such stocks which can be put under the lock and key of the bank, only pledge limit is sanctioned. But for the goods in process which have to be in the open and the bank cannot take possession, only a hypothecation limit can be considered. The margin in such limit is higher because of the difficulties in verification of the valuation of the stocks. Being only an equitable charge on movable property without possession, hypothecation facility is granted only to first class customers with higher integrity. Normally, banks do not grant hypothecation facilities to new customers.

On the other hand, pledge is bailment of goods (i.e., delivery of goods by one person to another) as security for payment of a debt or performance of a promise. Any kind of articles, goods, valuables, documents or securities may be pledged. In this case the delivery of the goods to the pledgee is essential. The advantage of pledge is that possession of goods passes to the creditor, who has actual control over it. A pledge is also called a pawn. The depositor is known as the pledger and the other party is known as the pledgee. A valid pledge can also be made by a mercantile agent who is in possession of the goods with the consent of the owner as well as by one of the joint owners of goods. From the banker's point of view, of all the methods of charging the security, pledge is perhaps the most satisfactory. The bank has a right of lien and can retain possession of the goods pledged until payment of principal, interest and other expenses.

- (iii) **Risk Capital Foundation:** This Foundation was registered in 1975 under the Societies Registration Act, 1960. It has been sponsored by the Industrial Finance Corporation of India. The main objective of the Foundation is to encourage new entrepreneurs, particularly technologists and professionals by providing seed capital. During the recent years the Government of India has been laying increasing emphasis on encouragement of new entrepreneurs particularly technologists and professionals for promoting medium-size industries with a view to utilizing their experience and expertise and thus broadening the entrepreneurial base in the Indian industry. One of the most difficult problems faced by these technologists and professionals in their efforts to promote an industrial project is to provide necessary amount of the promoters' contribution which represents their financial stake in the project. This Foundation would provide supplementary finance in the form of interest free personal loans to such professionals and technologists who have reasonable industrial and business experience to enable them to make good the shortfall in the promoter's contribution to the equity capital of medium-size industrial projects promoted by them and which have been granted financial assistance by one or more of the All India Financial Institutions, namely, Industrial Finance Corporation of India, Industrial Development Bank of India and others.
- (iv) **Social Cost Benefit Analysis:** The financial evaluation of an industrial project can be made by any of the methods of capital budgeting such as the pay back period, the accounting rate of return method, the net present value method or internal rate of return

method. Now-a-days, a project to be finally accepted should not only satisfy the test of financial viability, it should also be socially desirable. This aspect is termed as social cost benefit analysis.

The social cost benefit analysis involves the evaluation of a project keeping in view the long-term interest of the society and the nation at large. This analysis is done with reference to the social costs of a project and expected benefits from it to the society, e.g., generation of employment etc. It is possible that some projects may not be financially viable; however, they be taken up on account of social considerations. It is being increasingly recognized that the commercial evaluation of industrial projects is not enough to justify commitment of funds to a project, specially when it belongs to the public sector. In fact, the social cost benefit analysis has acquired great urgency in the context of the national policy of making huge public investments in various sectors of the economy.

Social cost benefit analysis is important to private corporations also. It is being increasingly felt in recent years that private entrepreneurs should also undertake such projects as are not only financially viable but also socially desirable. Such projects may get priority in various matters from government as well. If the private sector includes cost benefit analysis in its project evaluation techniques, it will mean that it is taking into account the long-term interest, because in the long-run only those projects will survive that are socially beneficial.

In the context of social costs benefit analysis, it may be noted that the actual costs or revenues in respect of a project do not necessarily reflect the monetary measurement of cost or benefits to the society. For this purpose, social cost benefit analysis is usually made at "opportunity cost" or shadow prices to ascertain the real impact of the project.

There are various indicators indicating the social desirability or otherwise of a project. Important indicators are high employment potentiality, high capital output ratio, net benefit in foreign exchange, favourable cost benefit in foreign exchange, favourable cost benefit ratio; etc.

