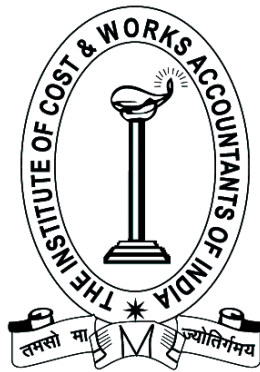


REVISIONARY TEST PAPER

JUNE 2010

GROUP III

**PAPER - 12 : FINANCIAL MANAGEMENT &
INTERNATIONAL FINANCE**



**THE INSTITUTE OF
COST AND WORKS ACCOUNTANTS OF
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FINAL EXAMINATION

(REVISED SYLLABUS - 2008)

GROUP - III

Paper-12 : FINANCIAL MANAGEMENT & INTERNATIONAL FINANCE

Q. 1. Choose the correct alternative and give your reasons/ workings for the same :

(i) Basic objective of Financial Management is :

- (a) maximization of shareholder's wealth;
- (b) maximization of profits.
- (c) arrangement of financial resources.
- (d) efficient utilization of funds.

(ii) Money market hedge involves-

- (a) Borrowing in foreign currency in case of exports;
- (b) Investing in foreign currency in case of imports;
- (c) Both a and b
- (d) Neither of the above.

(iii) Based on the following information, what will be the amount of Inventory?

Current ratio = 2.6:1

Liquid ratio = 1.5:1

Current liabilities = Rs. 40,000.

- (a) Rs. 55,000
- (b) Rs. 44,000
- (c) Rs. 22,000
- (d) Rs. 33,000

(iv) Cost of Equity = 18%

The average income tax rate of shareholders is 30%. Brokerage cost of 2% is expected to be incurred while investing their dividends in alternative securities. Cost of retained earnings is :

- (a) 12%
- (b) 12.35%
- (c) 13%
- (d) 13.75%

- (v) Core current assets represents
- (a) Total working capital
 - (b) Permanent working capital
 - (c) Working capital financed through long term funds.
 - (d) Additional working capital.
- (vi) The value of a share of MN Ltd. after right issue was found to be Rs. 75. The theoretical value of the right is Rs. 5. The number of existing shares required for a rights share is 2. The subscription price at which were issued were :
- (a) Rs. 22.50
 - (b) Rs. 40.00
 - (c) Rs. 65.00
 - (d) Rs. 82.00
- (vii) The following various currency quotes are available from a leading bank:
- Rs./£ 75.31/75.33
£/\$ 0.6391/0.6398
\$/¥ 0.01048/0.01052
- The rate at which yen (¥) can be purchased with rupees will be
- (a) Re. 0.5070
 - (b) Rs. 1.5030
 - (c) Rs. 1.7230
 - (d) None of the above.
- (viii) Ms. S buys 10000 shares of RR Ltd. at Rs. 50 and obtains a complete hedge of shorting 400 Nifties at Rs. 2200 each. She closes out her position at closing price of next day at which point the share of RR Ltd. has dropped 2% and the Nifty future has dropped 1.5%. What is the overall profit/(loss) of this set of transaction?
- (a) Gain Rs. 3200
 - (b) Gain Rs. 2200
 - (c) Loss Rs. 3200
 - (d) Loss Rs. 2200
- (ix) A Ltd. intends to invest Rs. 50 lacs in Commercial Paper (C.P) and has received the following quotes from a primary dealer :
- Bid : 5.30 %
Ask : 5.00 %
- If maturity period of C.P is 45 days , the investment amount (rounded up to nearest rupee) will be (assume day count basis "actual /365")
- (a) Rs. 4967541
 - (b) Rs. 4968454
 - (c) Rs. 4969367
 - (d) None of (a), (b), (c).

- (x) HP Leasing Company expects a minimum yield of 10% on its investment in the leasing business. It proposes to lease a machine costing Rs. 5,00,000 for ten years. If yearly lease payments are received in advance, the lease rental to be charged by the company for lease will be :
- (a) Rs. 81372
 (b) Rs. 73975
 (c) Rs. 72,370
 (d) None of (a) , (b) , (c).

Answer 1.

- (i) (a) maximization of shareholder's wealth. Financial Management is concerned with raising of financial resources and their effective utilization towards maximizing shareholder's wealth.
- (ii) (c) Both a and b are correct. Importer will have FC liability and settle the same with maturity proceeds of FC asset created. Exporter will get the asset value from overseas customer and settle FC liability there itself.

- (iii) (b) Rs. 44,000

Current ratio = Current Asset / Current Liability

$$2.6 = CA / 40,000$$

$$CA = 40,000 \times 2.6$$

$$= \text{Rs. } 1,04,000$$

$$\text{Liquid Assets} = 40,000 \times 1.5$$

$$= \text{Rs. } 60,000$$

$$\text{Inventory} = CA - LA$$

$$= \text{Rs. } 44,000.$$

- (iv) (b) 12.35%

$$\text{Cost of retained earnings} = 18(1 - 0.30)(1 - 0.02)$$

$$= 18 \times 0.7 \times 0.98$$

$$= 12.348 \text{ or } 12.35$$

- (v) Both (b) and (c).

Core current assets represents current assets required on a continuing basis and therefore should be financed through long term assets.

- (vi) (c) Rs 65.

Theoretical value of a right (V_r) = $(P - S) / N + 1 = \text{Rs. } 5$ where $N = 2$

$$\text{or, } P - S = 5(2 + 1)$$

$$\text{or, } P = 15 + S \text{ ----- (i)}$$

Value of share after right (V_o) = $NP + S$ where $V_o = \text{Rs. } 75$

$$\text{or, } 75 = (2P + S) / 3$$

$$\text{or, } 2P + S = 3 \times 75$$

$$\text{or, } 2P + S = 225 \text{ ----- (ii)}$$

Putting value of P in equation (ii), we get

$$2P + S = 225$$

$$\text{or, } 2(15+S)+S = 225$$

$$\text{or, } 30+3S = 225$$

$$\text{or, } S = (225-30)/3$$

$$\text{or, } S = 65.$$

(vii) (a) Re. 0.5070

To purchase (¥) we need to have a quote of (¥) in terms of Rs. We need only the ASK quote.

$$\text{ASK (Rs. / ¥)} = \text{ASK (Rs./£)} \times \text{ASK (£ / \$)} \times \text{ASK(\$ / ¥)}$$

$$= 75.33 \times 0.6398 \times 0.01052$$

$$= \text{Rs. 0.5070 (approx.)}$$

(viii) (a) Gain Rs. 3200

	Value of bought shares	Value of short future
Today's valuation	$50 \times 10000 = \text{Rs. 5.00 lac}$	$400 \times 2200 = \text{Rs. 8.80 lac}$
Next day's valuation	$49 \times 10000 = \text{Rs. 4.90 lac}$	$400 \times 2167 = \text{Rs. 8.668 lac}$
Gain /(loss)	2% dropped = Rs. 0.10 lac	1.5% dropped = Rs. 0.132 lac

$$\text{Net Gain} = \text{Rs. 0.13200} - \text{Rs. 0.1000 lac} = \text{Rs. 3200/-}.$$

(ix) (c) Rs. 4969367

$$\text{Interest yield} = (F - P) / P \times (365 / \text{maturity period}) \times 100$$

$$0.05 = (\text{Rs. 5000000} - P) / P \times 365 / 45 \quad (F=5000000, P=? \text{ Investment})$$

$$\text{or, } 0.05 = \text{Rs. } (5000000 \times 73 - 73 P) / 9P$$

$$\text{or, } P = 365000000 / 73.45$$

$$\text{or, } P = 4969367 \text{ (rounded off)}$$

(x) (b) Rs. 73975

Let, lease rental per annum be, x

$$\text{Rs. 500000} = x + x / (1+0.1) + x / (1+0.1)^2 + \dots + x / (1+0.1)^9$$

$$= x + 5.759 x = 6.759 x$$

$$\text{or, } x = \text{Rs. 500000} / 6.759 = \text{Rs. 73975}.$$

Q. 2. Discuss the following :

(a) Functions of Finance Manager.

(b) The wealth maximisation objective is superior to the profit maximisation objective of a firm.

(c) Finance function.

Answer 2. (a)

The Finance Manager's main objective is to manage funds in such a way so as to ensure their optimum utilisation and their procurement in a manner that the risk, cost and control considerations are properly balanced in a given situation. To achieve these objectives the Finance Manager performs the following functions :

- (i) Estimating the requirement of Funds : Both for long-term purposes i.e. investment in fixed assets and for short-term i.e. for working capital. Forecasting the requirements of funds involves the use of techniques of budgetary control and long-range planning.
- (ii) Decision regarding Capital Structure : Once the requirement of funds has been estimated, a decision regarding various sources from which these funds would be raised has to be taken. A proper balance has to be made between the loan funds and own funds. He has to ensure that he raises sufficient long term funds to finance fixed assets and other long term investments and to provide for the needs of working capital.
- (iii) Investment Decision : The investment of funds, in a project has to be made after careful assessment of various projects through capital budgeting. Assets management policies are to be laid down regarding various items of current assets. For e.g. receivable in coordination with sales manager, inventory in coordination with production manager.
- (iv) Dividend decision : The finance manager is concerned with the decision as to how much to retain and what portion to pay as dividend depending on the company's policy. Trend of earnings, trend of share market prices, requirement of funds for future growth, cash flow situation etc., are to be considered.
- (v) Evaluating financial performance : A finance manager has to constantly review the financial performance of the various units of organisation generally in terms of ROI Such a review helps the management in seeing how the funds have been utilised in various divisions and what can be done to improve it.
- (vi) Financial negotiation : The finance manager plays a very important role in carrying out negotiations with the financial institutions, banks and public depositors for raising of funds on favourable terms.
- (vii) Cash management : The finance manager lays down the cash management and cash disbursement policies with a view to supply adequate funds to all units of organisation and to ensure that there is no excessive cash.
- (viii) Keeping touch with stock exchange : Finance manager is required to analyse major trends in stock market and their impact on the price of the company share.

Answer 2. (b)

A firm's financial management may often have the following as their objectives :

- (i) The maximisation of firm's profit.
- (ii) The maximisation of firm's value / wealth.

The maximisation of profit is often considered as an implied objective of a firm. To achieve the aforesaid objective various type of financing decisions may be taken. Options resulting into maximisation of profit may be selected by the firm's decision makers. They even sometime may adopt policies yielding exorbitant profits in short run which may prove to be unhealthy for the growth, survival and overall interests of the firm. The profit of the firm in this case is measured in terms of its total accounting profit available to its shareholders.

The value/wealth of a firm is defined as the market price of the firm's stock. The market price of a firm's stock represents the focal judgment of all market participants as to what the value of the particular firm is. It takes into account present and prospective future earnings per share, the timing and risk of these earnings, the dividend policy of the firm and many other factors that bear upon the market price of the stock.

The value maximisation objective of a firm is superior to its profit maximisation objective due to following reasons.

1. The value maximisation objective of a firm considers all future cash flows, dividends, earning per

share, risk of a decision etc. whereas profit maximisation objective does not consider the effect of EPS, dividend paid or any other returns to shareholders or the wealth of the shareholder.

2. A firm that wishes to maximise the shareholders wealth may pay regular dividends whereas a firm with the objective of profit maximisation may refrain from dividend payment to its shareholders.
3. Shareholders would prefer an increase in the firm's wealth against its generation of increasing flow of profits.
4. The market price of a share reflects the shareholders expected return, considering the long-term prospects of the firm, reflects the differences in timings of the returns, considers risk and recognizes the importance of distribution of returns.

The maximisation of a firm's value as reflected in the market price of a share is viewed as a proper goal of a firm. The profit maximisation can be considered as a part of the wealth maximisation strategy.

Answer 2. (c)

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. 3. Explain the interrelationship between investment, financing and dividend decisions.

Answer 3.

The finance functions are divided into three major decisions, viz., investment, financing and dividend decisions. It is correct to say that these decisions are inter-related because the underlying objective of these three decisions is the same, i.e. maximisation of shareholders' wealth. Since investment, financing and dividend decisions are all interrelated, one has to consider the joint impact of these decisions on the market price of the company's shares and these decisions should also be solved jointly. The decision to invest in a new project needs the finance for the investment. The financing decision, in turn, is influenced by and influences dividend decision because retained earnings used in internal financing deprive shareholders of their dividends. An efficient financial management can ensure optimal joint decisions. This is possible by evaluating each decision in relation to its effect on the shareholders' wealth.

The above three decisions are briefly examined below in the light of their inter-relationship and to see how they can help in maximising the shareholders' wealth i.e. market price of the company's shares.

