FINAL EXAMINATION

GROUP III

(SYLLABUS 2008)

SUGGESTED ANSWERS TO QUESTIONS

JUNE 2012

Paper- 12 : FINANCIAL MANAGEMENT & INTERNATIONAL FINANCE

Time Allowed : 3 Hours **Full Marks :** 100

The figures in the margin on the right side indicate full marks.

Please (i) Answer all bits of a question at one place.
(ii) Open a new page for answer to a new question.
(iii) Tick the question number answered on the front sheet of the answer-book.

Answer **Question No. 1** *from Part A which is compulsory and* **any five** *questions from Part B.*

PART - A (25 Marks)

Q. 1. (a) In each of the cases given below, one out of four answers is correct. Indicate the correct answer (= 1 mark) and give workings/reasons briefly in support of your answer (= 1 mark) :

(i) The capital of PQR Limited is as follows :

90% preference shares of ₹ 10 each	₹ 3,00,000
Equity shares of ₹ 10 each	₹ 8,00,000
Following further information is available :	
Profit after Tax	₹ 2,70,000
Equity Dividend paid	20%
The market price of equity shares	₹ 40 each

Then the EPS and PE ratio are :

(A) ₹ 3.12 and 10.80

(B) ₹ 3.33 and 10.34

(C) ₹ 4.51 and 12.56

(D) ₹ 3.04 and 13.16

(ii) A project has an equity beta of 1.2 and is going to be financed by 30% debt and 70% equity. Assume debt beta = 0, R_f = 10% and R_m = 18%. What is the required rate of return?

(A) 8.4%

(B) 18%

(C) 16.72%

(D) 10%

(iii) A Limited is presently selling 1,00,000 units of its products. The selling price per unit is ₹ 25 and variable cost per unit is ₹ 15. The fixed cost is ₹ 5,00,000. The financial breakeven point for the company is ₹ 1,50,000. What will be the percentage change in EBIT required to increase EPS by 20%?

(A) 10%

(B) 12%

(C) 14%

(D) 20%

(iv) Zoom Technologies Limited issued 1,00,000, 14% debentures of ₹ 100 each, redeemable after 5 years at ₹ 110 each. The commission payable to under writers and brokers is 10%. The after-tax cost of debt, assuming a tax rate of 45%, will be

(A) 15.1%

(B) 12.54%

(C) 10%

(D) 11.7%

(v) An investor wrote a naked call option. The premium was ₹ 2.50 per share and the market price and exercise price of the share are ₹ 37 and ₹ 41 respectively. The contract being for 100 shares, what is the amount of margin under First Method, that is required to be deposited with the clearing house?

(A) ₹ 590

(B) ₹ 250

(C) ₹ 740

(D) ₹ 400

(vi) According to Gordon's dividend capitalisation model, if the share price of a firm is ₹ 43, its dividend pay-out ratio is 60%, cost of equity is 9%, ROI is 12% and the number of shares are 12,000, what will be the net profit of the firm?

(A) ₹ 15,480

(B) ₹ 23,220

(C) ₹ 36,120

(D) ₹ 54,180

(vii) You are a forex dealer in India. Rates of rupee and Euro in the international market are US $ 0.01962905 and US $ 1.335603 respectively. What will be your direct quote of ∈ (euro) to your customer?

(A) ₹ 69.5900

(B) ₹ 68.0420

(C) ₹ 65.1010

(D) ₹ 70.9050

(viii) The interest rate in the United States is 5%, in Japan, the comparable rate is 1.5%. The spot rate for the yen is $ 0.012067821. If the interest rate parity holds, what is the 90-day forward rate on the Japanese yen?

(A) $ 0.01248

(B) $ 0.01359

(C) $ 0.01350

(D) $ 0.01200

(ix) An investor buys a call option contract for a premium of ₹ 200. The exercise price is ₹ 20 and the current market price of the share is ₹ 17. If the share price after three months reaches ₹ 25, what is the profit made by the option holder on exercising the option? Contract is for 100 shares. Ignore the transaction charges.

(A) ₹ 200

(B) ₹ 250

(C) ₹ 300

(D) ₹ 350 [2×9=18]

(b) State if each of the following sentences is T (= true) or F (= false) :

(i) The amount of cheques issued by a company not yet paid out is referred to as net float.

(ii) Annual capital charge method is used for evaluating projects having different life spans.

(iii) According to Modigliani and Miller Theory on dividends, dividend pay-out ratio is irrelevant for all firms.

(iv) Simulation is done for capturing the different possible outcomes and determining the probability of a particular event happening.

(v) A call option is the right to sell, whereas a put option is a right to buy.

(vi) An acquisition of a business by using equity fund and a small amount of debt is known as leveraged buy out.

