FINAL EXAMINATION – GROUP-III
(SYLLABUS - 2008)

SUGGESTED ANSWERS TO QUESTIONS

December 2008

PAPER - P12 : FINANCIAL MANAGEMENT AND INTERNATIONAL FINANCE

Answer Question No. 1(Part A) which is compulsory and five questions from Part B.

Part A (25 Marks)

Question:

1.(A) In each of the questions given below, one out of four is correct. Indicate the correct answer (1 mark each).

(i) Which of the following statements is most correct?

(a) Risk refers to the chance that some unfavorable event will occur and a probability distribution is completely described by a listing of the likelihood of unfavorable events.

(b) Portfolio diversification reduces the variability of returns on an individual stock.

(c) When company – specific risk has been diversified, the inherent risk that remains is market risk which is constant for all the securities in the market.

(d) The SML relates required returns to firms 'market risk. The slope and intercept of this line cannot be controlled by the finance manager.

(ii) Stock A and Stock B each has an expected return of 15 per cent., a standard deviation of 20 per cent. and a beta of 1.2. The returns of the two stocks are not perfectly correlated. The correlation coefficient is 0.6. You have put. together a portfolio which is 50 per cent. Stock A and 50 per cent. Stock A and 50 per cent Stock B. Which of the following statement is most correct?

(a) The portfolio's expected return is 15 per cent.

(b) The portfolio's beta is less than 1.2.

(c) The portfolio's standard deviation is 20 per cent.

(d) Statements (a) and (b) are correct.

(iii) Stock A has a beta of 1.5 and Stock B has a beta of 0.5. Which of the following statements must be true about these securities? (Assume market equilibrium.)

(a) When held in isolation. Stock A has greater risk than Stock B.

(b) Stock B would be a more desirable addition to a portfolio than stock A.

(c) Stock A would be a more desirable addition to a portfolio than stock B.

(d) The expected return on Stock A will be greater than that on Stock B.

(iv) There are call options on the common stock of XYZ Corporation. Which of the following describes best the factors affecting the value of these call options?

(a) The price of the call options is likely to rise, if XYZ's stock price rises.

(b) The higher the strike price on the call option, the higher the call option price.

(c) Assuming the same strike price, a call option which expires in one month will sell for a higher price than a call option which expires in three months.

(d) All of the answers above are correct.

(v) Essar Steel Ltd. uses the CAPM to calculate the cost of equity capital. The company's capital structure consists of common stock, preferred stock, and debt. Which of the following events will reduce the company's WACC?

(a) A reduction in the market-risk premium;

(b) An increase in the risk-free rate ;

(c) An increase in the company's beta;

(d) An increase in expected inflation.

(vi) Assume that a project has normal cash flows i.e., the initial cash flow is negative and all other cash flows are positive. Which of the following statements is most correct?

(a) All else equal, a project's IRR increases as the cost of capital declines.

(b) All else equal, a project's NPV increases as the cost of capital declines.

(c) All else equal, a project's MIRR is unaffected by changes in the cost of capital.

(d) Answer (a) and (b) are correct.

(vii) 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 the IRR method assumes reinvestment at the IRR

(b) The NPV method assumes that cash flows will be reinvested at the risk-free rate, while the IRR method assumes reinvestment at the IRR.

(c) The NPV method assumes that cash flows will be reinvested at the cost of capital, while the IRR method assumes reinvestment at the risk-free rate.

(d) The NPV method does not consider the inflation premium.

(viii) You have determined the profitability of a planned project by finding the present value of all the cash flows from the project. Which of the following would cause the project to look more appealing in terms of the present value of those cash flows?

(a) The discount rate decreases.

(b) The cash flows are extended over a longer period of time but the total amount of the cash flows remains the same.

(c) The discount rate increases.

(d) Answer (b) and (c) are correct.

(ix) Which of the following could explain why a business might choose to organize as a corporation rather than as a sole proprietorship or as a partnership?

(a) Corporations generally face fewer regulations.

(b) Corporations generally face lower taxes.

(c) Corporations generally find it easier to raise capital.

(d) Corporations enjoy unlimited liability.

(x) The Bombay Stock Exchange is primarily

(a) a secondary market.

(b) an organized auction market.

(c) an over-the-counter market.

(d) Answer (a) and (b) are correct.

10 x 1

(B) For each of the questions given below, one out of four answers is correct. Indicate the correct answer (1mark each) and give your workings / reasons briefly (1 mark).