Investment decision : The investment of long term funds is made after a careful assessment of the various projects through capital budgeting and uncertainty analysis. However, only that investment proposal is to be accepted which is expected to yield at least so much return as is adequate to meet its cost of financing. This has an influence on the profitability of the company and ultimately on its wealth.

Financing decision : Funds can be raised from various sources. Each source of funds involves different issues. The finance manager has to maintain a proper balance between long-term and short-term funds. With the total volume of long-term funds, he has to ensure a proper mix of loan funds and owner's funds. The optimum financing mix will increase return to equity shareholders and thus maximise their wealth.

Dividend decision : The finance manager is also concerned with the decision to pay or declare dividend. He assists the top management in deciding as to what portion of the profit should be paid to the shareholders by way of dividends and what portion should be retained in the business. An optimal dividend pay-out ratio maximises shareholders' wealth.

We can infer from the above discussion that investment, financing and dividend decisions are interrelated and are to be taken jointly keeping in view their joint effect on the shareholders' wealth.

Q. 4. What are currency futures ? List the steps involved in the technique of hedging through futures.

Answer 4.

A currency futures contract is a derivative financial instrument that acts as a conduit to transfer risks attributable to volatility in prices of currencies. It is a contractual agreement between a buyer and a seller for the purchase and sale of a particular currency at a specific future date at a predetermined price. A futures contract involves an obligation on both parties to fulfil the terms of the contract. A futures contract can be bought or sold only with reference to the USD.

There are six steps involved in the technique of hedging through futures:

- (i) Estimating the target income (with reference to the spot rate available on a given date.)
- (ii) Deciding on whether Futures Contracts should be bought or sold.
- (iii) Determining the number of contracts (since contract size is standardised).
- (iv) Identifying profit or loss on target outcome.
- (v) Closing out futures position and
- (vi) Evaluating profit or loss on futures.

Q. 5. Financing Decision and EPS Maximisation

A Company requires Rs. 15 Lakhs for the installation of a new unit, which would yield an annual EBIT of Rs. 2,50,000. The Company's objective is to maximise EPS. It is considering the possibility of Issuing Equity Shares plus raising a debt of Rs. 3,00,000, Rs. 6,00,000 and Rs. 9,00,000. The current Market Price per Share is Rs. 50 which is expected to drop to Rs. 40 per share if the market borrowings were to exceed Rs. 7,00,000. The cost of borrowing are indicated as follows :

Level of Borrowing Upto Rs. 2,00,000, Rs. 2,00,000 to Rs. 6,00,000, Rs. 6,00,000 to Rs. 9,00,000, Cost of Borrowing 12% p.a. ,15% p.a. ,17% p.a.

Assuming a tax rate of 50%, work out the EPS and the scheme, which you would recommended to the Company.

Answer 5.

Statement showing EPS under the different schemes

Particulars	Scheme I	Scheme II	Scheme III
Capital Required	15,00,000	15,00,000	15,00,000
Less : Debt Content	3,00,000	6,00,000	9,00,000
Balance Equity Capital required	12,00,000	9,00,000	6,00,000
Market Price per Share	Rs. 50	Rs. 50	Rs. 40
Number of Equity Shares to be issued (Equity Capital/MPS)	24,000	18,000	15,000

Profitability Statement

	Scheme I	Scheme II	Scheme III
EBIT	2,50,000	2,50,000	2,50,000
Less : Interest on Debt			
First Rs. 2,00,000 at 12%	24,000	24,000	24,000
Next Rs. 4,00,000 at 15%	15,000	60,000	60,000
Balance at 17%	—	—	51,000
Total Interest	39,000	84,000	1,35,000
EBIT	2,11,000	1,66,000	1,15,000
Less : Tax at 50%	1,05,500	83,000	57,500
EAT	1,05,500	83,000	57,500
Earnings Per Share (EPS) = EAT ÷ No. of Shares	4.40	4.61	3.83
Average Interest Rate = Total Interest ÷ Debt	12%	14%	15%
ROCE=EBIT ÷ Capital Employed	16.67%	16.67%	16.67%

Conclusion : EPS is maximum under Scheme II and is hence preferable.

Leverage Effect : Use of Debt Funds and Financial Leverage will have a favourable effect only if ROCE > Interest rate. ROCE is 16.67% and hence upto 15% interest rate, i.e. Scheme II, use of debt will have favourable impact on EPS and ROCE. However, when interest rate is higher at 17%, financial leverage will have negative impact and hence EPS falls from Rs. 4.61 to Rs. 3.83.

Q. 6. ABC Ltd. wants to raise Rs.5,00,000 as additional capital. It has two mutually exclusive alternative financial plans. The current EBIT is Rs. 17,00,000 which is likely to remain unchanged. The relevant Information is -

Present Capital Structure:	3,00,000 Equity shares of Rs.10 each and 10% Bonds of Rs. 20,00,000
Tax Rate:	50%
Current EBIT:	Rs. 17,00,000
Current EPS:	Rs. 2.50
Current Market Price:	Rs. 25 per share
Financial Plan I:	20,000 Equity Shares at Rs. 25 per share.
Financial Plan II:	12% Debentures of Rs. 5,00,000.

What is the indifference level of EBIT? Identify the financial break-even levels and plot the EBIT-EPS lines on graph paper. Which alternative financial plan is better?

Answer 6.

1. Computation of EBIT - EPS Indifference Point

Particulars	Financial Plan I	Financial Plan II
Owner's Funds	(3,00,000×10+20,000×25)= Rs. 35,00,000	3,00,000×10 = Rs.30,00,000
Borrowed Funds (given)	Rs. 20,00,000	20,00,000+5,00,000 = Rs. 25,00,000
Total Capital Employed	Rs. 55,00,000	Rs. 55,00,000

Particulars	Financial Plan I	Financial Plan II
EBIT (let it be Rs. X)	X	X
Less: Interest	$20,00,000 \times 10\% = \text{Rs. } 2,00,000$	$(20,00,000 \times 10\% + 5,00,000 \times 12\%) = \text{Rs. } 2,60,000$
EBT	$X - 2,00,000$	$X - 2,60,000$
Less: Tax at 50%	$\frac{1}{2}X - 1,00,000$	$\frac{1}{2}X - 1,30,000$
EAT	$\frac{1}{2}X - 1,00,000$	$\frac{1}{2}X - 1,30,000$
Number of Equity Shares	$3,00,000 + 20,000 = 3,20,000$	(given) 3,00,000
EPS	$[\frac{1}{2}X - 1,00,000] \div 3,20,000$	$[\frac{1}{2}X - 1,30,000] \div 3,00,000$

For indifference between the above alternatives, EPS should be equal.

Hence, we have
$$\frac{[\frac{1}{2}X - 1,00,000]}{3,20,000} = \frac{[\frac{1}{2}X - 1,30,000]}{3,00,000}$$

On Cross Multiplication, $15X - 30 \text{ Lakhs} = 16X - 41.6 \text{ Lakhs}$; or $X = 11.6 \text{ Lakhs}$

Hence EBIT should be Rs.11.60 Lakhs and at that level, EPS will be Rs.1.50 under both alternatives.

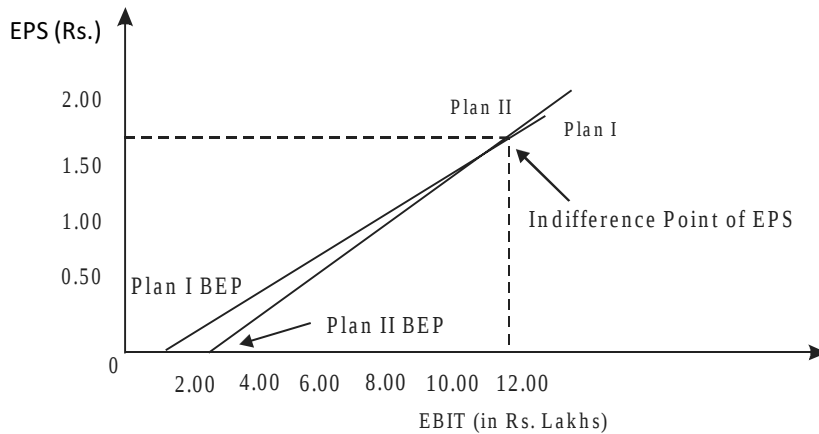
2. Computation of Financial Break-Even Point

The Financial BEP for the two plans are --

Plan I EBIT = Rs.2,00,000 (i.e. 10% interest on Rs.20,00,000)

Plan II EBIT = Rs.2,60,000 (i.e. 10% interest on Rs.20,00,000 and 12% interest on Rs.5,00,000)

3. Graphical Depiction of Indifference Point and Financial BEP



4. Interpretation of Graph :

- The horizontal intercepts identify the Financial Break Even levels of EBIT for each plan.
- The point at which EPS lines of both plans intersect is called Indifference Point. Its horizontal intercept gives the level of EBIT at that point. The vertical intercept gives the value of EPS at that point.
- Below the indifference point, one plan will have EPS over the other. Above that point, automatically the other plan will have higher EPS over the former. This is interpreted as under—

Interpretation of the Indifference Point

Situation	Option	Reason
EBIT below Indifference Point	Option with lower debt (Interest Burden)	When rate of earnings and operating profits (EBIT) are low, more interest and debt burden is not advisable. A high DOL should be properly managed by low Financial Leverage.
EBIT equal to Indifference Point	Any alternative can be chosen.	Same EPS due to indifference point.
EBIT above Indifference Point	Option with higher debt (Interest Burden)	When EBIT is high, financial leverage works till the EPS is maximised. Low DOL should be coupled with high DFL, to maximize gain to Equity Shareholders.

Conclusion : In the given case Indifference Point of EBIT = Rs.11.60 Lakhs but the current EBIT is Rs.17 lakhs. The new EBIT after employing additional capital of Rs.5 Lakhs will be $(17/50 \times 55) = \text{Rs.}18.70$ Lakhs. Since this is above the indifference point of Rs. 11.60 Lakhs, the option with the higher debt burden should be chosen. Hence, the firm should prefer Plan II for financing.

Note : As an exercise, students may recalculate the EPS for both plans with EBIT of Rs.18.70 Lakhs, EPS will be Rs.2.61 and Rs.2.68 respectively. Hence Plan II is better on account of higher EPS.

Q. 7. (a) What is capital rationing? Discuss the factors that lead to capital rationing.

(b) Determine which of the following two mutually exclusive projects should be selected if they are :

(i) One-off investments or (ii) If they can be repeated indefinitely :

(Rs.)

Particulars	Project A	Project B
Investment	40,000	60,000
Life	4 years	7 years
Annual net cash inflows	15,000	16,000
Scrap value	5,000	3,000

Cost of capital is 15%. Ignore taxation. The Present Value of annuity for 4 years and 7 years at 15% are respectively 2.8550 and 4.1604 and the discounting factors at 4 years/7 years respectively 0.5718 and 0.3759.

Answer 7. (a)

CAPITAL RATIONING :

Capital rationing is a situation where a constraint or budget ceiling is placed on the total size of capital expenditures during a particular period. Often firms draw up their capital budget under the assumption that the availability of financial resources is limited.

Under this situation, a decision maker is compelled to reject some of the viable projects having positive net present value because of shortage of funds. It is known as a situation involving capital rationing.

Factors Leading to Capital Rationing - Two different types of capital rationing situation can be identified, distinguished by the source of the capital expenditure constraint.

I. External Factors - Capital rationing may arise due to external factors like imperfections of capital market or deficiencies in market information which might have for the availability of capital. Generally, either

the capital market itself or the Government will not supply unlimited amounts of investment capital to a company, even though the company has identified investment opportunities which would be able to produce the required return. Because of these imperfections the firm may not get necessary amount of capital funds to carry out all the profitable projects.

II. Internal Factors - Capital rationing is also caused by internal factors which are as follows:

- Reluctance to take resort to financing by external equities in order to avoid assumption of further risk
- Reluctance to broaden the equity share base for fear of losing control.
- Reluctance to accept some viable projects because of its inability to manage the firm in the scale of operation resulting from inclusion of all the viable projects.

Answer 7. (b)

(i) Project A (Rs.)

Year	Cash flow	Discount factor	Present value
0	(40,000)	1.0000	(40,000)
1-4	15,000	2.8550	42,825
4	5,000	0.5718	2,859
			NPV = 5,684

(i) Project B (Rs.)

Year	Cash flow	Discount factor	Present value
0	(60,000)	1.0000	(60,000)
1-7	16,000	4.1604	66,566
7	3,000	0.3759	1,128
			NPV = 7,694

Suggestion : If Projects A and B are one-off investments, then Project B is preferable.