(vii) Global Depository Receipts are issued to investors in India, who want to subscribe to shares of foreign companies. [1×7=7]

Answer 1. (a)

(i) (D) — ₹ 3.04 and 13.16

$$EPS = \frac{PAT - Preference\ dividend}{No.\ of\ Equity\ Shares}$$

$$= \frac{2,70,000 - 27,000}{80,000} = ₹\ 3.04$$

$$PE\ Ratio = \frac{Market\ Price}{EPS} = \frac{40}{3.04} = 13.16$$

(ii) (C) — 16.72%

$$Beta\ of\ portfolio = \left[\beta_{equity} \times E/(D+E)\right] + \left[\beta_{debt} \times D/(D+E)\right]$$

$$= (1.2 \times 0.70) + (0 \times 0.30) = 0.84$$

$$\therefore\ Required\ Rate\ of\ Return = R_f + \beta_p\,(R_m - R_f)$$

$$= 10\% + 0.84\ (18\% - 10\%)$$

$$= 16.72\%$$

(iii) (C) — 14%

$$Degree\ of\ Financial\ Leverage\ (DFL) = \frac{EBIT}{EBIT - \left(I + \frac{D_P}{1-t}\right)}$$

The Financial Break even point

$$= I + \frac{D_P}{1-t} = 1,50,000\ (given)$$

EBIT = Q (S–V) – F = 1,00,000 (25 – 15) – 5,00,000

= ₹ 5,00,000

$$DFL = \frac{SL}{SL - 1.50L} = 1.43$$

$$DFL = \frac{Required\ Change\ in\ EPS}{Change\ in\ EBIT}\ \text{ or } 1.43 = \frac{20\%}{Change\ in\ EBIT}$$

$\therefore$ % Change in EBIT for 20% EPS increase

= 20%/1.43 = 13.99% or 14%

(iv) (D) — 11.7%

$$K_d = \frac{I(1-t) + \left(\frac{F-P}{n}\right)}{\left(\frac{F+P}{2}\right)} = \frac{14(1-0.45) + \frac{110-(100-10)}{5}}{\left(\frac{110+90}{2}\right)} = 11.7\%$$

(v) (A) — ₹ 590

Margin = (Option premium × 100) + {100 × 0.20 (market value of the share)} – {100 × (Exercise price – market price)}

= (2.50 × 100) + {100 × (0.20 × 37)} – 100 × (41 – 37) = ₹ 590

(vi) (C) — ₹ 36120 :

Gordon's equity capitalisation model :

P = E (1–b)/(K–br) or 43 = E (0.6)/{0.09 – (0.4 × 0.12)}

or E = 3.01.

Net Profit = EPS × No. of shares = 3.01 × 12000 = **36120**

(vii) (B) — ₹ 68.0420 :

₹ /US $ = 1/0.01962905 = ₹ 50.9449

Now, US $ / ∈ = 1.335603

∴ The direct quote of ∈ in India will be —

₹ / ∈ = ₹ /US$ × US$/ ∈ = ₹ 50.9449 × 1.335603 = ₹ **68.0420**

(viii) (A) — $ 0.01248 :

As per IRPT, the 90 day forward rate on the yen should be equal to —

$ 0.012067821 [(1+0.05/4) ÷ (1+0.015/4)]

= $ 0.012067821 [(1.05/4) ÷ (1.015/4)]

= $ 0.012067821 × 1.034482759 = $ 0.0124839

or $ **0.01248**

(ix) (C) — ₹ 300 :

Assuming in call option, the total outgo = Premium + Exercise Price = ₹ 200 + (₹ 20×100)

= ₹ 2,200.

After 3 months, if the shareprice is ₹ 2,500, the net profit = ₹ 2,500 – ₹ 2,200 = ₹ **300**.

Answer 1. (b)

(i) **False.** Net float is the total amount of float in a bank account. It is calculated by subtracting the disbursement float money spent but not yet taken out of the account from the collection float money deposited but not yet cleared. The net float, when added to or subtracted from the previous balance, shows how much money is in the bank account. The net float is important when an account holder deal primarily in cheques.

(ii) **True.** Annual capital charge provided basis of comparing projects whose life span are otherwise different.

(iii) **True.** According to MM approach it is earning potentiality and investment policy of firm rather than pattern of distribution of earning that affects value of firm.

(iv) **True.** **Simulation** is the imitation of the operation of a real-world process or system over time. The act of simulating something first requires that a model be developed; this model represents the key characteristics or behaviours of the selected physical or abstract system or process. The model represents the system itself, whereas the simulation represents the operation of the system over time.

(v) **False.** Call Options give the option buyer the right to buy the underlying asset. Put Options give the option buyer the right to sell the underlying asset.

(vi) **False.** In a leveraged buyout, a company is acquired by a specialized investment firm using a relatively small portion of equity and a relatively large portion of outside debt financing.