(i) The spot USD/Yen = 190 yen and one year forward rate of USD/Yen = 210 Yen. The prime rate in US is 15%. What should the Japanese prime rate be?

(a) 20.11%

(b) 25.22%

(c) 27.11%

(d) 29.55%

(ii) The spot USD/INR = 43.70 and six-month forward premium is 40 paise (=Rs.0.40). The annualized forward premium will be

(a) 1.5%

(b) 1.25%

(c) 1.86%

(d) 2.5%

(iii) Tata Ltd. has a target capital structure of 40% debt and 60% equity for one of its new subsidiaries. The yield to maturity of the company's outstanding bonds is 9% and the tax rate is 40%. The CFO has calculated the company's WACC as 9.96%. The company's equity cost of capital is

(a) 8%

(b) 10%

(c) 13%

(d) 15%

(iv) Airtel Communications is trying to estimate the first-year operating cash flow (at t = 1) for a proposed project. The finance staff has collected the following information:

Projected sales	=	Rs. 1 crore
Operating costs	=	Rs. 70 lakhs (not including depreciation)
Depreciation	=	Rs. 20 lakhs
Interest expense	=	Rs. 20 lakhs

The company faces a 40% tax rate. The project's operating cash flow for the year (t =1) is

(a) Rs. 35 lakhs

(b) Rs. 26 lakhs

(c) Rs. 22 lakhs

(d) None of the above

(v) Reliance Ltd. has an ROA of 10% and a Profit Margin of 2%. The company's total Asset Turnover is

(a) 3%

(b) 4%

(c) 5%

(d) 6% 5×2

(C) State whether each of the following statements is true or false:

(i) Real options are most valuable when the underlying source of risk is very low.

(ii) Given two mutually-exclusive projects and a zero cost of capital, the payback method and the NPV method of selecting investments will always lead to the same decision on which project to undertake.

(iii) A firm's capital structure can never affect its free cash flows.

(iv) In a world with no taxes, MM Hypothesis shows that the capital structure of a firm does not affect the value of the firm. However, when taxes are considered, MM Hypothesis shows a positive relationship between debt and value.

(v) The major advantage of a regular partnership or a corporation as a form of business is that both offer limited liability to their owners, whereas a proprietorship does not. 5×1

Answer to Question No. 1(A):

(i) →d

(ii) →a

(iii) →d

(iv) →a

(v) →a

(vi) →b

(vii) →a

(viii) →a

(ix) →c

(x) →d

Answer to Question No. 1(B):

(i) →C : 27.11%

From Interest parity, (¥210/$)/(¥190/$) = (1+i¥)/1.15 ==> i¥ = 27.11%.

(ii) →C: 1.86%

Annualised Premium = (Premium x 100 x 365)/(Spot x n)

(where n = 180)

= (0.40 x 100 x 365)/(43.70 x 180)

= 1.86%

(iii) →C: 13%

40% Debt; 60% Equity; r_d = 9%; T = 40%; WACC = 9.96%; r_s = ?

$WACC = (W_d)(r_d)(1-T)+ (W_{ce})(r_s)$

$9.96\% = (0.4)(9\%)(1 - 0.4)+ (0.6)r_s$

$9.96\% = 2.16\% + 0.6r_s$

$7.8\% = 0.6r_s$

$r_s = 13\%$.

(iv) → b: Rs. 26 lakhs.

Operating Cash Flow: (t = 1)

Sales revenue	10,000,000
Operating costs	7,000,000
Depreciation	2,000,000
Operating income before taxes	1,000,000
Taxes (40%)	400,000
Operating income after taxes	600,000
Add back depreciation	2,000,000
Operating cash flow	2,600,000

(v) → C: 5%

ROA = 10% Profit Margin = 2% S/ TA = ?

ROA = NI/TA; PM = NI/S

ROA = PM x S/TA

NI/TA = NI/ S x S/ TA

10% = 2% x S/ TA

S/TA = 5%

Answer to Question No. 1(C):

(i) → False

(ii) → False

(iii) → False

(iv) → True

(v) → False

PART B (75 Marks)

Question:

2.(a) Complete the balance sheet and sales information in the table below for Godrej Industries using the following financial data:

Debt Ratio : 50%

Quick Ratio : 0.80X

Total Assets Turnover : 1.5X

Days Sales Outstanding : 36.5 days

Gross Profit Margin on sales : 25%

Inventory Turnover Ratio : 5X

(All calculations are based on 365 days.)