(ii) Uniform Annual Equivalent

$$A = \frac{5684}{2.8550} = 1991 \quad B = \frac{7694}{4.1604} = 1849$$

Suggestion : Choose Project A for continual repeats.

Q. 8. (a) Discuss the tax effects of lease financing from the point of lessor and lessee.

(b) Welsh Ltd. is faced with a decision to purchase or acquire on lease a mini car. The cost of the mini car is Rs. 126965. It has a life of 5 years. The mini car can be obtained on lease by paying equal lease rentals annually. The leasing company desires a return of 10% on the gross value of the asset. Welsh limited can also obtain 100% finance from its regular banking channel. The rate of interest will be 15% p.a and the loan will be paid in five annual installments, inclusive of interest. The effective tax rate of the company is 40%. For the purpose of taxation it is to be assumed that the asset will be written off a period of 5 years on straight line basis. Advise Welsh Limited about the method of acquiring the car.

What should be the annual lease rental to be charged by the leasing company to match the loan option?

For your exercise use the following discount factors for five years :

Discount Rate	1	2	3	4	5
10%	0.91	0.83	0.75	0.68	0.62
15%	0.87	0.76	0.66	0.57	0.49
9%	0.92	0.84	0.77	0.71	0.65

Answer 8. (a)

The lessor is entitled to claim the depreciation allowance and lease rentals will be taken into consideration in computation of taxable income.

From the point of view of lessee, the full amount of the annual lease payment is a deductible expense for computing taxable income.

Answer 8. (b)

BUY OPTION :

(a) Annual Loan Repayment : $\text{Loan Amount/PVIFA (15\%,5)} = \text{Rs. } 126965/3.86 = \text{Rs. } 32892$

Interest Computation :

Year	0	1	2	3	4
Opening Bal.	126965	94073	75292	53694	28856
Interest 15%	0	14111	11294	8054	4036
Total	126965	108184	86586	61748	32892
Repayment	32892	32892	32892	32892	32892
Closing Bal.	94073	75292	53694	28856	0

Debt Option : Cash Outflows

Year	Installment	Interest @ 15%	Depreciation	Tax Shield on Int. & Dep.	Net Cash Outflow	PVF @ 9%	PV of Cash Outflows
0	32892	0	0	0	32892	1.00	32892
1	32892	14111	25393	15802	17090	0.92	15723
2	32892	11294	25393	14675	18217	0.84	15302
3	32892	8054	25393	13379	19513	0.77	15025
4	32892	4036	25393	11772	21120	0.71	14995
5	0	0	25393	10157	(10157)	0.65	(6602)
Total Present Value of Cash Outflows:							87335

LEASE OPTION :

Annual Lease rentals = Cost of assets : $[1 + \text{PVIFA (10\%,4)}]$

[Note Rentals paid in Advance]

= Rs. 126965 : 4.17 = Rs. 30447

Leasing Alternative :

Year	Lease Payment	Tax Shield on Outflows	After Tax Cash Flow	PV Factors at 9%	PV of Cash Outflows
0	30447	0	30447	1.00	30447
1 - 4	30447	12179	18268	3.24	59188
5	0	12179	(12179)	0.65	(7916)
Total Present Value of Cash Outflows :					81719

Decision : Since PV of Leasing is lower than that of Buying, it is advisable to go for leasing.

(b) Let the Annual Rentals be L

After tax cost of Lease Rentals = 0.60L

PV of Lease Rentals = $0.60L \times 4.17 = 2.502L$

Equation $2.502L = \text{Rs. } 87335$, we get L as Rs. 34906

Q. 9. 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: 1,04,000 completed units of production plus 4,000 units of work-in-progress.
Based on the above activity, estimated cost per unit is:

Raw material	Rs. 80 per unit
Direct wages	Rs. 30 per unit
Overheads (exclusive of depreciation)	Rs. 60 per unit
Total cost	<u>Rs. 170 per unit</u>
Selling price	Rs. 200 per unit

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

Finished goods in stock	8,000 units
Credit allowed by suppliers	Average 4 weeks
Credit allowed to debtors/receivables	Average 8 weeks
Lag in payment of wages	Average 1½ weeks
Cash at banks (for smooth operation) is expected to be	Rs. 25,000

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.

Find out :

- the net working capital required;
- the maximum permissible bank finance under first and second methods of financing as per Tandon Committee Norms.

Answer 9.

(i) Estimate of the Requirement of Working Capital

	Rs.	Rs.
A. Current Assets:		
Raw material stock (Refer to Working note 3)	6,64,615	
Work in progress stock (Refer to Working note 2)	5,00,000	
Finished goods stock (Refer to Working note 4)	13,60,000	
Debtors (Refer to Working note 5)	29,53,846	
Cash and Bank balance	<u>25,000</u>	55,03,461
B. Current Liabilities:		
Creditors for raw materials (Refer to Working note 6)	7,15,740	
Creditors for wages (Refer to Working note 7)	<u>91,731</u>	8,07,471
Net Working Capital (A-B)		<u>46,95,990</u>

(ii) The maximum permissible bank finance as per Tandom Committee Norms

First Method :

75% of the net working capital financed by bank i.e. 75% of Rs. 46,95,990

(Refer to (i) above)

= Rs. 35,21,993

Second Method :

(75% of Current Assets)- Current liabilities (i.e. 75% of Rs. 55,03,461)-Rs. 8,07,471

(Refer to (i) above)

= Rs. 41,27,596 – Rs. 8,07,471

= Rs. 33,20,125

Working Notes :

1. Annual cost of production	Rs.
Raw material requirements (1,04,000 units × Rs. 80)	83,20,000
Direct wages (1,04,000 units × Rs. 30)	31,20,000
Overheads (exclusive of depreciation)(1,04,000 × Rs. 60)	<u>62,40,000</u>
	<u>1,76,80,000</u>

2. Work in progress stock	Rs.
Raw material requirements (4,000 units × Rs. 80)	3,20,000
Direct wages (50% × 4,000 units × Rs. 30)	60,000
Overheads (50% × 4,000 units × Rs. 60)	<u>1,20,000</u>
	<u>5,00,000</u>

3. Raw material stock

It is given that raw material in stock is average 4 weeks consumption. Since, the company is newly formed, the raw material requirement for production and work in progress will be issued and consumed during the year.

Hence, the raw material consumption for the year (52 weeks) is as follows :

	Rs.
For Finished goods	83,20,000
For Work in progress	<u>3,20,000</u>
	<u>86,40,000</u>

Raw material stock $\frac{\text{Rs. } 86,40,000}{52 \text{ weeks}} \times 4 \text{ weeks}$
i.e. Rs. 6,64,615

4. Finished goods stock

8,000 units @ Rs. 170 per unit = Rs. 13,60,000

5. Debtors for sale

Credit allowed to debtors	Average 8 weeks
Credit sales for year (52 weeks) i.e. (1,04,000 units-8,000 units)	96,000 units
Selling price per unit	Rs. 200
Credit sales for the year (96,000 units × Rs. 200)	Rs. 1,92,00,000
Debtors	$\frac{\text{Rs. 1,92,00,000}}{52 \text{ weeks}} \times 8 \text{ weeks}$ i.e Rs. 29,53,846

6. Creditors for raw material :

Credit allowed by suppliers	Average 4 weeks
Purchases during the year (52 weeks) i.e. (Rs. 83,20,000 + Rs. 3,20,000 + Rs. 6,64,615)	Rs. 93,04,615
Creditors	$\frac{\text{Rs. 93,04,615}}{52 \text{ weeks}} \times 4 \text{ weeks}$ i.e Rs. 7,15,740
Lag in payment of wages	Average 1½ weeks
Direct wages for the year (52 weeks) i.e. (Rs. 31,20,000 + Rs. 60,000)	Rs. 31,80,000
(Refer to Working notes 1 and 2 above)	
Creditors	$\frac{\text{Rs. 31,80,000}}{52 \text{ weeks}} \times 1\frac{1}{2} \text{ weeks}$ i.e. Rs. 91,731

Q. 10. A small firm has a total sales of Rs. 100 lakhs, of which 80% is on credit. It is offering a discount-credit terms of 2/40 Net 30. Of the total, 50% of customers avail of discount and the balance pay in 120 days. The past experience indicates that bad debt losses are around 1% of credit sales. The firm spends about Rs. 1,20,000 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 also pay advance against receivables to the firm at an interest rate of 18% after withholding 10% as reserve. Answer the following :

- What is the total credit sales?
- What is the average collection period?
- What is the average receivables?
- What is the factoring commission payable per annum?
- What is the disburseable amount to the firm by the factor?
- What is the total interest chargeable by the factor?
- What is the cost of factoring?
- Should the firm avail factoring services?

Answer 10.

		(Rs.)
(a) Total credit sales ($100\text{lakhs} \times 80\%$)		8000000
(b) Average collection period $[(40 \times 0.5) + (120 \times 0.5)]$		80 days
(c) Average debtors ($80\text{lakhs} \times 80 / 360$)		1777778
(d) Factoring commission ($80\text{lakhs} \times 2\%$)		160000
(e) Disbursable amount		
Average receivables	1777778	
(-) Factor reserve @10%	177778	
	1600000	
(-) Commission ($1777778 \times 2\%$)	<u>35554</u>	
		1564446
(f) Total interest		
Interest for 80 days $[1564446 \times 18\% \times (80 / 360)]$	62578	
Interest per year $[62578 \times (360 / 80)]$	281600	
(g) Effective cost of factoring		
Commission	160000	
Interest	<u>281600</u>	
	441600	
(-) savings in		
Bad debt	80000	
Admin cost	<u>120000</u>	
Effective cost	<u>241600</u>	
Effective cost of factoring $(241600 / 1564446) \times 100 = 15.4\%$		
(h) If the firm obtain funds less than 15.4% interest rate, then firm need not accept factoring services. Otherwise advised to accept factoring.		

Q. 11. (a) Differentiate between factoring and asset securitization.

(b) The turnover of Rs. Ltd. is Rs. 60 lakhs of which 80% is on credit. Debtors are allowed on month to clear off the des. A factor is willing to advance 90% of the bills raised on credit for a fee of 2% a month plus a commission of 4% on the total amount of debts. Rs 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.

A scheduled bank has come forward to make an advance equal to 90% of the debts at an interest rate of 18% p.a. However its processing fee will be at 2% on the debts. Would you accept factoring or the offer from the bank?

Answer 11. (a)

Factoring Vs Securitization

Factoring	Securitization
1. One party involved	1. Generally a wide range of investors are involved
2. May be done with or without recourse	2. Done without recourse
3. Payment from the factor is received after a time lag	3. Cash is generally received as soon as the issue is placed
4. Additional services like credit checking, ledger maintenance are offered	4. No such additional services are offered.
5. Short term receivables are factored	5. Long term receivables are securitized
6. Credit rating is not compulsory	6. Credit rating is compulsory
7. Existing receivables can be factored	7. Along with existing receivables, future receivables can also be securitized.

Answer 11. (b)

Factoring arrangement :

Assuming the turnover given in the problem is annual turnover, the calculations are as follows :

Cost of factoring : Rs.

Fee of 2% on 90% of Rs. 4,00,000 = 7,200

(80% of 60 lakhs = 48 lakhs/12 = 4 lakhs is the monthly credit sales)

Commission at 4% on Rs. 4,00,000 = 16,000

23,200

Less : Savings in cost

Savings in annual management cost is Rs. 21,600

Hence for a month : 21600/12 = Rs. 1,800

1% savings of Bad debts on Rs. 4,00,000 = Rs. 4,000

5,800

Net cost in factoring 17,400

Cost of Bank Advance :

Interest at 18% p.a. for one month on

90% of Rs. 4,00,000 5,400

Processing fee at 2% on Rs. 4,00,000 8,000

Add : Bad debts loss that cannot be avoided 4,000

Since costs of both alternatives are equal, it is immaterial whether R. Ltd. goes in for factoring or bank loan.

Note : Alternatively the same problem can be solved on a annual basis leading to the same total cost of Rs. 2,00,800.

- Q. 12. D Ltd. has 10 lac equity shares outstanding at the beginning of the accounting year 2002. The current market price of the shares is Rs. 150 each. The Board of Directors of the company has recommended Rs. 8 per share as dividend. The rate of capitalization, appropriate to the risk –class to which the company belongs is 12%.
- Based on MM approach, calculate the market price of the share of the company when recommended dividend is (a) declared (b) not declared.
 - How many new shares are to be issued by the company at the end of the accounting year on the assumption that the net income for the year is Rs. 2 crores and the investment budget is Rs. 4 crores when (a) the above dividends are distributed and (b) dividends are not declared.
 - Show that the market value of the shares at the end of accounting year will remain same whether dividends are distributed or not declared.