(vii) **False.** Global Depository Receipts financial instruments used by private markets to raise capital denominated in either U.S. dollars or euros.

PART - B (75 Marks for any five questions)

Q. 2. (a) "Cost of capital is used by a company as a minimum benchmark for its yield". —Comment. Also enumerate the applications of cost of capital in managerial decisions. [5]

(b) National Textile Corporation belongs to a risk-class for which the appropriate PE ratio is 15. It currently has 75,000 outstanding shares selling at ₹ 150 each. The corporation is contemplating declaration of dividend @ ₹ 12 per share at the end of the current fiscal year, which has just started. Given the assumption of Modigliani-Miller approach, answer the following questions :

(i) What will be the price of the share at the end of the year, if:

(a) dividend is not declared?

(b) dividend is declared?

(ii) Assuming that the corporation pays dividend, has net income of ₹ 7,50,000 and makes new invesments of ₹ 15,00,000 during the period, how many new shares must be issued?

(iii) What would be the current value of the corporation, if:

(a) divident is declared?

(b) dividend is not declared? [3+3+4=10]

Answer 2. (a)

The **cost of capital** is a term used in the field of financial investment to refer to the cost of a company's funds (both debt and equity), or, from an investor's point of view "the shareholder's required return on a portfolio of all the company's existing securities". It is used to evaluate new projects of a company as it is the minimum return that investors expect for providing capital to the company, thus setting a benchmark that a new project has to meet.

For an investment to be worthwhile, the expected return on capital must be greater than the cost of capital. The cost of capital is the rate of return that capital could be expected to earn in an alternative investment of equivalent risk. If a project is of similar risk to a company's average business activities it is reasonable to use the company's average cost of capital as a basis for the evaluation. A company's securities typically include both debt and equity, one must therefore calculate both the cost of debt and the cost of equity to determine a company's cost of capital. However, a rate of return larger than the cost of capital is usually required.

IMPORTANCE OF COST OF CAPITAL IN DECISION MAKING

The cost of capital is critically important in finance. It plays a crucial role in the capital budgeting decision. The progressive management always takes notice of the cost of capital while taking a financial decision. The concept is quite relevant in the managerial decisions as :

(a) It may be used as the measuring road for adopting an investment proposal. The firm, naturally, will choose the project which gives a satisfactory return on investment which would in no case be less than the cost of capital incurred for its financing. In various methods of capital budgeting, cost of capital is the key factor in deciding the project out of various proposals pending before the management. It measures the financial performance and determines the acceptability of all investment opportunities.

(b) It is significant in designing the firm's capital structure. A capable financial executive always keeps an eye on capital market fluctuations and tries to achieve the sound and economical capital structure for the firm. He may try to substitute the various methods of finance in an attempt to minimize the cost of capital so as to increase the market price and the earning per share.

(c) A capable financial executive must have knowledge of the fluctuations in the capital market and should analyze the rate of interest on loans and normal dividend rates in the market from time to time. Whenever company requires additional finance, he may have a better choice of the source of finance which bears the minimum cost of capital.

(d) It can be used to evaluate the financial performance of the top executives. Evaluation of the financial performance will involve a comparison of actual profitabilities of the projects and taken with the projected overall cost of capital and an appraisal of the actual cost incurred in raising the required fund.

(e) It is also of vital importance in regulated industries, including electric, gas, telephone, railroad, airline and trucking companies. In essence, a regulatory commission seeks to measure a utility cost of capital, then taxes prices so that the company will just earn adequate rate of return. If the estimates are too low, then the company will not be able to attract sufficient capital to meet long run demand for service, and the public will suffer. If this estimate is too high customer will pay too much for service.

(f) It is also important in many others areas of decision making, such as dividend decisions, working capital policy etc.

Answer 2. (b)

Given,

P/E Ratio = 15

n = 75000 shares

P_0 = 150

D_1 = ₹ 12

E = ₹ 7,50,000

I (Investment) = ₹ 15,00,000

K_e = 1/(P/E Ratio).

(i) (a) If dividend not declared :

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

$D_1 = 0$, $\therefore$ $P_0 = P_1/(1+k_e)$; or, $P_1 = P_0 (1 + K_e)$

$\therefore$ $P_1 = 150 \left(1+\frac{1}{15}\right)$; or P_1 = ₹ **160**.

(b) If dividend declared :

Then, $P_0 = (D_1 + P_1)/(1+K_e)$

or, $150 = (12 + P_1)/\left(1+\frac{1}{15}\right)$

or, $12 + P_1 = 150\times\frac{16}{15}$; or $P_1 = 160 - 12 = ₹\ \mathbf{148}$.