The computation of cost benefit ratio attempts to measure the total effect of all the social benefits and costs involved in a project. Social benefit in its broadest sense can be defined as any benefit to the society, whether economic or non-economic, internal or external. It is a comprehensive analysis which seeks to examine the total impact of the project.

The ascertainment of social costs and benefits of a project is a ticklish problem. The Manual of Industrial Project Analysis in Developing Countries prepared by the Organization of Economic Co-operation and Development (OECD) provides some guidelines for social cost benefit analysis. It, however, suffers from various drawbacks. It takes into consideration only those aspects of social costs and benefits which can be quantified. But there are many other aspects such as happiness, satisfaction, aesthetic pleasure, etc., which cannot be quantified. Therefore, further research is needed to perfect the technique.

The improvement of the material welfare of the people by increasing the production and supply of goods and services. In the Little Mirrless method all costs and benefits are measured in terms of the opportunity cost of investment on the assumption that in a developing country, savings are more important for rapid industrialization than consumption because of the scarcity of resources.

Some of the important limitations of the technique of social cost-benefit analysis are briefly stated below:

- (1) The successful application of the technique depends upon the reasonable accuracy and dependability of the underlying forecasts and a proper assessment of intangibles. To the extent these are deficient, the analysis would be inaccurate and misleading.
- (2) The technique by itself does not indicate whether a given project when evaluated on the basis of socio-economic considerations is the best choice to reach the ultimate national goals or whether the same resources if, employed in another project, would yield better results.

- (3) The costs of evaluation by this technique could be prohibitively high for comparatively smaller projects.
- (4) The techniques of social cost benefit analysis take into consideration only those aspects of social costs and benefits which can be quantified. But there are many other aspects such as happiness, satisfaction, aesthetic pleasure, better quality of life, etc., which cannot be quantified. Therefore, further research is needed to perfect the technique of social cost benefit analysis.

It must however, be realized that no technique is without its drawbacks. Therefore, while the project authorities must appreciate the limitations, they should not be deferred from making a determined effort to refine and apply the technique in the appraisal of projects.

- (v) Convertible debentures: These are the debentures which are issued with the provision that they are exchangeable at the option of the debenture holder, for ordinary shares on specified terms and conditions. The ratio of exchange between the convertible debentures and the equity shares and the conversion price, i.e., price at which debentures are to be converted into equity shares is normally indicated at the time of issue of the debentures. The debenture-holders receive interest for a certain period of time and may convert their debentures into shares after the company starts making reasonable return on its investment. Convertible debentures have the following distinct advantages.
 - (a) The management can raise equity share capital indirectly without diluting its shares till such time that the funds raised start giving a return on investment.
 - (b) They offer a definite return to debenture-holders who may otherwise not be willing to put their money in companies which are highly capital intensive and have long gestation period.
 - (c) The conversion price is normally set at a figure higher than the price at which atleast the shares could be issued at the time of issue of debentures. It is done in the hope that the market price of the shares will progressively grow. Thus the company normally realizes a higher price for its shares from the conversion of convertible debentures than from the issue of shares.
 - (d) Till the debentures are converted, the cost of financing is low. Firstly, debentures carry a lower rate of interest than the dividend normally payable on shares. Secondly, the interest paid on debentures is a charge against taxable profits of the company and hence there is a considerable tax advantage.
 - (e) Debentures can also be sold when the share market is weak and the investors are wary of putting their money in new shares.
 - (f) Convertible debentures are normally unsecured and, therefore, they do not diminish the capacity of the company to provide security against its other debts.

Convertible debentures are now-a-days becoming a very important source of long-term funds for the companies. Successful companies are able to procure funds easily by issuing convertible debentures. In fact such debentures are useful both for the company as well as for the investors. From the view point of the company, as already stated, it has not to dilute its ownership immediately and cost of procuring capital is also comparatively less. From the view point of investors, in the initial period they are assured a certain rate of return on their investment and a hope to share in the prosperity of the company in future.

The company desirous of issuing convertible debentures is to comply with the guidelines laid down in this regard by SEBI.