Liabilities	*Rs.*	*Assets*	*Rs.*
Accounts Payable		Cash	
Long-term Debt	60,000	Accounts Receivable	
Common Stock		Inventories	
Retained Earnings	97,500	Fixed Assets	
Total Liabilities & Equity		Total Assets	300,000
Sales		Cost of Goods Sold	

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(b) Profit Margin and Turnover Ratio vary from one industry to another. What differences would you expect to find between a grocery chain such as Big Bazaar and a steel company such as Tata Steel? 5

Answer to Question No. 2(a):

1. Debt = (0.50)(Total Assets) = (0.50)(300,000) = Rs. 150,000
2. Accounts payable = Debt–Long-term Debt = 150000-60000 = Rs. 90,000
3. Common Stock = (Total liabilities–Debt - Retained Earnings and Equity)
   = 300,000-150,000-97,500 = Rs. 52,500
4. Sales = (1.5)(Total Assets) = (1.5)(300,000) = Rs. 450,000
5. Inventory = Sales/5 = 450,000/5 = Rs. 90,000
6. Account Receivables = (Sales/365)(DSO)
   = (450,000/365) x (36.5) = Rs. 45,000.
7. Cash + Accounts Receivables = 0.80 x Accounts Payables.
   Or, Cash = 0.80 x 90,000 – 45,000 = Rs. 27,000.
8. Fixed Assets = Total Assets – (Cash + Accounts Receivables + Inventories)
   = 300,000 –(27,000+45,000+90,000)
   = Rs. 138,000
9. Cost of Goods Sold = Sales x (1-0.25)
   = 450,000 x 0.75 = Rs. 337,500.

BALANCE SHEET.

Liabilities	Rs.	Assets	Rs.
Accounts Payable (2)	90000	Cash (7)	27000
Long-Term Debt	60000	Accounts Receivables (6)	45000
Common Stock (3)	52500	Inventories (5)	90000
Retained Earnings	97500	Fixed Assets (8)	138000
Total liabilities and Equity	300000	Total Assets	300000
Sales (4)	450000	Cost of Goods Sold (9)	337500

Answer to Question No. 2(b):

Differences in the amounts of assets necessary to generate a rupee of sales cause Asset Turnover Ratios to vary among industries. For example, a steel company needs a greater number of rupees in assets to produce a rupee in sales than does a grocery store chain. Also, profit margins and Turnover Ratios may vary due to differences in the amount of expenses incurred to produce sales. For example, one would expect a grocery store chain to spend more per rupee of sales than does a steel company. Often, a large turnover will be associated with a low profit margin and vice versa.

Question:

3. (a) The Hyundai Instrument Corporation is trying to determine the effect of its Inventory Turnover Ratio and Days Sales Outstanding (DSO) on its cash-flow cycle. The Hyundai Corporation's sales last year (all on credit) were Rs. 150,000 and it earned a net profit of 6%. Its Inventory Turnover Ratio was 5 and DSO was 36.5 days. The firm had fixed assets totalling Rs. 35,000. Hyundai had fixed assets totalling Rs. 35,000 and its payable deferral period is 40 days. Calculate Hyundai Instrument Corporation's

(i) Cash Conversion Cycle.

(ii) Total Asset Turnover and ROA, if it holds negligible amounts of cash and marketable securities.

(iii) Cash Conversion Cycle, Total Asset Turnover and Return on Assets, if its Inventory Turnover can be raised to 7.3. 2+4+4

(b) Portfolio A consists of a one –year zero-coupon bond with a face value of Rs. 2,000 and a 10-year zero-coupon bond with a face value of Rs. 6,000. Portfolio B consists of a 5.95-year zero-coupon bond with a face value of Rs. 5,000. The current yield on all bonds is 10% per annum. Show, using continuous or discrete compounding, that both the portfolios have the same duration and that the percentage changes in the value of the two portfolios for a 0.1% per annum increase in yields are the same.