(ii) If the Corpn. pays Dividend :

$P_1 = ₹\ 148$; No. of shares to be issued : $\Delta n = (I - E + nD_1)/P_1$

$\therefore$ No. of New shares, $\Delta n = \frac{(15,00,000 - 7,50,000 + 75,000\times 12)}{148}$

or, $\Delta n = \frac{7,50,000 + 9,00,000}{148}$; or, $\Delta n = \frac{16,50,000}{148}$ = 11,148.65 shares.

(iii) Value of the Corpn.

(a) If dividend is paid —

$V = (n + \Delta n)P_1$ = (75,000 + 11,148.65) × 148

= ₹ (86,148.65) × 148

= ₹ 1,27,50,000.

(b) If dividend not paid —

$V = (n + \Delta n)P_1$ Hence, $\Delta n = \frac{15,00,000 - 7,50,000}{160}$

$= \frac{7,50,000}{160}$ = 4,687.5

$\therefore\ V = (75,000 + 4,687.5)P_1$

= (79,687.5) P_1 = 79,687.5 × ₹ 160 = ₹ 1,27,50,000.

Q. 3. (a) The turnover of Bengal Polymers Limited is ₹ 60 lakhs of which 80% is on credit. Debtors are allowed one month to clear off the dues. A factor is willing to advance 90% of the bills raised on credit for a fee of 2% per month plus a commission of 4% on the total amount of debts. The company, as a result of this arrangement, is likely to save ₹ 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 interest rate of 18% per annum. However, its processing fee will be 2% on the debts.

Advise management of the company whether it should avail services of a factor or accept offer from the bank. [10]

(b) Explain briefly what is meant by Capital Asset Pricing Model (CAPM)? [5]

Answer 3. (a)

Alternative - I : (Factoring)

Calculation of Effective Cost of Factoring :

Sale for the year	₹ 60,00,000
Credit sales	₹ 48,00,000
Receivables = (48,00,000 ÷ 12) × 1 month =	₹ 4,00,000
Cost of factoring per month :	
Fee (interest) = ₹ 4,00,000 × 90% × 2% =	₹ 7,200
Commission = 4,00,000 × 4% =	₹ 16,000
Cost per month = ₹ (7,200 + 16,000) =	₹ 23,200
Calculation of Savings :	
Management cost = (₹ 21,600/12) =	(₹ 1,800)
Bad Debts = (₹ 4,00,000 × 1%) =	(₹ 4,000)
Total cost of Factoring = ₹ (23,200 – 1,800 – 4,000) =	₹ **17,400**

Alternative - II : (Bill Discounting)

Cost of Bill Discounting :	
Average debtors = ₹ 4,00,000 per month	
Processing Fee = (₹ 4,00,000 × 2%) =	₹ 8,000
Interest / Discount = ₹ 4,00,000 @ 90% × 18% (1/12) =	₹ 5,400
Loss due to bad debts p.a. =	₹ 4,000
Administration cost =	₹ 1,800
Total cost of Bill Discounting =	₹ **19,200**

Conclusion : As the factoring cost is less than the Bill Discounting cost the Company may opt Factoring but not Bill Discounting.

Answer 3. (b)

In finance, the **capital asset pricing model (CAPM)** is used to determine a theoretically appropriate required rate of return of an asset, if that asset is to be added to an already well-diversified portfolio, given that asset's non-diversifiable risk. The model takes into account the asset's sensitivity to non-diversifiable risk (also known as systematic risk or market risk), often represented by the quantity beta (β) in the financial industry, as well as the expected return of the market and the expected return of a theoretical risk-free asset.

Capital Asset Pricing Model (CAPM).

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

where:

- E (R_i) is the expected return on the capital asset
- R_f is the risk-free rate of interest such as interest arising from government bonds
- β_i (the *beta*) is the sensitivity of the expected excess asset returns to the expected excess market returns, or also

$$\beta_i = \frac{\text{Cov}(R_i, R_m)}{\text{Var}(R_m)},$$

- E (R_m) is the expected return of the market
- $[E(R_m) - R_f]$ is sometimes known as the market premium (the difference between the expected market rate of return and the risk-free rate of return).
- $[E(R_i) - R_f]$ also known as the *risk premium*

The general idea behind CAPM is that investors need to be compensated in two ways: time value of money and risk. The time value of money is represented by the risk-free (rf) rate in the formula and compensates the investors for placing money in any investment over a period of time. The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) that compares the returns of the asset to the market over a period of time and to the market premium $(R_m - r_f)$.

The assumptions underlying the CAPM's development are as follows :

1. All investors focus on a single holding period, and they seek to maximize the expected utility of their terminal wealth by choosing among alternative portfolios on the basis of each portfolio's expected return and standard deviation.
2. All investors can borrow or lend an unlimited amount at a given risk-free rate of interest and there are no restrictions on short sales of any assets.
3. All investors have identical estimated of the expected returns, variances, and covariances among all assets (that is, investors have homogeneous expectations).
4. All assets are perfectly divisible and perfectly liquid (that is, marketable at the going price).
5. There are no transaction costs.
6. There are no taxes.
7. All investors are price takers (that is, all investors assume that their own buying and selling activity will not affect stock prices).
8. The quantities of all assets are given and fixed.