Answer 12.

Under M-M approach,

$$P_0 = P_1 + D_1 / 1 + K_e$$

Where,

P_0 = Existing market price per share, i.e Rs 150

P_1 = Market price per share at year end.

D_1 = Contemplated dividend per share, i.e Rs. 8

K_e = Capitalisation rate, i.e 12% or 0.12

(i)(a) Share price when dividend is declared :

$$150 = P_1 + 8 / 1 + 0.12$$

$$\text{or, } 150 + 18 = P_1 + 8$$

$$\text{or, } P_1 = 168 - 8$$

$$\text{or, } P_1 = 160$$

(b) Share price when dividend is not declared :

$$150 = P_1 + 0 / 1 + 0.12$$

$$\text{or, } P_1 = 150 + 18 - 0$$

$$\text{or, } P_1 = 168$$

(ii) No. of shares to be issued:

Rs. in lacs

Particulars	If dividend is declared	If dividend is not declared
Net Income	200	200
Less: Dividend paid	80	0
Retained earnings	120	200
Investment budget	400	400
Amount to be raised by issue of new shares (i)	280	200
Market price per share (ii)	Rs. 160/-	Rs. 168/-
No. of shares to be issued	175000	119048

(iii) Verification of MM Dividend irrelevancy theory :

Particulars	If dividend is declared	If dividend is not declared
Existing shares	10,00,000	10,00,000
New equity shares	175000	119048
Total no. of shares at year end (i)	1175000	1119048
Market price per share (ii)	Rs.160	Rs.168
Total market value at end of the year (i × ii)	Rs. 1880 lacs	Rs. 1880 lacs

From the above analysis we can observe that the market value of the shares at the end of the year will remain same whether dividends are distributed or not declared.

Q. 13. Discuss the difference between Public Sector and Private Sector accounting.

Answer 13.

Distinction between Public Sector and Private Sector Accounting :

Public sector accounts are prepared to show the accountability to the concerned department and private sector accounts are prepared to find out operating results, profit or loss, out of the commercial transactions undertaken to earn profit. Other differences are as follows:

- **Different Accounting System** - Private sector accounts are prepared on accrual basis *i.e.* earning and spending *etc.* Balance of both debit and credit side equates one another, but public sector accounts are maintained on cash basis *i.e.* cash receipt and cash payment for the respective period are taken into consideration.
- **Profit or Loss** - The purpose of public sector account is to depict accountability to the legislature while private sector accounts try to depict commercial profit earned for the year ended.
- **Balance Sheet** - In private sector accounts, balance sheet shows assets and liabilities on a cumulative basis but in case of public sector accounting, the current year's expenditures as well as capital receipts are shown. In Private sector accounting final accounts consists of profit and loss account, balance sheet, statement of changes in financial position. In case of public sector accounts, final accounts consists of public sector account and balancing accounts. Under balancing account, all the balances of the public sector accounts are shown along with receivables and payables.
- **Equation** - In private sector accounting equation of assets and liabilities takes the following form: Capital, Surplus, Other liabilities; Fixed assets, Current assets, Investments. But in case of public sector accounting equation takes the following form: Public sector account receivables-Payables.
- **System of Entry** - Under private sector accounting, double entry system is followed and journal, ledger, trial balance can be prepared. But in the case of public sector accounting, single entry system is followed because of its inability to prepare trial balance for absence of full information.
- **Depreciation** - In private sector accounts, depreciation is charged on income statement to arrive at true profit or loss, so that after the termination of the life of the asset they buy a new asset for replacing the old asset; and also to claim tax exemption from commercial profit. But in case of public sector accounting, there is no provision for providing depreciation. It lost its relevance in providing depreciation in absence of proper value of asset; but in certain cases like Transportation Company which charges depreciation for maintaining its assets.
- **Form of Accounts** - In public sector accounting, the form of accounts takes the following form: (i) Consolidated Fund; (ii) Public Fund and (iii) Contingency Fund. In case of Private sector accounting, concerns registered under the Companies Act shall follow the form prescribed under the Companies Act, 1956.

Q. 14. Balance Sheet of X Ltd. as at 31-3-08.

Rs. in lakhs			
Equity Share Capital (Rs.10 Share)	10	Land & Buildings	4
10% Pref. Share Capital	1	Plant and machinery	10
General Reserve	3	Investment in subsidiary shares	3
Investment Allowance Reserve	2	Stock	6
Capital Redemption Reserve	1	Debtors	6
P & L A/c	2	Less: Provision	<u>0.3</u>
12% Bonds	4	Marketable Securities	1.5
Creditors	3	Cash and bank	2
Tax provision	5	Prepaid expenses	0.3
Proposed equity Dividend	2	Discount on shares	0.5
	33		33

Projected Profit and Loss A/c for the year ended on 31-3-09

Rs. in lakhs			
To Opening Stock	6	By Sales	40
To Purchases	20	By Closing stock	8
To Wages	3	By Income from investment	1
To Factory expenses	5	By Profit on sale of plant (WDV 2)	1
To Admn. & Selling exp	2	By profit on sale trade investments (cost 1)	1
To Interest	0.48		
To Depreciation :			
Building	0.2		
Plant	1		
To Provision for doubtful debts	0.1		
To tax provision	6		
Add: past year's short provision	1		
To Pref. Dividend	0.1		
To proposed equity dividend	1.5		
To Prem. on redemption of Pref. Shares	0.1		
To General reserve	1		
To Investment allowance reserve	1.5		
To Capital redemption reserve	1		
To Discount on shares	0.1		
To Net Profit c/d	0.92		
	51		51

The following further data are also available.

1. Summary of fixed assets (Rs. lakhs) :

As at 31.3.2008	As at 31.3.2009	
Cost (Plant)	14	(Projected) 14.90
Accumulated depreciation	4	4.90
Cost (Building)	5	6.00
Accumulated depreciation	1	1.20

2. Preference share capital was redeemed at the beginning of 2008-09 at a premium of 10%.
3. Debtors velocity is five times and provision for doubtful debts is 5%.
4. Suppliers allow 72 days' credit on an average.
5. Wages and all expenses are paid 15 days in arrears.
6. Prepaid expenses as on 31-3-09 are expected to be Rs.0.50 lakhs.

Required: 1) Projected balanced sheet as at 31-3-09. (2) Funds flow statement. (3) Cash Flow statement (Indirect Method)

Answer 14.

1) PROJECTED BALANCE SHEET AS ON 31- 3 -2009

		Rs in Lakhs			Rs in Lakhs
Equity share capital		10.000	Land and buildings	6	
			(-) depreciation	<u>1.2</u>	4.800
10%pref share capital	1				
(-) redeemed	<u>1</u>		Plant and machinery	14.9	
			(-) depreciation	<u>4.9</u>	10.000
General reserve	3				
(+) provided	<u>1</u>	4.000	Investment in subsidiary	3	
			(-) sold	<u>1</u>	2.000
Investment allowance	2		Stock		8.000
(+) transfer	<u>1.5</u>	3.500			
Capital redemption reserve	1		Debtors	8	
(+) transfers	<u>1</u>	2.000	(-) RBD	<u>0.4</u>	7.600
P & L a/c	2				
(+) current year profit	<u>0.92</u>	2.920	Marketable securities		1.500
12% bonds		4.000	Cash and bank (b/f)		3.537
Creditors [20(72 / 360)]		4.000	Prepaid expenses		0.500
Tax provision		6.000	Discount on shares	0.5	
			(-) write off	<u>0.1</u>	0.400
Proposed equity dividend [10 x (15 / 100)]		1.500			
o/s wages and expenses		0.417			
		<u>38.337</u>			<u>38.337</u>

2) FUNDS FLOW STATEMENT

Sources		Applications	
Sale proceeds of plant	3.00	Increase in working capital	4.22
Sale proceeds of investments	2.00	Purchase of plant	3.00
FFO	11.42	Purchase of building	1.00
Income from investments	1.00	Redemption of PSC	1.10
		Tax paid	6.00
		Equity dividend paid	2.00
		Preference dividend paid	0.10
	17.42		17.42

3) CASH FLOW STATEMENT (INDIRECT METHOD)

<u>Cash from operational activities:</u>		
Cash from operations before tax	9.217	
(-) tax paid <u>6.000</u>		3.217
<u>Cash from investment activities:</u>		
Purchase of plant	(3)	
Purchase of building	(1)	
Sale of plant	3	
Sale proceeds of investments	2	
Income from investments	<u>1</u>	2.000
<u>Cash from financial activities:</u>		
Redemption of preference share capital	(1.1)	
Dividend paid : preference	0.1	
Equity	(2.0)	
Interest paid	<u>(0.48)</u>	(3.68)
Cash generated during the year		1.537
(+) opening balance		2.000
Closing cash balance		3.537

Working Notes No. 1

- Changes in working capital :

	2008	2009
<u>Current assets:</u>		
Stock	6.00	8.00
Debtors	5.70	7.60
Marketable securities	1.50	1.50
Cash and bank balance	2.00	3.53
Prepaid expenses	0.30	0.50
	15.5	21.13
<u>Current liabilities:</u>		
Creditors	3.00	4.00
o/s wages and expenses		0.41
	3.00	4.41
Working capital	12.5	16.72
Increase in working capital	<u>4.22</u>	

Working Notes No. 2

- Depreciation as per P&L a/c on building 0.20
On plant 1.00
1.20

Working Notes No. 3

- Plant:
Accumulated depreciation at the beginning 4.00
(+) provided 1.00
5.00
(-) accumulated depreciation on asset sold 0.10
4.90
- Purchase of building = Rs100000

Working Notes No. 4

- Plant at the beginning 14.00
(-) cost of plant sold 2.10
11.90
(+) purchases 3.00
14.90

Working Notes No. 5

Computation of FFO:

NP as per P & L a/c		0.92
(+) depreciation	1.20	
Tax provision	7.00	
Preference dividend	0.10	
Proposed equity dividend	1.50	
Premium on redemption of pref share capital	0.10	
Transfer to general reserve	1.00	
Investment allowance reserve	1.50	
Capital redemption reserve	1.00	
Discount on shares written off	<u>0.10</u>	<u>13.50</u>
		14.42
(-) income from investments	1.00	
Profit on sale of plant	1.00	
Profit on sale of trade investments	<u>1.00</u>	<u>3.00</u>
		<u>11.42</u>

Working Notes No. 6

• Cash from operations :

FFO		11.420
(+) interest	0.480	
Increase in creditors	1.000	
o/s wages	<u>0.417</u>	1.897
		<u>13.317</u>
(-) increase in stock	2.000	
Increase in debtors	1.900	
Increase in prepaid expenses	<u>0.200</u>	4.100
	9.217	

Q. 15. What is :

- (a) Common size statement?
 (b) Marginal Income statement?

Answer 15. (a)

Common size statement is a Financial Statement that displays all items as a percentages of a common base figure. This type of statement allows for easy analysis between companies or periods of a company. Formatting financial statements in this way reduces the bias that can occur while analyzing companies of differing sizes. It also allows for the analysis of time periods , revealing for example what percentage of sales is cost of goods value changed over time.

Answer 15. (b)

The marginal income statement shows the income which contributes to fixed expenses. The net income is thus referred to as contribution. In the statement the expenses are classified as fixed and variable.

Q. 16. Following is the Balance Sheet of D Company on March 31, 2008 :

D Company – Balance Sheet as on 31st March, 2008

Liabilities	Rs.	Assets	Rs.
Equity Shares of Rs. 10 each	10,000	Fixed Assets	1,10,000
Additional money received on shares	30,000	Accumulated depreciation	<u>30,000</u>
Retained earnings	13,250	Accounts receivable	3,000
Bonds	30,000	Inventories	11,000
Accounts payable	11,580	Prepaid expenses	230
		Cash	600
	<u>94,830</u>		<u>94,830</u>

The company did not buy or sell any fixed assets nor issued any shares during 2009. On March 31, 2009, the Company's Accountant obtained the following ratios and other data based on the 2009 operations :

Current ratio	2.0 times
Acid-test ratio	0.8 times
Turnover of average inventory	5.0 times
Turnover of average receivables	25.0 times
Equity ratio	58.8%
Debt ratio	41.2%
Times interest earned	6.0 times
Percentage of profit after tax on sales	7.0%
Gross margin percentage	52.0%
Book value per share	Rs. 58.80
Market value per share	Rs. 64.00
Earnings per share	Rs. 8.75
Dividend yield	5.0%
Corporate income Tax rate.	30%
Depreciation rate	4% on original cost

Required :

Use the above data to prepare the Company's Balance Sheet on March 31, 2009 and Income Statement for the year ending on March 31, 2009.