- (vi) Bridge Finance: This refers to the loans taken by a company normally from the commercial banks for short period, pending disbursement of term loans sanctioned by financial institutions. Normally, it takes time for the financial institutions to disburse loans to

companies after they have been sanctioned. However, once the loans are approved, companies, in order not to lose further time in starting their projects, arrange for short-term loans from commercial banks. These short-term loans are called bridge finance. These short-term loans are repaid out of the term loans. The bridge loans are normally secured by mortgaging the title deeds relating to immovable properties or hypothecating the movable assets of the company.

- (vii) **CPP Method:** It is a method of accounting for price level changes. Under this method an established and approved general price index is used to convert the value of various items in the Balance sheet and the Profit & Loss Account. Many professional institutes and accountants have recommended that the changes in price levels may be reflected in the financial statements through the Current Purchasing Power (CPP) Method. The main argument is that a change in the price level reflects change in the value of the rupee. This change is denoted by a general price index. For example, a rupee in 2006 could buy much less than a rupee in 1986. We need an index which shows us that how much less a rupee in 2006 buys as compared with a rupee in 1986. Thus, in the Current Purchasing Power Method, the general price index is the basic indicator of a change in the value of the rupee. It is, therefore, used to convert the statements of various periods into rupees of uniform value. Generally, a general price index like the wholesale price index of the Reserve Bank of India is taken to show the change in the value of the rupee in the past years. For example, if we want to add up the value of certain assets purchased in 1986 with those purchased in 2006, we can do so only after converting the rupee value of 1986 in terms of rupee value of 2006. It may, however, be noted that the CPP method accounts for changes in the value of the rupee. It does not account for changes in the value of the individual assets. As such CPP method only tries to present financial statements in terms of rupees of uniform value.

In 1974, the professional bodies of accountants in the U.K., issued a statement on the CPP method which recommended that the companies should prepare supplementary financial statements showing the various items in terms of the value of the pound as at the date of such financial statements. However, a large number of accountants, economists, and government authorities did not agree that the CPP Method was adequate for accounting for price level charges and, therefore, CCA (Current Cost Accounting) method was recommended in place of CPP Method.

- (viii) **Current Cost Accounting:** Current Cost Accounting is a well-known method of adjusting the financial statements for the effects of changing price level, i.e., inflation.

Generally, two main accounting problems are encountered when there is severe inflation in the economy. These are:

- (a) how to adjust profit/loss shown by the conventional profit & loss statement so that it shows a realistic operating result; and
- (b) how to reflect the shareholders' investment (or the net assets) more truly.
- (c) The current cost accounting method recommends the following adjustments to take profit/loss figure to solve the above problems:
 - (i) Depreciation adjustment.
 - (ii) Cost of sales adjustment.
 - (iii) Monetary working capital adjustment.
 - (iv) Gearing adjustment.

As a result of the above adjustments, fixed assets are shown in the balance sheet at their value to the business and not at their depreciated original cost. Similarly, stocks are shown in the balance sheet at their value to the business and not at the lower of their original cost and realizable value. The Balance Sheet is then re-drawn on the

above basis.

Thus current cost accounting attempts to resolve the accounting problems that arise due to changing price levels.

- (ix) Use of tax provision as a source of finance: Among the various sources of short-term financing available to a firm, use of accruals and provisions is one. Provisions are to be discharged at a later date and liability does not manifest immediately. In the intervening period the firm can use these provisions as short-term finance. Tax deducted at source on various payments like salaries, dividends, interest on debenture, contractors payment, etc., together with final provision made at the end of the year which fall due only when a return of income has to be filed is available for utilization till it is not actually paid. The Income-tax Act provides for time limit ranging from 30 to 60 days for depositing the tax deducted at source. Thus, these provisions are purely short-term funds. Any delay in their payment will invoke penalty and penal interest and, therefore, there cannot be a long-term postponement of these payments. In case of postponement of these payments beyond due date, the benefits derived by the use of funds so retained have to be matched against the cost of interest and penalty to be paid.