Q. 4. (a) Precision Instruments Limited manufactures ball bearings. The company plans to add some more product lines and so, it has decided to acquire a machine costing ₹ 50 lakhs having a useful life 5 years, with salvage value of ₹ 10 lakhs. Consider short-term capital loss/gain for income tax. The full purchase value of the machine can be financed by bank loan at the rate of 10% interest per annum repayable in five equal instalments falling due at the end of each year. Alternatively, the machine can be procured on a 5 year lease, year-end lease rentals being ₹ 12.50 lakhs per annum. The company follows the written down value method of depreciation at the rate of 25 per cent. The company is in 30% tax bracket.

Required :

(i) What is the present value (PV) of cash outflow for each of these financing alternatives using the after-tax cost of debt?

(ii) Which of the two alternatives is preferable?

Note : Extracts from the PV TABLE :

(i) PVIF at 7% for 0 to 5 years are :

1.000, 0.9346, 0.8734, 0.8163, 0.7629, 0.7130

(ii) PVIF at 10% for 0 to 5 years are :

1.000, 0.9091, 0.8264, 0.7513, 0.6830, 0.6209

(iii) PVIFA for 5 years at 10% = 3.7908

(iv) PVIFA for 5 years at 7% = 4.1002 [10]

(b) Briefly explain the salient features of non-recourse project financing. [5]

Answer 4. (a)

Workings :

(1) Annual instalment payment :

$$\frac{₹\ 50\ \text{Lakhs}}{\text{PVIFA for 5 yrs. @10\%}} = \frac{₹\ 50\ \text{Lakhs}}{3.7908} = ₹\ 13,18,983.$$

(2) Year-wise Depreciations :

Year	Opening WDV (₹)	Depreciation (₹)	Closing WDV (₹)
1	50,00,000	12,50,000	37,50,000
2	37,50,000	9,37,500	28,12,500
3	28,12,500	7,03,125	21,09,375
4	21,09,375	5,27,344	15,82,031
5	15,82,031	3,95,508	11,86,523

(3) Year-wise Debt payments :

Year end	Opening balance (₹)	Interest @ 10% (₹)	Repayment (₹)	Principal amount (₹)	Closing balance (₹)
1	50,00,000	5,00,000	13,18,983	8,18,983	41,81,017
2	41,81,017	4,18,102	13,18,983	9,00,881	32,80,136
3	32,80,136	3,28,014	13,18,983	9,90,969	22,89,167
4	22,89,167	2,28,917	13,18,983	10,90,066	11,99,101
5	11,99,101	*1,19,882	13,18,983	11,99,101	–

* Balancing figure

Discounting factor :

Cost of finance 10% – Tax 30% = 7%.

(i) Present Value (PV) of Cash Outflows under BUYING (Debt) Alternative :

Year end	Loan Instalment (₹)	Tax Shield on Interest (₹)	Tax Shield on Depreciation (₹)	Net Cash Outflow (₹)	PVIF @ 7% (₹)	Total Present Value (₹)
1	13,18,983	1,50,000	3,75,000	7,93,983	0.9346	7,42,056
2	13,18,983	1,25,430	2,81,250	9,12,303	0.8734	7,96,805
3	13,18,983	98,404	2,10,937	10,09,642	0.8163	8,24,171
4	13,18,983	68,675	1,58,203	10,92,105	0.7629	8,33,167
5	13,18,983	35,964	1,18,652	11,64,367	0.7130	8,30,194
				Total PV of ouflows		40,26,393

Total PV. of outflows	40,26,393
Less : PV of Salvage Value (₹ 10 Lakhs × 0.7130)	(–) 7,13,000
	33,13,393
Less : PV of Tax Savings on Short-term Capital Loss {(11,86,523 – 10,00,000) × 30% × 0.7130}	(–) 39,897
NPV of Cash Outflows :	32,73,496

(ii) Present Value (PV) of Cash Outflows under LEASING alternative :

Year end	Lease Rent after Taxes (₹)	PVIFA at 7%	Total Present Value (PV) (₹)
1-5	12,50,000		
Less: 30% tax	(–) 3,75,000		
	8,75,000	4.1002	35,87,675

Advise : Precision Instruments Ltd. is advised to borrow and buy. Not to go for Leasing as :

NPV of Cash Outflows (BUYING) < PV. of Cash Outflows (Leasing)

Answer 4. (b)

Non-recourse Project Financing :

Project financing is different from conventional direct financing.

In relation to conventional direct financing, lenders to the firm look at the firm's asset portfolio that generates cash flows to service their loans. The assets and their financing are integrated into the firm's asset and liability portfolios. Often, such loans are not secured by any pledge or collateral security.