Answer 16.

Working notes :

- Book value per share = 58.80
Equity = capital + reserves = $58.8 \times 1000 = 58800$

- Long term debt $= 58,800 \times 41.2 / 58.8 = 41,200$
- Capital employed $= 100000 [58800 + 41200]$
- EPS $= \text{PAT} / \text{no of shares} = 8.75$
 $\text{PAT} = 8.75 \times 1000 = 8750$ (i.e. 70% of PBT)
 Tax rate @ 30%
 $\text{PBT} = 8750 \times 100/70 = 12,500$
 $\text{Sales} = 8750 / 0.07 = 125000$
 Gross profit $= 65000$ (i.e 52 % of sales)
 COGS $= 60,000$
- Interest coverage ratio $= (\text{PBT} + \text{Interest}) / \text{Interest} = 6$
 $12500 + I = 6I$
 Interest $= 2500$
- Turnover of average Inventory $= 5$
 $(\text{COGS} / \text{Average stock}) = 5$
 $\text{Average stock} = 60000 / 5 = 12000$
 $(11000 + \text{closing stock}) / 2 = 12000$
 Closing stock $= 13000$
- Turnover of average receivables $= \text{sales} / \text{average receivables} = 25$
 $\text{Average a/c receivables} = 125000 / 25 = 5000$
 $(3000 + \text{closing}) / 2 = 5000$
 Closing receivables $= 7000$
- Dividend Yield Ratio $= \text{Dividend per share} / \text{market price}$
 $= 0.05 = \text{DPS} / 64$
 $\text{DPS} = 3.20$
 Total dividend paid $= 3.20 \times 1000 = 3,200$
- Depreciation $= 110000 \times 4\% = 4400$

Income statement

Sales	125000
(-) COGS	60000
Gross profit	65000
(-) operating expenses	50000
Operating profit	15000
(-) Interest	2500
PBT	12500
(-) Provision for tax	3750
PAT	8750
(-) proposed dividend	3200
Profit retained	5550

Equity :

Capital		10000
Additional money		30000
Retained earnings	13250	
(+) current year	<u>5550</u>	18800
		<u>58800</u>

Balance sheet

Liabilities	Rs	Assets	Rs
Capital	10000	Fixed assets	110000
		(-) depreciation	<u>34400</u>
Additional capital	30000	Accounts receivable	7000
Retained profit	18800	Stock	13000
Bonds (debt)	41200	Prepaid expenses	16280
Accounts payable:		Cash	12520
Provision for tax	3750		
Proposed dividend	<u>3200</u>		
Creditors	17450		
	24400		
	<u>124400</u>		<u>124400</u>

- Capital Employed (Debt + Equity) = F.A + W.C
 $W.C = 1,00,000 - 75,600$
 $= 24,400$
- CA's - CL's = 24400
 Given Current Assets = 2 Current Liabilities
 $2 \text{ current liabilities} - \text{current liabilities} = 24400$
 $\text{Current liabilities} = 24400$
 $\text{Current assets} = 2 \times 24400$
 $= 48800$
- Liquid ratio = 0.8
 $\text{Quick assets} / \text{current liabilities} = 0.8$
 $\text{Quick assets} = 24400 \times 0.8 = 19520$ [Accounts receivables + cash]
 $\text{Cash} = 12520$

Q. 17. The following data is available for XYZ Ltd. :

Sales	Rs. 2,00,000
Less : Variable cost @30%	<u>60,000</u>
Contribution	1,40,000
Less : Fixed Cost	<u>1,00,000</u>
EBIT	40,000
Less : Interest	<u>5,000</u>
Profit before tax	<u>35,000</u>

Find out :

- (i) Using the concept of financial leverage, by what percentage will the taxable income increase if EBIT increase by 6%.
- (ii) Using the concept of operating leverage, by what percentage will EBIT increase if there is 10% increase in sales, and
- (iii) Using the concept of leverage, by what percentage will the taxable income increase if the sales increase by 6%. Also verify results in view of the above figures.

Answer 17.

- (i) Degree of financial leverage :

$$\text{DFL} = \text{EBIT/Profit before Tax} = 40,000/35,000 \\ = 1.15$$

If EBIT increase by 6%, the taxable income will increase by $1.15 \times 6 = 6.9\%$ and it may be verified as follows :

EBIT (after 6% increase)	Rs. 42,400
Less : Interest	<u>5,000</u>
Profit before Tax	<u>37,400</u>
Increase in taxable income is Rs. 2,400 <i>i.e.</i> , 6.9% of Rs. 35,000	

- (ii) Degree of operating leverage :

$$\text{DOL} = \text{Contribution/EBIT} = 1,40,000/40,000 \\ = 3.50$$

If Sales increase by 10%, the EBIT will increase by $3.50 \times 10 = 35\%$ and it may be verified as follows :

Sales (after 10% increase)	Rs. 2,20,000
Less : Variable Expenses @30%	<u>66,000</u>
Contribution	1,54,000
Less : Fixed cost	<u>1,00,000</u>
EBIT	<u>54,000</u>
Increase in EBIT is Rs. 14,000 <i>i.e.</i> , 35% of Rs. 40,000.	

- (iii) Degree of combined leverage :

$$\text{DCL} = \text{Contribution/Profit before Tax} = 1,40,000/35,000 \\ = 4$$

If Sales increases by 6%, the profit before tax will increase by $4 \times 6 = 24\%$ and it may be verified as follows :

Sales (after 6% increase)	Rs. 2,12,000
Less : Variable Expenses @ 30%	<u>63,600</u>
Contribution	1,48,400
Less : Fixed cost	<u>1,00,000</u>
EBIT	48,400
Less : Interest	<u>5,000</u>
Profit before Tax	<u>43,400</u>
Increase in Profit before tax is Rs. 8,400 <i>i.e.</i> , 24% of Rs. 35,000.	

Q. 18. State in brief the factors that influence investment decisions.

Answer 18.

The factors that influence the selection of investments are as follows:

- (i) Return : Investments like bank deposits, public deposits, bonds carry fixed rate of return payable periodically but are low in comparison to return one may get by investing in shares of companies. However these instruments carry higher risk than fixed income instruments. The risk-return trade-off will depend upon the temperament of the investor.
- (ii) Capital appreciation : Another important objective of investment is appreciation of capital invested over a period. The capital appreciation may be in following three ways:
 - (a) *Conservative growth* : Investors may prefer an investment portfolio that will result in long term capital appreciation.
 - (b) *Aggressive growth* : Investors seeking both short term and long term growth opts for aggressive growth in stocks.
 - (c) *Speculation* : Speculators have the objective of maximizing returns by buying and selling shares and securities within a very short time span from short time fluctuations. High rate of risk is involved with this objective.
- (iii) Type of return : The return expecting from investments may be in form of periodic cash receipts and capital gain.
- (iv) Safety and security of funds : Another important consideration is that investment should be capable of being redeemed as and when it falls due.
The investment should in other words remain in returnable position in cash or in kind.
- (v) Risk : The risk avoidance and risk minimization are important objectives of security analysis and portfolio management.
- (vi) Liquidity : The investor should keep in mind the degree of liquidity of proposed investments. The securities that ensure liquidity and marketability are more preferred.
- (vii) Tax considerations : Before selecting any securities, the investor should take into consideration the provisions of Income Tax, capital gains tax, wealth tax so as to minimize tax burden and avail all tax exemptions available to him.

Investment decisions involves selection of securities, and their continuous shifting in portfolio so as to optimize returns to suit the objectives of the investor.

Q. 19. Briefly explain the factors that influence the capital structure of a firm.

Answer 19.

Determinants of Capital Structure :

The following are the factors influencing the capital structure

The capital structure of a firm depends on a number of factors and these factors are of different importance. Moreover, the influence of individual factors of a firm changes over a period of time. Generally, the following factors should be considered while determining the capital structure of a company.

- (i) Trading on equity and EBIT-EPS analysis

The use of long term debt and preference share capital, which are fixed income bearing securities, along with equity share capital is called financial leverage or trading on equity. The use of long term debt capital increases the earnings per share as long as the return on investment is greater than the cost of debt.

Preference share capital will also result in increasing EPS. But the leverage effect is more pronounced in case of debt because of two reasons:

- a. Cost of debt is usually lower than the cost of preference share capital,
- b. The interest paid on debt is tax deductible.

Because of its effects on the earnings per share, financial leverage is one of the important considerations in planning the capital structure of a company, the companies with high level of Earnings Before Interest and Taxes (EBIT) can make profitable use of the high degree of leverage to increase the return on the shareholders equity. The EBIT-EPS analysis is one important tool in the hands of the financial manager to get an insight into the firms capital structure planning. He can analyse the possible fluctuations in EBIT and their impact on EPS under different financing plans.

Under favorable conditions, financial leverage increases EPS, however it can also increase financial risk to shareholders. Therefore, the firm should employ debt to such an extent that financial risk does not spoil the leverage effect.

(ii) Growth and stability of sales

This is another important factor which influences the capital structure of a firm. Stability of sales ensures stable earnings, so that the firm will not face any difficulty in meeting its fixed commitments of interest payment and repayment of debt. So the firm can raise a higher level of debt. In the same way, the rate of growth in sales also affects the capital structure decision. Usually, greater the rate of growth of sales, greater can be the use of the debt in the financing of a firm. On the other hand, the firm should be very careful in employing debt capital if its sales are highly fluctuating and declining.

(iii) Cost of Capital

Cost of capital is another important factor that should be kept in mind while designing the capital structure of a firm. The capital structure should be designed in such a way that the firm's overall cost of capital is the minimum. Cost of capital is the minimum return expected by its suppliers. Of all the sources of capital, equity capital is the costliest as the equity shareholders bear the highest risk. On the other hand, debt capital is the cheapest source because the interest is paid on it by the firm whether it makes profits or not. Moreover, interest on debt capital is tax deductible which makes it further cheaper. Preference share capital is also cheaper than equity capital as the dividends are paid at a fixed rate on preference shares. So, the overall cost of capital depends on the proportion in which the capital is mobilized from different sources of finance. Hence, capital structure should be designed carefully so that over all cost of capital is minimized.

(iv) Cash flow ability

A firm which has the ability of generating larger and stable cash inflows will be able to employ more debt capital. The firm has to meet fixed charges in the form of interest on debt capital, fixed preference dividend and the principal amount, when it becomes due. The firm can meet these fixed obligations only when it has adequate cash inflows. Whenever a firm wants to raise additional funds, it should estimate the future cash inflows to ensure the coverage of fixed charges. Fixed charges coverage ratio and interest coverage ratio are relevant for this purpose.

Here, one important point to be considered is that it is the cash flow ability of the firm and not the earning capacity alone (as indicated by EBIT) that should be taken into view while designing the capital structure. A firm may have adequate profits (EBIT) but it may not have adequate cash inflows to meet its fixed charges obligation. Some times, inadequacy of cash inflows may lead the firm to the point of insolvency, when it fails to meet its payment obligations in time. Therefore debt capacity of the firm is determined by its cash flow ability.

(v) Control

Some times, the designing of capital structure of a firm is influenced by the desire of the existing management to retain the control over the firm. Whenever additional funds are required, the management of the firm wants to raise the funds without any loss of control over the firm. If equity shares are issued for raising funds, the control of the existing shareholders is diluted. Because of this, they may raise the funds by issuing fixed charge bearing debt and preference share capital, as preference shareholders and debt holders do not have any voting right. The Debt financing is advisable from the point of view of control. But overdependence on debt capital may result in heavy burden of interest and fixed charges and may lead to liquidation of the company.

(vi) Flexibility

Flexibility means the firm's ability to adapt its capital structure to the needs of the changing conditions. Capital structure should be flexible enough to raise additional funds whenever required, without much delay and cost. The capital structure of the firm must be designed in such a way that it is possible to substitute one form of financing for another to economise the use of funds. Preference shares and debentures offer the highest flexibility in the capital structure, as they can be redeemed at the discretion of the firm.