Year	PVIF for 10%	PVIF for 10.1%
1	0.9090	0.9082
5.95	0.5671	0.5641
10	0.3856	0.3820

5

Answer to Question No. 3(a):

HYUNDAI INSTRUMENT CORPORATION:

(i) Inventory conversion period = 365/ Inventory Turnover Ratio

= 365/5 = 73 days

Receivable collection period = DSO = 36.5 days

Cash Conversion Cycle	=	Inventory Conversion Period	+	Receivable Collection Period	—	Payable Deferral Period

= 73 + 36.5 – 40 = 69.5 days

(ii) Total assets = Inventory + Receivable + Fixed assets
= 150000/5 + [(150,000/365) x 36.5] + 35,000
= 30,000 + 15,000 + 35,000 = 80,000 (Rs)

Total Assets Turnover = Sales/Total Assets
= 150,000/80,000 = 1.875

ROA = Profit margin x Total Assets Turnover
= 0.06 x 1.875 = 0.1125 = 11.25%.

(iii) Inventory Conversion Period = 365/7.3 = 50 days
Cash Conversion Cycle = 50 + 36.5 – 40 = 46.5 days
Total Assets = Inventory + Receivable + Fixed Assets
= 150,000/7.3 + 15,000+35,000
= 20,548 + 15,000 + 35,000 = 70,548

Total Assets Turnover = 150,000/70,548 = 2.1262
ROA = 9,000/70,548 = 12.76%

Answer to Question No. 3(b):

$$\text{Duration} = \sum_{i=1}^{n} t_i [c_i e^{-yt_i} / B]$$

For Portfolio A

Duration $= \{(1 \times 2000e^{-0.1 \times 1}) + (10 \times 6000e^{-0.1 \times 10})\} / (2000e^{-0.1 \times 1} + 6000e^{-0.1 \times 10})$
$= (1 \times 2000 \times 0.904838 + 10 \times 6000 \times 0.367879) / (2000 \times 0.904838 + 6000 \times 0.367879)$
= 23882.42/4016.95 = 5.95 years.

Duration of Portfolio B = 5.95 years. Thus both are equal.

Original Value of Portfolio A $= (2000e^{-0.1 \times 1} + 6000e^{-0.1 \times 10})$.
$= 2000 \times 0.904838 + 6000 \times 0.367879$ = Rs. 4016.95

Original value of Portfolio B $= 5000e^{-0.1 \times 5.95} = 5000 \times 0.55156$ = Rs. 2757.80

For both portfolios, when yield is taken as 0.101 (rise in 10 basis points), Values are:

Value of Portfolio A = $(2000e^{-0.101x1} + 6000e^{-0.101x10})$.

= 2000 x 0.903933 + 6000 x 0.36422 = Rs. 3993.18

Value of Portfolio B = $5000e^{-0.101x5.95}$ = 5000 x 0.54829 = Rs. 2741.45

Percentage changes in the value of two portfolios:

Portfolio A = (4016.95/3993.18)-1 = 0.59%, Portfolio B = (2757.80/2741.45)-1 = 0.59%

Both are 0.59% of the original value.

Note: Instead of using continuous compounding, students can also discount at 10% for 1 year, at 10% for 10years and 10% for 5.95 years and similarly at 10.1% for their respective durations.

Question:

4. (a) What are the main stages in the Capital Budgeting process? 5

(b) AB Ltd. is considering to buy an equipment and it has two options. The cost of the equipment is Rs. 1,00,000.

Option I – to buy with borrowed funds at a cost of 18% p.a., repayable in five equal instalments of Rs. 32,000

Option II – to take the equipment on lease on an annual rental of Rs. 32,000

The salvage value of the equipment at the end of five –year period will be zero. The company uses straight-line depreciation. Assume tax @ 40%.

Which of the two options would you recommend?

Discounting factors are:

		Year 1	Year 2	Year 3	Year 4	Year 5
@ 9 %	——	.917	.842	.772	.708	.650
@ 11 %	——	.901	.812	.731	.659	.593
@ 18 %	——	.847	.718	.609	.516	.437

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Answer to Question No. 4(a):

The main stages in the capital Budgeting process can be summarized as under:

(i) Identifying the project.

(ii) Forecasting investment needs.

(iii) Committing the expenditure.

(iv) Appraising suitable alternatives and selecting the best alternative.

(v) Monitoring the project implementation on regular basis

(vi) Analysis of variances and initiating timely corrective action.