The critical distinguishing feature of a project financing is that the project is a distinct legal entity; project assets, project related contracts, and project cash flow are segregated to substantial degree from the sponsoring entity. The financing structure is designed to allocated financial returns and risks efficiently than a conventional financial structure.

In a project financing, the sponsors provide at most, limited recourse to cash flows from their other assets that are not part of the project. Also, they typically pledge the project assets, but none of their other assets, to secure the project loans. Project financing arrangements invariably involve strong contractual relationships among multiple parties, and maintaining them at a reasonable cost. Project financing will usually be cost-effective than convential direct financing when —

(1) project financing permits a higher degree of leverage than the sponsors could achieve on their own; and

(2) the increase in leverage produces tax shield benefits sufficient to offset the higher cost of debt funds, resulting in a lower overall cost of capital for the project.

Q. 5. (a) The Balance Sheet of Southern Real Estates Limited as on 31st March, 2011 and 31st March, 2012 are given below :

(₹) (₹)

LiabiLities	*31.3.2011*	*31.3.2012*	*Assets*	*31.3.2011*	*31.3.2012*
Share Capital (ordinary, of ₹ 100 each)	1,97,000	2,30,000	Fixed Assets less depreciation	3,60,000	6,00,000
Reserves and surplus	1,48,000	3,12,000	Investments	11,250	10,000
Secured loan from Bank	87,000	-	Stock-in-trade	1,42,500	1,96,000
Sundry Creditors	2,51,450	2,98,000	Sundry Debtors	90,700	1,40,000
Provision for Taxation	65,000	1,72,000	Cash at Bank	1,30,000	45,000
			Prepaid Expenses	14,000	21,000
	7,48,450	10,12,000		7,48,450	10,12,000

From the records, the following further information is available :

(i) Reserves and surplus position :

	₹
Balance as on 1st April, 2011	1,48,000
+ Net profit for the year	1,98,500
	3,46,500
– Dividend	34,500
	3,12,000

(ii) The accumulated depreciation on fixed assets as on 31.3.2012 was ₹ 1,80,000 and as on 31.3.2011 was ₹ 1,60,000. Machinery costing ₹ 20,000, which was depreciated to the extent of 50% was discarded and written off in 2012. Depreciation for the year ending 31.3.2012 amounted to ₹ 30,000.

(iii) Investment costing ₹ 5,000 was sold during the year ending 31.3.2012 for ₹ 4,800 and Government Securities of the face value of ₹ 4,000 were purchased during the year for ₹ 3,750.

You are required to prepare the following :

(i) Statement showing changes in working capital.

(ii) Statement of sources and application of funds. [10]

(b) Explain the following terms in one or two sentences :

(i) Gross working capital

(ii) Net working capital

(iii) Working capital gap. [1.5+1.5+2=5]

Answer 5. (a)

Statement of Changes in Working Capital :

₹

	2011	2012	Increase in WC	Decrease in WC
Current Assets :				
Cash at Bank	1,30,000	45,000	–	85,000
Sundry debtors	90,700	1,40,000	49,300	–
Stock in trade	1,42,500	1,96,000	53,500	
Prepaid Expenses	14,000	21,000	7,000	–
	3,77,200	4,02,000		
Current Liabilties :				
Sundry Creditors	2,51,450	2,98,000	–	46,550
Provision for taxation	65,000	1,72,000	–	1,07,000
	3,16,450	4,70,000		
Working Capital (CA-CL)	60,750	(–) 68,000		
Net Decrease in WC		1,28,750	1,28,750	
	60,750	60,750	2,38,550	2,38,550

Statement of Sources and Application of Funds :

Sources	₹	Applications	₹
Issue of share capital	33,000	Repayment of secured loan	87,000
Sale of Investments	4,800	Purchae of Fixed Assets	2,80,000
Funds from operations	2,38,700	Purchase of Investments	3,750
Net decrease in WC	1,28,750	Dividend paid	34,500
	4,05,250		4,05,250

Fixed Assets A/c (At cost)

Dr. ***Cr.***

Particulras	Amount ₹	Particulars	Amount ₹
To Balance b/d (3,60,000 + 1,60,000)	5,20,000	By Depreciation (on asset discarded)	10,000
To Cash Purchase (balancing figure)	2,80,000	By Adjusted P/L A/c (Loss)	10,000
		By Balance c/d (6,00,000+1,80,000)	7,80,000
	8,00,000		8,00,000

Provision for Depreciation A/c

Dr. ***Cr.***

Particulras	Amount ₹	Particulars	Amount ₹
To Fixed Assets A/c (on Fixed Asset discarded)	10,000	By Balance b/d	1,60,000
		By Adjusted P/L A/c	30,000
To Balance c/d	1,80,000		
	1,90,000		1,90,000