(vii) Size of the firm

The size of the firm influences the capital structure design of a firm. Small companies find it very difficult to mobilise long-term debt, as they have to face higher rate of interest and inconvenient terms. Hence, small firms make their capital structure very inflexible and depend on share capital and retained earnings for their long-term funds. Since their capital structure is small, small firms cannot go to the capital market frequently for the issue of equity shares, as it carries a greater danger of loss of control over the firm to others. Hence, the small firms sometimes limit the growth of their business and any additional fund requirements met through retained earnings only. However, a large firm has relative flexibility in capital structure designing. It has the facility of obtaining long-term debt at relatively lower rate of interest and convenient terms. More, the large firms have relatively an easy access to the capital market.

(viii) Marketability and timing

Capital market conditions may change from time to time. Sometimes there may be depression and at other times there may be boom condition in the market. The firm should decide whether to go for equity issue or debt capital by taking market sentiments into consideration. In the case of depressed conditions in the share market, the firm should not issue equity shares but go for debt capital. On the other hand, under boom conditions, it becomes easy for the firm to mobilise funds by issuing equity shares.

The internal conditions of a firm may also determine the marketability of securities. For example, a highly levered firm may find it difficult to raise additional debt. In the same way, a firm may find it very difficult to mobilise funds by issuing any kind of security in the market merely because of its small size.

(ix) Floatation costs

Floatation costs are not a very significant factor in the determination of capital structure. These costs are incurred when the funds are raised externally. They include cost of the issue of prospectus, brokerage, commissions, etc. Generally, the cost of floatation for debt is less than for equity. So, there may be a temptation for debt capital. There will be no floatation cost for retained earnings. As is said earlier, floatation costs are not a significant factor except for small companies.

Floatation costs can be an important consideration in deciding the size of the issue of securities, because these costs as a percentage of funds raised will decline with the size of the issue. Hence, greater the size of the issue, more will be the savings in terms of floatation costs. However, a large issue affects the firm's financial flexibility.

(x) Purpose of financing

The purpose for which funds are raised should also be considered while determining the sources of capital structure. If funds are raised for productive purpose, debt capital is appropriate as the interest can be paid out of profits generated from the investment. But, if it is for unproductive purpose, equity should be preferred.

(xi) Legal requirements

The various guidelines issued by the Government from time to time regarding the issue of shares and debentures should be kept in mind while determining the capital structure of a firm. These legal restrictions are very significant as they give a framework within which capital structure decisions should be made.

Q. 20. Infoway Ltd. is considering the purchase of an automatic pack machine to replace the 2 machines which are currently used to pack Product X. The new machine would result in reduced labour costs because of the more automated nature of the process and in addition, would permit production levels to be increased by creating greater capacity at the packing stage with an anticipated rise in the demand for Product X, it has been estimated that the new machine will lead to increased profits in each of the next 3 years. Due to uncertainty in demand however, the annual cash flows (including savings) resulting from purchase of the new machine cannot be fixed with certainty and have therefore, been estimated probabilistically as follows :

Annual cost flows :

<i>Year 1</i>	<i>Probability</i>	<i>Year 2</i>	<i>Probability</i>	<i>Year 3</i>	<i>Probability</i>
10	0.3	10	0.1	10	0.3
15	0.4	20	0.2	20	0.5
20	0.3	30	0.4	30	0.2
		40	0.3		

Because of the overall uncertainty in the sales of Product X, it has been decided that only 3 years cash flows will be considered in deciding whether to purchase the new machine. After allowing for the scrap value for the existing machines, the net cost of the new machine will be 42,000. The effects of taxation should be ignored.

Required :

- Ignoring the time value of money, identify which combinations of annual cash flows will lead to an overall negative net cash flow, and determine the total probability of this occurring.
- On the basis of the average cost flow for each year, calculate the net present value of the new machine given that the company's cost of capital is 15%. Relevant discount factors are as follows :

<i>Year</i>	<i>Discount factor</i>
1	0.8696
2	0.7561
3.	0.6575

- Analyse the risk inherent in this situation by simulating the net present value calculation. On the basis of your simulation results what is the expected net present value and what is the probability of the new machine yielding a negative net present value?

	Set 1	Set 2	Set 3	Set 4	Set 5
Year 1	4	7	6	5	0
Year 2	2	4	8	0	1
Year 3	7	9	4	0	3

- a. If the total cash inflow in years 1, 2 and 3 is less than Rs. 42,000, the net cash flow will be negative. The combinations of cash flow which total less than Rs. 42,000 are given in table below :

Cash flow				(Rs. '000)
Year 1	Year 2	Year 3	Total	Probability
10	10	10	30	$0.3 \times 0.1 \times 0.3 = 0.009$
10	10	20	40	$0.3 \times 0.1 \times 0.5 = 0.015$
10	20	10	40	$0.3 \times 0.2 \times 0.3 = 0.018$
15	10	10	35	$0.4 \times 0.1 \times 0.3 = 0.012$
20	10	10	40	$0.3 \times 0.1 \times 0.3 = 0.009$
				Total = 0.063

The probability of a negative cash flow is 0.063

- b. Expected cash flow = $\sum [\text{Cash flow} \times \text{Probability}]$

			(Rs. '000)
Year 1 EV	$= (10 \times 0.3) + (15 \times 0.4) + (20 \times 0.3)$		15
Year 2 EV	$= (10 \times 0.1) + (20 \times 0.2) + (30 \times 0.4) + (40 \times 0.3)$		29
Year 3 EV	$= (10 \times 0.3) + (20 \times 0.5) + (30 \times 0.2)$		19

P.V. of the cash = $(15 \times 0.8696) + (29 \times 0.7561) + (19 \times 0.6575) = 47.4634$

The net present value of the new machine = $47,463 - 42,000 = \text{Rs. } 5,463$

- c. Allocate random number ranges to the cash flows for each year.

	Cashflow (R. '000)	Probability	Cumulative Probability	Random number
Year 1	10	0.3	.3	0-2
	15	0.4	.7	3-6
	20	0.3	1.0	7-9
Year 2	10	0.1	.1	0
	20	0.2	.3	1-2
	30	0.4	.7	3-6
	40	0.3	1.0	7-9
Year 3	10	0.3	.3	0-2
	20	0.5	.8	3-7
	30	0.2	1.0	8-9

We can now carry out the simulation.

(Rs. 000)

Year 1				Year 2			Year 3			Net PV
Number	Random	Cash	DCF	Random	Cash	DCF	Random	Cash	DCF	
1	4	15	13.044	2	20	15.122	7	20	13.150	-0.684
2	7	20	17.392	4	30	22.683	9	30	19.725	17.800
3	6	15	13.044	8	40	30.244	4	20	13.150	14.438
4	5	15	13.044	0	10	7.561	0	10	6.575	-14.820
5	0	10	8.696	1	20	15.122	3	20	13.150	-5.032
Total										11.702

The average net present value of the cash flow = $11,702/5 = \text{Rs. } 2,340.40$

Three out of the five simulations produced negative NPV, therefore, we estimate the probability of a negative NPV as $3/5=0.6$. Since the simulation is small, the estimates are unlikely to be reliable.

Q. 21. Write short note on :

- Preferred stock.
- Turnarounds.
- Valuation of warrant.

Answer 21. (a)

Preferred stock is a hybrid corporate security. It represents an equity interest in the issuing company. Unlike common stock, which pays a variable dividend depending on the corporation's earnings, preferred stock pays a fixed quarterly dividend based on a stated par value. For example, an XYZ corporation might issue preferred stock with a par value of Rs 50.00 and paying a quarterly 2% dividend. This would translate into a Rs 1.00 dividend paid each quarter.

Most corporations do not issue preferred shares. Those that do, often issue multiple classes of preferred shares over time. There are three naming conventions used for distinguishing between the different preferred issues of a corporation.

- (1) Annualized dividend: the shares in our example would be called XYZ Rs 4.00 preferred.
- (2) Annualized dividend yield: the shares in our example would be called XYZ 8% preferred.
- (3) A letter indicating the order of issuance : If the shares in our example were the corporation's third preferred issuance, they would be called XYZ preferred C.

Answer 21. (b)

Such form of venture capital financing involves medium to high risk and a time scale of three to five years. It involves buying the control of a sick company which required very specialized skills. It may require rescheduling of all the company's borrowings, change in management or even a change in ownership. A very active "hands on" approach is required in the initial crisis period where the venture capitalists may appoint its own chairman or nominate its directors on the board.

In a nutshell, venture capital firms finance both early and stage investment to maintain a balance between risk and profitability. Venture capitalists evaluate technology and study potential markets besides considering the capability of the promoter to implement the project while undertaking early stage investment. In later stage investment in new markets and track record of the business / entrepreneur is closely examined.

Answer 21. (c)

A warrant is an option to buy a stated number of a company's ordinary shares at a given exercise price on or before a specified maturity date. Thus, it is similar to an American call option. As a call option, its market value will be dependent on the market price of the ordinary share and the exercise price. The market price of a company's ordinary share is a function of its expected performance and that of the economy as a whole. Thus, a warrant's market price will in general depend on the issuing company's performance and the general economic conditions.

Theoretical Value

The theoretical value of a warrant can be found out if we know the ordinary share's market price and warrant's exercise price and exercise ratio. There exist two possibilities with regard to the ordinary share's price and the exercise price. Either the ordinary share's price is greater or lesser than the exercise price. If the share price is equal to or greater than the exercise price, then a warrant's theoretical value is given as follows :

Warrant's Theoretical value = (Share price – Exercise price) × Exercise ratio.

Premium

The difference between the warrant's market value and its theoretical value is called the premium. It can be found as follows :

Premium = $\frac{\text{Warrant's market value} - \text{warrant's theoretical value}}{\text{Warrant's theoretical value}}$

Q. 22. Modern Ltd. undertook a expansion project at an estimated project cost of Rs. 66 crores with an implementation period of 4 years. At the time of implementation the actual cost came to Rs. 96 crores.

Items of cost	Rs. in crores	
	Original project cost.	Fixed project cost.
1) Plant and Machinery:		
a) Imported	20	40
b) Indigenous	33	36
2) Building and structure	5	7
3) Interest Capitalised (during construction)	4	5
4) Pre-production Expenses	2	3
5) Margin money	2	5
	66	96

Following additional information are available :

(a) Imported equipment comprised of purchase from UK amounting to UK pound 50 lacs.

The foreign exchange rate was Rs. 20 to UK Pound at the time of calculating original project cost and was Rs. 50 to UK Pound at the time of actual procurement. However there was a decrease in duties/levies from 100% at the time of original cost estimate to 60% at the time of procurement.

(b) At the time of preparing original cost estimate the building and the structure cost was calculated as 20000 sq. mt. at average cost of Rs. 2500/- per sq. mt. On completion the actual area of construction came to 26000 sq. mt.

(c) Although the indigenous equipments all were ordered on firm cost basis , the increases occurred due to purchase of :

- | | |
|---|---------------------|
| (i) One additional Press Machine | Rs 1 crore |
| (ii) Installation of Pollution Control Equipment | Rs 1 crore |
| (iii) Additional price paid to one particular equipment supplier for change of design | <u>Rs. 1 crore.</u> |
| | <u>Rs. 3 crore</u> |

(d) Interest capitalized had changed as compared to original estimate because of additional cost of project.

(e) Pre- production expenses has increased by Rs. 1 crore due to additional Rupee cost in respect of payment to foreign technicians , deputed to supervise erection, in foreign currency (predetermined amount).

(f) Additional margin money requirement as compared to original estimate is due to increase in manufacturing cost due to increase in cost of inputs.

You are required to prepare a statement showing item wise cost variance statement analyzing the variances in suitable accepted heads.

Answer 22.

MODERN LTD.

Statement Showing Analysis Of Cost Variances

	Original Project Cost.	Final Project Cost	Var.	Escalation in cost	Change in scope /time overrun*	Ex. Rate Var.	Change in duties	Under Estimation	Addl. Items.
1. Plant and Machinery :									
a) Imported	20	40	20			15	5		
b) Indigenous	33	36	3	1	1				1
2. Building and structure	5	7	2	0.5				1.5	
3. Interest Capitalised (during construction)	4	5	1		**1				
4. Pre-production Expenses	2	3	1			1			
5. Margin money	2	5	3	3					
	66	96	30	4.5	2	16	5	1.5	1

* Time overrun cannot be calculated as problem is silent.

Alternatively it may be assumed that there is no time over-run.

** If it is assumed that there is no time overrun and no change in interest rates , the increase in interest capitalization is only due to various reasons as explained above.

Working Notes :

(a) Imported Plant and Machinery :

Total escalation in cost Rs. 20 Crores

	OriginalProject Cost (Rs. in crores)	FinalProjectCost (Rs. in crores)	Variance (Rs. in crores)
Cost U.K Pound			
50 lac@Rs. 20	10 @150%	25	15
Duties/ Levies 100%	10 @60%	15	5
	20	40	20

(b) Building and Structure :

Under estimation 6000 sq. mt. (26000-20000) @ Rs.2500 = Rs. 1.5 crs.