Answer to Question No. 4(b):

AB LTD:

Cost of Borrowed funds = 18%

After Tax Cost of borrowed funds: 0.18(1-0.40) = 10.80%

(Discount rate applied: 11%)

COST OF OWNING:

Year	Annual Payment (Rs.)	Interest (Rs.)	Amortisation (Rs)	Depreciation (Rs)	TaxSaving (Rs)	Cost of owning(Rs)
1	32,000	18,000	14,000	20,000	15,200 *	16,800
2	32,000	15,480	16,520	20,000	14,192	17,808
3	32,000	12,506	19,494	20,000	13,002	18,998
4	32,000	8,997	23,003	20,000	11,599	20,401
5	31,840	4,857	26,983	20,000	9,943	21,897
	159840	59,840	100,000	100,000	63,936	95,904

* 40% of (18000+20000 = 38000)

COMPUTATION OF PRESENT VALUE ADVANTAGE (Rs)

Year	Cost of owning(Rs)	Net Lease Cost(Rs)	Advantage of owning(Rs)	D.F. @11%	Present value of Advantage
1	16,800	19,200 [32,000 x (1-0.40)]	2,400	.901	2,162
2	17,808	19,200	1,392	.812	1,130
3	18,998	19,200	202	.731	148
4	20,401	19,200	(1201)	.659	(791)
5	21,897	19,200	(2697)	.593	(1,599)
	95,904	96,000	96		1,050

Recommendation: It is advantageous to purchase the asset using borrowed funds.

Question:

5. (a) What is meant by Public-Private Partnership in projects involving infrastructure projects? 5

(b) XYZ Ltd. is considering two mutually-exclusive projects. Both require an initial cash outlay Rs. 10,000 each for machinery and have a life of 5 years. The company's required rate of return is 10% and it pays tax at 50%. The projects will be depreciated on a straight-line basis. The net cash flows (before taxes) expected to be generated by the projects and the present value (PV) factor (at 10%) are as follows:

	Year				
	1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.	Rs.
Project 1	4,000	4,000	4,000	4,000	4,000
Project 2	6,000	3,000	2,000	5,000	5,000
PV factor (at 10%)	0.909	0.826	0.751	0.683	0.621

You are required to calculate

(i) the Pay Back Period of each project;

(ii) the NPV and the Profitability Index of each project. 10

Answer to Question No. 5(a):

Public-private Partnership (PPP) aims to bring the private sector more directly into the field of public service. PPP schemes allow public bodies to contract directly with the private-sector organizations for the purpose of obtaining capital finance.

The private-sector organizations accept some of the project's risk in return for an operator's licence to provide specified services with a view to making profit through revenue stream arising from the services:

The PPP schemes can be on the basis on the Build-Operate-Lease Transfer Scheme (BOLT) and other similar methods:

Answer to Question No. 5(b):

CALCULATION OF NET INCOME AND NET CASH FLOWS AFTER TAXES:

Project-1

Year	Cash Flow before tax (Rs)	Depreciation (Rs)	Income before tax (Rs)	Tax (Rs)	Net Income (Rs)	Net cash Flow After tax (Rs)
1	4000	2000	2000	1000	1000	3000
2	4000	2000	2000	1000	1000	3000
3	4000	2000	2000	1000	1000	3000
4	4000	2000	2000	1000	1000	3000
5	4000	2000	2000	1000	1000	3000

Project-2

Year	Cash Flow before tax (Rs)	Depreciation (Rs)	Income before tax (Rs)	Tax (Rs)	Net Income (Rs)	Net cash Flow After tax (Rs)
1	6000	2000	4000	2000	2000	4000
2	3000	2000	1000	500	500	2500
3	2000	2000	—	—	—	2000
4	5000	2000	3000	1500	1500	3500
5	5000	2000	3000	1500	1500	3500

PROJECT-1

(i) Pay Back Period:

Cash outlay Rs. 10,000

Cash flow p.a. Rs. 3,000

Payback period: 10,000/3,000 = 3.33 Years

PROJECT-2

Cash inflows: Rs.(4000+2500+2000) = Rs. 8500 in 3 Years.

4th Year Balance — Rs. 1500.

Therefore, 1500/3500 = 0.43 Years

Pay back Period = 3 Years + 0.43 Years = 3.43 Years.