Investment A/c

Dr. ***Cr.***

Particulras	Amount ₹	Particulars	Amount ₹
To Balance b/d	11,250	By Cash (Sales)	4,800
To Cash (Purchase)	3,750	By Adjusted P/L A/c (Loss)	200
		By Balance c/d	10,000
	15,000		15,000

Adjusted Profit and Loss A/c

Dr. ***Cr.***

Particulras	Amount ₹	Particulars	Amount ₹
To Loss on discarded FA	10,000	By Balance b/d	1,48,000
To Provision for Depreciation	30,000	By Funds from Operations	2,38,700
To Loss on Sale of Investment	200	(Balancing figure)	
To Dividend paid	34,500		
To Balance c/d	3,12,000		
	3,86,700		3,86,700

Answer 5. (b)

Gross Working Capital - Cash and short-term assets expected to be converted to cash within a year. Businesses use the calculation of gross working capital to measure cash flow. Gross working capital does not account for current liabilities, but is simply the measure of total cash and cash equivalent on hand. Gross working capital tends not to add much to the business' assets, but helps keep it running on a day-to-day basis.

Net Working Capital (which is also known as "Working Capital" or the initials "NWC") is a measurement of the operating liquidity available for a company to use in developing and growing its business. The working capital can be calculated very simply by subtracting a company's total current liabilities from its total current assets.

Working Capital Gap —is the gap between total working capital required and total funds brought on and can be termed as total current assets less current liabilities excluding short term funds available from Banks/F.I.

Q. 6. (a) The following information is available for a call option :

Time to Expiration : 3 months
Risk-free Rate : 8%
Exercise Price : ∈ 65
Stock Price : ∈ 70
Call Price : ∈ 12

You are required to calculate value of put option. [4]

(b) An Indian importer has to settle a bill for US $ 1,50,000. There are two options available:

Option A-Pay immediately by drawing from the bank overdraft account bearing interest @ 15% p.a.

Option B-Pay after 3 months with interest @ 5% p.a. in foreign currency.

The exchange rates are as under :

Spot (₹/US $) = ₹ 50.50/ ₹ 51.00

3 months (₹/US $) = ₹ 51.50/ ₹ 52.00

Evaluate the two options and advise. [7]

(c) The total asset turnover ratio and total asset to net-worth ratio of ABC Limited are 1.75 and 2 respectively. If the net-profit margin of the company is 8%, what will be its Return On Equity (ROE)? [2]

(d) The degree of operating leverage of XYZ Limited is increased by 30%. What will be the change in the degree of total leverage, if the degree of financial leverage is decreased by 20%? [2]

Answer 6. (a)

According to Put-call Parity theorem

$$P_0 = C_0 + \frac{E}{e^{rt}} - S_o$$

$$= \in 12 + \frac{65}{e^{.08\times 25}} - \in 70$$

$$= \in 12 + \frac{65}{1.0202} - \in 70$$

$$= \in 12 + 63.71 - \in 70 = \in 5.71$$

Answer 6. (b)

Option A — Pay immediately

		US $	₹
(i)	Bill value converted to Ind ₹	1,50,000 × ₹ 51	76,50,000
(ii)	Interest for 3 months on Bank overdraft (3/12)		2,86,875
			79,36,875

Option B — Pay after 3 months with Interest to foreign Bank

(i)	Bill value	1,50,000
(ii)	Interest @ 5% for 3 months 3/12	1,875
		1,51,875
	converted to Ind ₹ at forward rate ₹ 52	78,97,500

Option B is better as outflow in Rupees is less.

Answer 6. (c)

The ROE = (PAT / Sales) × (Sales / TA × TA/Net-worth)

= 0.08 × 1.75 × 2.00 = 28% (i.e. 0.28)

Answer 6. (d)

The DTL is defined as the product between the DOL & DFL.

The resultant DTL = 1.30 DOL × 0.8 DFL = 1.04 DTL

Therefore, DTL will increase by 4% (i.e. 1.04 – 1.00)

Q. 7. (a) How are currency swaps different from interest swaps? Explain. [5]

(b) On September 1, 2011, the ₹/$ spot rate in New York is ₹ 51.90 and December £ futures are trading at $ 1.5950.

The ₹/£ spot rate on that day is ₹ 78.90.

Neel Corporation has a 3-month sterling receivable of £ 1,00,000.

You are given that the standard size of sterling futures contracts is £ 62,500 and Neel Corporation decides to hedge its risk by trading in two sterling futures contracts. By December 1, 2011 the spot dollar has appreciated to ₹ 52.80, while the spot pound sterling has depreciated to ₹ 78.20. If December futures are trading at £ 1.5720, what is the profit or loss incurred by Neel Corporation? [10]

Answer 7. (a)

Currency Swaps differ from interest swap in th sense that currency swaps involves as follows :

(i) An exchange of payments in two currencies.