Escalation Cost 192/sq. mt. (2692*-2500) on 26000sq.mt. = Rs. 0.49 crs.

* 70000000/26000.

Q. 23. Write short notes on :

- (a) Zero date.
- (b) Prequalification of contractor.
- (c) Work breakdown structure.
- (d) Financial closure.

Answer 23. (a)

Zero Date: Zero Date of the project indicates the date from which the implementation of the project starts and fixation of zero date is the last important step in establishing a project. It is from this date the project has to be monitored to see whether the project is progressing as per schedule of implementation. This signals the effective start of the project and it is from this date the clock starts ticking. The project completion period will be counted from this point of time. The activities which have to be completed before zero date are known as pre-project activities.

Answer 23. (b)

Prequalification of a contractor : While awarding a contract, particularly of high value, it is customary to determine whether the contractor to whom the job is to be entrusted is capable of handling it. For this purpose, tender notifications are issued giving wide publicity calling for details such as name of the purchaser, outline of the project, enquiry issue and tender submission dates, instruction for applying for prequalification and submission date for the contractor's prequalification data.

A prequalification document is issued on request to a contractor seeking information on the organization, experience in the intended type of work, availability of resources like managerial, technical, labour and plant and also asks for financial statements. The data collected from contractors is evaluated for shortlisting. The contractors are short listed on basis of the following :

- (i) Similar experience earlier and his performance reports from previous assignments.
- (ii) Past turnover and present financial commitments to ensure fund availability for the project.
- (iii) Availability of necessary infrastructure for satisfactory execution of project.

The short listed contractors are informed about their selection and their confirmation obtained regarding their response to the tender.

Answer 23. (c)

Work breakdown structure – would break down the work according to various components and establish relationship connection between various components. Work can be broken down by a function orientated approach. The development of work breakdown structure consists of :

- defining the project to be performed and establishing their relationship with project end items and project objectives;
- establishing the framework for integrated cost; schedule planning and control;
- establishing the framework for summarizing the cost and schedule of status of project for progressively higher level of management. This serves the basis of pert network.

Answer 23. (d)

Financial Closure : The promoter of the project prepares the techno economic feasibility report (TEFR) on basis of which he obtains —

- all statutory sanction/permissions
- start negotiation with agencies who will finance the project.

When the agreement is reached between promoter and all financial agencies regarding mode of funding the project with terms and conditions including owner's own contribution it is called a financial closure. After this the project can be implemented physically by money support.

Q. 24. (a) The following data relate to Deficiency Ltd.

Year ending 31 st March	Net earning per share	Net dividend per share
2006	28	16.80
2007	27	17.60
2008	27	18.00
2009	26	19.00
2010	25	20.00

There are 10 lac equity shares issued and the majority of these shares are owned by private investors. There is no debt in the capital structure. The company has been experiencing difficult trading conditions over the past few years. In the current year, net earnings are likely to be Rs. 2 crores which will be just sufficient to pay a maintained dividend of Rs. 20 per share. Comment on the – (i) Dividend policy between 2005-2006 and 2009-2010; and (ii) Possible consequences for earnings.

(b) Star Ltd. projects the following figures for the financial year 2009-2010.

Net income after tax	= Rs. 30 crores.
Depreciation	= Rs. 50 crores.
Capital expenditure planned	= Rs. 80 crores.
Additional working capital needed	= Rs. 25 crores.
Principal repayment of debt	= Rs. crores.

As the firm has a very low debt equity ratio, it plans to increase its leverage by financing debt repayment and 30% of the planned capital expenditure and additional working capital needs by raising fresh debt.

Project the free cash flow to equity for 2009-2010.

Answer 24. (a)

- (i) Dividend policy : Deficiency Ltd.'s dividend policy has affected the pay-out ratios. Earnings per share and dividend per share have moved in opposite directions. The former has fallen by 10.7% and the latter has risen by 19.0%. The pay-out ratio has increased by 20% thereby reducing the retention ratio by equal proportion over the period, 2005-06 to 2009-10. Assuming no change in the capital structure in the mean time, both actual earnings and return on capital employed have gone down.
- (ii) Effect on earnings : It is probable the management hoped that upward trend in dividend per share would give company a better look though earnings were not retained for adequate investment needed for maintaining the rate of return, if not improving the rate. This may weaken the company in competitive business sphere and adversely affect its long term profitability.

Answer 24. (b)

Free Cash Flow to Equity (FCFE) = Net income after tax + depreciation (-) Capital expenditure and working capital + Proceeds from new debt issues.

New Debt = Principal repayment + 30% of capital expenditure and Working Capital

$$= \text{Rs. } 10 \text{ crores} + 0.3(80+25) \text{ crores}$$

$$= \text{Rs. } 41.5 \text{ crores.}$$

FCFE :

	Rs. in crores
Net income after tax	30
Add: Depreciation	50
Less: Capital exp.	-80
Less: Working Capital	-25
Less: Debt repayment	-10
Add: New Debt issued	41.5
FCFE	6.5

Q. 25. CHC Ltd. In UK will need to make a payment of \$250000 in six months time. It is currently 1st January. The company is considering the various choices it has, in order to hedge its transaction exposure.

Following market information is available :

	Exchange rate
£ spot rate	\$ 1.5617-1.5773
Six month £ forward rate	\$ 1.5455- 1.5609

Country	Money Market Rates	
	Borrow %	Deposit %
US \$	6	4.5
UK	7	5.5

Foreign currency option prices:

Exercise price	: \$1.70
Call option(June)	: \$ 0.037
Put option (June)	: \$ 0.096
Contract size (1 unit is £ 12500)	

Evaluate the hedging alternatives with necessary calculations and decide which of the same is most attractive to CHC Ltd.

Answer 25.

Total Exposure = \$ 250000

(i) Forward Market :

U K Company has a US \$ liability. To meet this \$ commitment , the Company needs to Buy Dollars. Return Rate = Bank's Bid for pounds.

Cost of forward cover (Cost of this liability) = $250000/1.5455 = £161759.95$

(ii) Money Market Hedging :

Borrow in UK @ Deposit in US. Repay 6 months later. If the money that has to be paid is \$ 250000, amount to be borrowed = $250000/(1+0.045/2)$

$$= \$244498.78$$

This amount has to be converted in £ to find out the amount to be borrowed in U. K.

= $£(244498.78/1.5617) = £156559.38$ (1.5617 is the spot applicable as we are borrowing today)

On maturity, \$ liability will be settled with maturity proceeds of US \$ asset. The principal amount of loan is £156559.38

The principal and interest at the end of six months is : $156559.38 + \text{Int. @7\% for 6 months} = (156559.38 + 5479.58) = £162038.96$

Total cost of Hedging through Money Market : £162038.96

iii) Currency Options :

Since U. K is importing, it needs to pay in dollars. It has to buy USD and has to sell £. Therefore the Company should £PUT OPTION.

Now each contract = $£12500 * \$1.70 = \21250

Maximum number of contract that can be purchased: = $250000/21250 = 11.76 = 12$ (approx)

Therefore exposure covered = $12 * £12500 = £150000$

Premium to be paid for the exposure = $12 * 0.096 * 12500$
= \$ 14400 .

Cost of Put option in £ = $£(14400 / 1.5617) = £9220.72$

Table showing cost of put option hedge :

Exposure covered	£ 150000
Premium for exposure	£ 9220.72
Subtotal of cost(A)	£ 159220.72
Less : excess \$ covered :	
\$ for 12 contracts = $12 \times 12500 \times 1.70 = \255000	
Liability amount = \$ 250000	
Excess = \$5000	
Excess in pounds equivalent at forward rate of 1.5455 (treated as future Spot rate) (B)	£ 3235.20
Net cost (A-B)	£ 155985.52

Thus Total Cash flow for the exposure = £155985.52

Decision: On comparing (i), (ii) and (iii) hedging alternatives , we observe that hedging through Foreign Currency option is the cheapest . Hence this is most attractive to CHC Ltd.

Q. 26. (a) Given the following quotes for per unit of each currency against US dollar, on two different dates :

British pound	1.5398	1.6385
Canadian dollar	0.6308	0.6591
EMU euro	0.9666	1.0835
Japanese yen	0.008273	0.008343
Mexican peso	0.1027	0.0917
Swedish krona	0.1033	0.1179

What is the rate of appreciation or depreciation of each currency over the period?

Q. 26. (b) Consider the following quotes.

Spot (Euro/Pound) = 1.6543/1.6557

Spot (Pound/NZ\$) = 0.2786/0.2800

1. Calculate the % spread on the Euro/Pound Rate
2. Calculate the % spread on the Pound / NZ \$ Rate
3. The maximum possible % spread on the cross rate between the Euro and the NZ \$

Answer 26. (a)

Pound	= $(\$1.6385 - \$1.5398) / \$1.5398 = +0.0641 = +6.41\%$.
Canadian dollar	= $(\$0.6591 - \$0.6308) / \$0.6308 = +0.0449 = +4.49\%$.
Euro	= $(\$1.0835 - \$0.9666) / \$0.9666 = +0.1209 = +12.09\%$.
Yen	= $(\$0.008343 - \$0.008273) / \$0.008273 = +0.0085 = +0.85\%$.
Peso	= $(\$0.0917 - \$0.1027) / \$0.1027 = -0.1071 = -10.71\%$.
Krona	= $(\$0.1179 - \$0.1033) / \$0.1033 = +0.1413 = +14.13\%$.

Answer 26. (b)

- a. The % spread on Euro/Pound $= \frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.085\%$
- b. The % spread on Pound/ NZ \$ $= \frac{0.2800 - 0.2786}{0.2786} \times 100 = 0.50\%$
- c. The maximum possible % spread on the cross rate between € & NZ \$ ® To find cross rate first.
 Given Spot (Euro/Pound) $= 1.6543/1.6557$
 Spot (Pound/NZ\$) $= 0.2786/0.2800$
 Spot (Euro/NZ\$) $= 0.2786 \times 1.6543 / 0.2800 \times 1.6557$
 $= 0.4609 / 0.4636$
- The maximum % spread on Euro/ NZ \$ $= \frac{0.4636 - 0.4609}{0.4609} \times 100 = 0.59\%$

Q. 27. (a) A spot rate is DM = \$0.3302-10. Another spot rate is FF= \$ 0.1180-90. Compute direct quote of FF in Germany.

Answer 27. (a)

To find Direct Quote of F in Germany. i.e. we need to find DM/F.

$$\text{\$1} = \text{DM } 1/0.3310/1/0.3302$$

$$\text{\$1} = \text{DM } 3.0211/3.0284$$

$$\text{Similarly } \$ 1 = \text{F } 8.4034/8.4746$$

$$\text{Therefore } \text{DM } 3.0211/3.0284 \hat{=} \text{F } 8.4034/8.4746$$

$$\text{Therefore } \text{DM/F} = (3.0211/8.4034)/(3.0284/8.4746)$$

$$\text{DM/F} = 0.3595/0.3574$$

Q. 27. (b) Following spot rates are available in the London market.

Currency	Buying rate	Selling Rate
French Francs	10.24	10.30
Swedish Kroner	13.50	13.75
Japanese Yen	170	175

Since these currencies are in short supply, you are required to operate through only sterling, which is quoted at Rs.75.25-35 in Mumbai.

- Compute the quantum of French Franc that you can buy for Rs. 1,20,000.
- What is the likely rate of Yen against Swedish Kroner.