(ii) Not only exchange of interest, but also exchange of principal.

(iii) It is not off balance sheet instruments.

(iv) The agreed exchange rate need not be related to the market.

(v) Currency swaps can also use two fixed interest rates for the two different currencies - different from the interest rate swaps.

(vi) The principal amount can be exchanged even at the start of the swap.

Answer 7. (b)

The $/£ quote on August 1 is computed below :

$$\$/£ = \frac{1}{₹/\$} \times \frac{₹/\$}{1} = \frac{1}{51.90} \times \frac{78.9}{1} = \$\ 1.5202$$

The $/£ quote on December 1 is computed below :

$/£ = 1/52.80 × 78.20 = $ 1.4811

The pound sterling has depreciated against dollar on the spot market.

Then notional loss in the spot market

= [100,000 (1.5202 – 1.4811)]

= $ 3910

Since we are dealing with receivables, hedging will be done by selling two standard sterling futures contracts

Gain by trading in futures

= $ [2 × 62,500 × (1.5950 – 1.5720)]

= $ 2875

∴ Net loss to Neel Corporation = $ (3910 – 2875)

= $ 1035.

Q. 8. Write short notes on (*any three*) : [5×3=15]

(a) Asset Securitisation;

(b) Foreign Collaboration;

(c) Money Market Hedge;

(d) Sensitivity Analysis.

Answer 8. (a)

Asset Securitisation :

Asset seciritisation is the process by which non-tradable assets are converted into tradable securities. Assets like mortages, loans receivables, cash credit receivables, etc on the balance sheet of user-originator (say, Housing Finance Co.) are packaged, underwritten and sold in the form of securities to investors through carefully structured process. These securities may be in the form of commercial paper, certificate of deposits, notes, etc.

Process :

(i) The originator owing the assets, indentifies a pool of homogenous assets, which are held for securitisation.

(ii) The pool of assets is then transferred to a different entity, known as Special Purpose Vehicles (SPV).

(iii) The SPV issues the securities backed by the pool of assets. They also indicate the liability for the cash consideration received from the investors.

(iv) The consideration is remitted by the SPV to the originator, which then replaces the securitised assets from its balance sheet with the consideration received.

Answer 8. (b)

Foreign Collaboration :

In a project environment, foreign collaborations are normally entered into by industries where a sophisticated technology (not available indigenously) is required or where upgradation of existing technology is necessary, or where import of technology and capital is involved (eg. petro-chemicals). Foreign collaborations could be purely technical collaboration where only transfer of technology is involved, or technical-cum-financial collaboration involving both transfer of technology and capital. All proposals for setting up foreign collaboration require prior approval of the Government. Govt's approval is guided by 'need and appropriateness of technology' to the growth of the industry.

Foreign collaboration projects have separate tax implications. Various aspects of Foreign collaboration project could be broadly classified into three sections, viz. —

(1) Outline of Govt. Policy Framework (reg. need of foreign technology/royalty payments/collaboration agreement/Foreign investment);

(2) Procedural aspects of setting up a project; and

(3) Tax aspects of foreign collaboration.

Answer 8. (c)

Money Market Hedge is of two types:

(i) Hedging payables and

(ii) Hedging receivables.

Hedging payables involve the following steps:

Borrow funds in home currency; Use them to purchase the foreign currency; Invest the foreign currency for the period after which the foreign currency payable due; Use the proceeds to make the payment; Repay the borrowed amount together with interest.

Hedging receivable involves the following steps :

Borrow funds in the foreign currency for the period after which the receivable is due; The amount to be borrowed should be equal to the amount of the receivable as discounted by the prevailing rate of interest; Convert the borrowed amount into home currency and use it till the receIvable arrives; and If the home currency funds cannot be used gainfully in the enterprise itself, invest them to earn interest.

Answer 8. (d)

Sensitivity Analysis (SA) : It refers to studying the impact of changes on one or more variables on the results, which can either be NPV or IRR or EPS etc. It means that value of NPV/IRR/EPS is sensitive to all these variables. This will help in understanding the critical variables on which the results depend. It is also one way of understanding the risks related to a project or policy. The SA deals with the consideration of sensitivity of NPV in relation to different variables contributing to the NPV. The sensitivity analysis can be performed a model of projected cash flows for capital budgeting. It helps to decision making to the management. When a project proves to be very sensitive to certain aspects such as raw material price, power cost, selling price etc. the management has to provide adequate weightage to these aspects before the investment decision is frozen. The sensitivity of a capital budgeting proposal, in general, may be analyzed with reference to; (i) level of revenues; (ii) the expected growth rate in revenues; (iii) the operating margin; (iv) the working capital requirements as a percentage of revenue, etc., with each such variables, the NPV and IRR of a proposal may be ascertained by keeping the other variables unchanged.