Answer 27. (b)

- a. Given £1 = F10.24/10.30 and £1 = Rs.75.25/75.35

Using the general rules, we know

To find F/Rs. (because we have Rupees). Since we need to sell Rupees, we need only bid side of cross quote. (Rs./FF).

$$\text{Here we have } = \text{Bid}\left(\frac{\text{FF}}{\text{Rs.}}\right) = \text{Bid}\left(\frac{\text{FF}}{\text{£}}\right) \times \text{Bid}\left(\frac{\text{£}}{\text{Rs.}}\right)$$

We do not have a quote of £/Rs., instead we have Rs./£. Hence we use

$$\text{Bid}\left(\frac{\text{£}}{\text{Rs.}}\right) = \frac{1}{\text{Ask}\left(\frac{\text{Rs.}}{\text{£}}\right)}$$

Substituting, the values we get Bid rate for F/Rs. = $10.24/75.35 = 0.1359$

$$\text{Similarly } \text{Ask}\left(\frac{\text{FF}}{\text{Rs.}}\right) = \text{Ask}\left(\frac{\text{FF}}{\text{£}}\right) \times \frac{1}{\text{Bid}\left(\frac{\text{£}}{\text{Rs.}}\right)} = 10.30/75.25 = 0.1369$$

We get the quote as F/Rs. = $0.1359/0.1369$

For by selling As. 1,20,000 we get = $\text{F } 120000 \times 0.1359 = \text{F } 16308$

- b. $\text{£}1 = \text{Sw.Kr.}13.50/13.75$ (Sw.Kr./£)

$$\text{£}1 = \text{¥ } 170/175 \quad (\text{¥}/\text{£})$$

We need Sw.Kr./¥ rate.

$$\text{We know that } \text{Bid}\left(\frac{\text{Sw.Kr.}}{\text{¥}}\right) = \text{Bid}\left(\frac{\text{Sw.Kr.}}{\text{£}}\right) \times \text{Bid}\left(\frac{\text{£}}{\text{¥}}\right)$$

We do not have a quote of £/¥., instead we have ¥/£ Hence we use

$$\text{Bid}\left(\frac{\text{£}}{\text{¥}}\right) = \text{Ask}\left(\frac{\text{¥}}{\text{£}}\right) = \frac{1}{\text{Ask}\left(\frac{\text{£}}{\text{¥}}\right)}$$

Substituting, the values we get Bid rate for Sw.Kr./¥ = $13.50 \times 1/175 = 0.077$

Similarly

$$\text{Ask}\left(\frac{\text{Sw.Kr.}}{\text{¥}}\right) = \text{Ask}\left(\frac{\text{Sw.Kr.}}{\text{£}}\right) \times \frac{1}{\text{Bid}\left(\frac{\text{£}}{\text{¥}}\right)} = 13.75 \times 1/170 = 0.081$$

We get the quote as Sw.Kr./¥ = $0.077/0.081$

Q. 28. Write short notes on :

- (a) FCCB
- (b) DRs
- (c) IRG

Answer 28. (a)

FCCB means bonds issued in accordance with the relevant scheme and subscribed by a non-resident in foreign currency and convertible into depositary receipts or ordinary shares of the issuing company in any manner, either in whole or in part, on the basis of any equity related warrants attached to debt instruments. A company seeking to issue FCCBs should have consistent track record of good performance for a period of

three years. The FCCBs are unsecured; carry a fixed rate of interest and an option for conversion into affixed number of equity shares of the issuer company. Interest on redemption price (if conversion option is not exercised) is payable in dollars. Interest rates are very low by Indian domestic standards. FCCBs are denominated in any freely convertible foreign currency, generally in US \$.

FCCB has been popular with issuers. Local debt markets can be restrictive with comparatively short maturities and high interest rates. On the other hand, straight equity may cause a dilution in earnings, and certainly dilutions in control, which many share holders, especially major family share holders, would find unacceptable. Thus the low many coupon security which defers share holders dilution for several years in form of FCCB, can be alternative to issuer. Foreign investor also prefer FCCBs because of dollar denominated servicing, the conversion option and the arbitrage opportunities presented by conversion of the FCCBs into equity at discount on prevailing market price in India.

The major drawbacks of FCCBs are that the issuing company cannot plan capital structure as it is not assured of conversion of FCCBs. Moreover, the projections for cash outflows at the time of maturity cannot be made. In addition, FCCBs would result in creation of external debt for the country, as there would be foreign exchange outflow from the country if conversion option is not exercised by the investors. Some other regulations of FCCBs are

- (1) Interest payment on bond, until the conversion option is exercised, shall be subjected to TDS @ 10%
- (2) Conversion of FCCBs into shares shall not give rise to capital gain in India.
- (3) Transfer of FCCBs shall not give rise to capital gain in India.

Answer 28. (b)

A DR means any instrument in the form of depository receipt or certificate created by the overseas depository bank outside India and issued to non-resident investors against the issue of ordinary shares. In depository receipt, negotiable instrument evidencing a fixed number of equity shares of the issuing company generally denominated in U.S. \$. DRs are commonly used by the company which sells their securities in international market and expanding their share holdings abroad. These securities are listed and traded in international stock exchanges. These can be either American depository receipt (ADR) or global depository receipt (GDR). ADRs are issued in case the funds are raised through retail market in United States. In case of GDR issue, the invitation to participate in the issue cannot be extended to retail US investors.

While DR is denominated in any freely convertible foreign currency, generally in US dollars are issued by the depository in the international market, the underlying shares denominated in Indian rupees are issued in the domestic market by the issuing company. These shares are issued by the company are custodized in the home market with the local bank called custodian.

Answer 28. (c)

Interest Rate guarantees are true options in that they hedge the company against adverse interest rate movements, but allow it to take advantage of favorable movements. In taking a decision on whether to use IRG or otherwise, cost in respect of other alternatives, such as Futures Contracts, is also taken into account, and the most favorable alternative, which leads to the lowest cost, is chosen.

Q. 29. What do you understand by :

- (a) Currency boards.
- (b) Buyers' credit.
- (c) Interbank clearing house systems.

Answer 29. (a)

A currency board is a monetary institution that only issues currency to the extent it is fully backed by foreign reserves. Its major attributes are :

- a. An exchange rate that is fixed not just by policy but by law
- b. A reserve requirement to the extent that a country's reserves are equal to 100 percent of its notes and coins in circulation
- c. A self correcting balance of payments mechanism where a payment deficit automatically contracts the money supply and thus the amount of spending as well
- d. No central bank under a currency board system
- e. In addition to promoting price stability, a currency board also compels the government to follow a responsible fiscal policy.
- f. Countries like Mauritius, Hong Kong, Estonia, Argentina, Lithuania, Bulgaria and Bosnia are countries that have adopted currency board system.

Answer 29. (b)

If credit is granted to the buyer by a financial institution in the seller country or a financial institution in the buyer country, then it is called buyer's credit. The buyer enters into an agreement with the financial institutions to pay the supplier on cash basis or document basis and credit granted to the buyers for the purpose. The financial agreement between the buyers and the financial institution lays down the conditions to be fulfilled by the supplier before payment is made to him such as the form, values and maturity of promissory notes, the form in which the supplier must present the claims and bills to the financing bank, interest rate applicable, credit repayment terms, taxes, commission and other charges to be paid by the borrower, and the procedure to be followed in the case of defaults. Such credits are generally granted by the supplier country's financial institution like EXIM Bank for periods ranging from 5 to 10 years. The supplier in such cases gets the government and the central bank's clearance and for arranging this type of credit.

Answer 29. (c)

There are three key clearing house systems of interbank fund transfers which transfer funds between banks through wire and facilitate international trade.

- a. The clearinghouse interbank payments system(CHIPS) This is used to move dollars among New York offices of about 150 financial institutions that handle 95 percent of all foreign exchange trades and almost all Eurodollar transactions.
- b. The clearing house payments assistance system(CHPAS). This began its operations in 1983 and provides services similar to those of CHIPS. It is used to move funds among London offices of most financial institutions.
- c. The Society for Worldwide Interbank Financial Telecommunications (SWIFT): It is an interbank communication network which carries messages for financial transactions. It represents a common denominator in the international payment system and uses the latest communication technology. It has reduced multiplicity of formats used by banks in different parts of the world. International payments can be made very cheaply and efficiently.

Q. 30. (A) Choose the most appropriate correct out of four alternatives :

- (1) 'Straddle' as a type of option trading means :
 - (a) one call, one put, same security, same strike price and same period

- (b) one call, one put, same security, different strike price and same period
 - (c) one call, two puts, same security, same strike price and same period
 - (d) none of (a) , (b) , or (c)
- (2) When the payment due on a draft is made upon the presentation of the draft it is a
- (a) Clean draft
 - (b) Payment draft
 - (c) Sight draft
 - (d) Documentary draft.
- (3) ———— exposure requires various marketing, production and financial management strategies to cope with the risks.
- (a) Transaction
 - (b) Accounting
 - (c) Translation
 - (d) Economic
- (4) Euro-dollar deposit means :
- (a) dollar deposit outside USA
 - (b) dollar deposit outside the control of monetary authority
 - (c) dollar deposit in the US and outside US
 - (d) none of (a), (b), (c)
- (5) Buying and selling Call or Put option with different strike prices and expiration dates are called :
- (a) Butterfly spread
 - (b) Diagonal spread
 - (c) Vertical spread
 - (d) Short spread
- (6) Free cash flow means
- (a) cash is available for financing incremental working capital
 - (b) cash is available for financing additional investment in plant and machinery
 - (c) cash is available for meeting financial flows like debt servicing, dividend payment etc
 - (d) none of (a) , (b) , (c)
- (7) Factor that is irrelevant in determining the choice of debt-equity mix :
- (a) Taxation
 - (b) The nature of asset- base
 - (c) Industry norm
 - (d) Variability of cash flows
- (8) A Fund Flow shows the flow where there is a transaction between
- (a) A fixed asset and a current asset
 - (b) A fixed asset and a current liability

- (c) A fixed liability and a current liability
 - (d) A fixed liability and a current asset.
- (9) The quality of a formal process of risk management is generally accepted to be dependent upon
- (a) Management awareness
 - (b) A methodical approach
 - (c) Relying on past trends or events as a predictor of future events.
 - (d) The experience and personality of risk analysts leading the process.
- (10) The following are some of the recognized factors that prevent the purchasing power parity theory from determining exchange rates in practice :
- (a) Government intervention, directly in exchange markets or indirectly through trade restrictions
 - (b) Inflation rates differing in the two concerned countries
 - (c) Structural changes in the economies of the countries
 - (d) Speculation in the exchange market.
- (11) The slope of the security market line (SML) denotes
- (a) Market volatility
 - (b) Beta of the security
 - (c) The influence of unsystematic risk
 - (d) The risk premium required.
- (12) Product of beta square of the project and market variance gives us the
- (a) correlation between two projects
 - (b) standard deviation of a project
 - (c) unsystematic risk of a project
 - (d) systematic risk of a project
- (13) Which of the following statements is/are true regarding Earning Price Ratio approach?
- (a) The ratio assumes that the growth in EPS is constant.
 - (b) The results are accurate when the dividend pay-out ratio is 100%.
 - (c) The results are accurate when the retained earnings are expected to earn a rate of return more than cost of equity.
 - (d) None of (a), (b) or (c).
- (14) Which of the following statements is most correct?
- (a) The NPV method assumes that cash flows will be reinvested at the cost of capital, while IRR method assumes reinvestment at the IRR.
 - (b) The NPV method assumes that cash flows will be reinvested at the risk-free rate, while IRR method assumes reinvestment at IRR.
 - (c) The NPV method assumes that cash flows will be reinvested at cost of capital while IRR method assumes reinvestment at risk-free rate.
 - (d) The NPV doesnot consider the inflation premium.

Answer 30. (A)

- (1) — (a) one call, one put, same security, same strike price and same period
- (2) — (c) Sight draft
- (3) — (d) Economic
- (4) — (b) dollar deposit outside the control of monetary authority
- (5) — (b) Diagonal spread
- (6) — (c) cash is available for meeting financial flows like debt servicing, dividend payment etc
- (7) — (c) Industry norm
- (8) — (c) A fixed liability and a current liability
- (9) — (c) Relying on past trends or events as a predictor of future events.
- (10) — (b) Inflation rates differing in the two concerned countries
- (11) — (d) The risk premium required
- (12) — (d) systematic risk of a project
- (13) — (b) The results are accurate when the dividend pay-out ratio is 100%
- (14) — (a) The NPV method assumes that cash flows will be reinvested at the cost of capital, while IRR method assumes reinvestment at the IRR.

Q. 30. (B) State whether the following statements are TRUE or FALSE.

- (i) A firm's capital structure can never affect its free cash flows.
- (ii) Real options are most valuable when the underlying source of risk is very low.
- (iii) Feasibility report is used when a project is completed to ascertain its feasibility.
- (iv) Sensitivity Analysis is about estimating the impact of market fluctuations on project profitability.
- (v) Fair value of a share that is listed, is the price of the share in the stock exchange.
- (vi) Reviving a sick unit is far more risky than launching a new project.
- (vii) Hedging through forwards, futures, swaps is an example of risk transfer.
- (viii) The slope of security market line (SML) denotes market volatility.
- (ix) Pay off in a forward contract refers to the delivery price.
- (x) As far as inventories are concerned, drawing power under Cash Credit System considers only the paid and moving items of the stock.

Answer 30. (B)

- (i) False
- (ii) False
- (iii) False
- (iv) True
- (v) False
- (vi) True
- (vii) True
- (viii) False
- (ix) False
- (x) False