(ii) Net Present Value (NPV):

PROJECT-1: Present Value = 3000 x 3.790 = Rs. 11370
(0.909+0.826+0.751+0.683+0.621)

Less: Initial cash outlay = Rs. 10000

Net Present Value (NPV) = Rs. 1370

PROFITABILITY INDEX = 11370/ 10000 = 1.370

PROJECT-2 :

Net Cash flow after tax (Rs.)	PV factor	Present Value (Rs.)
4000	0.909	3636.00
2500	0.826	2065.00
2000	0.751	1502.00
3500	0.683	2390.50
3500	0.621	2173.50
	11767	
Less: Initial Cash outlay		10000.00
Net Present Value (NPV)		1767

PROFITABILITY INDEX = 11767/10000 = 1.177

Question:

6. (a) What is meant by Balanced Score Card? 5

(b) Calculate the value of the share of a company, if its beta is 1.5, the previous dividend was Rs 2 per share, and the growth rate is expected to be 8%. The risk-free return is 10% and the market portfolio earns a return of 15%. 5

(c) The risk-free return is 6% and the return on market portfolio is 10%. If the required rate return on stock is 13%, calculate beta. 5

Answer to Question No. 6(a):

Balanced Scorecard:

Balanced scorecard is a set of measure that gives top management a fast but comprehensive view of the organizational unit. "It is an approach to the provision of information to management to assist strategic policy formulation and achievement. It emphasizes the need to provide the user with a set of information, which addresses all relevant areas of performance in an objective and unbiased fashion." The need to link financial and non-financial measures of performance and identify key performance measures led to the emergence of the "Balanced Scorecard". The inclusion of non-financial information alongside financial information has become known as the "Balanced Scorecard" approach. [Kaplan and Norton – (1992)].

It allows managers to look at business from four different perspectives by seeking to provide answers to the following four basic questions:

(1) How do customers see us? (Customer perspective)

(2) What must we excel at? (Internal business perspective)

(3) Can we continue to improve and create value? (Learning and growth perspective)

(4) How do we look to shareholders? (Financial perspective)

The aim of scorecard is to provide a comprehensive framework for translating company's strategic objectives into a coherent set of performance measures.

Answer to Question No. 6(b):

The required rate of return on stock

$= R_F + \beta (R_M - R_F) = 0.10+1.5 (0.15-0.10) = 0.175 = 17.5\% = k_e$

Intrinsic value of share $= D_1/(K_e-g) = D_0 (1+g)/(K_e-g)$

Given, D_0 = Rs.2, g = 0.08, $k_e = 0.175$

Value of share = 2.00(1.08)/(0.175-0.08) = Rs. 22.74.

Answer to Question No. 6(c):

Security Market Line equation $= R_A = R_F + \beta (R_M - R_F)$

Given $R_A = 13\%$, $R_F = 6\%$, $R_M = 10\%$, $\beta = ?$

Then $0.13 = 0.06 + \beta (0.10-.0.06)$

$\beta = 0.07/0.04 = 1.75$

Beta of stock = 1.75.

Question:

7. (a) Unilever's subsidiary in India, Hindusthan Lever, procures most of its soaps from a Japanese company. Because of the shortage of working capital in India, payments terms for the Indian importers are typically 180 days or more. Hindusthan Lever wishes to hedge a 8.5 million Japanese Yen payable. Although options are not available on the Indian Rupee (Rs.), forward rates are available against the Yen. Additionally, a common practice in India is, for companies like Hindusthan Lever, to work with a currency agent who will, in this case, lock in the current spot exchange for a 4.85% fee. Using the following data, recommend a hedging strategy.

Spot rate, USD/ JPY	Yen 120.60/$
Spot rate, USD/ INR	Rs. 47.75/$
180-day forward rate, JPY/INR	Rs. 0.4166/Yen
Expected spot exchange rate in 180 days	Rs.0.3846/Yen
180-day Yen investment rate	1.5%
180-day rupee investment rate	8.0%
Cost of Capital	12.0%

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(b) Explain how the outcome from using a basic interest rate swap to hedge borrowing costs will generally differ from using an interest rate cap and an interest rate collar as hedges. Why is there a difference? 5

Answer to Question No. 7(a):

180-day account payable, Japanese Yen	8500000
Spot rate, Yen/$	120.60
Spot rate, Rupee/$	47.75
Implied (Calculated) Spot rate Yen/Rupee (120.60/47.75)	2.5257
180-day Forward rate: Yen/Rupee	2.4000
Expected spot rate in 180-days Yen/Rupee	2.6000
180-day Indian Rupee investing Rate	8.00%
180-day Japanese yen investing Rate	1.50%
Currency Agent's exchange rate fee	4.85%
Hindustan Lever's cost of capital	12.00%

HEDGING ALTERNATIVES:

	Rate Yen per Rupee	Amount (Rs)	
1. REMAIN UNCOVERED			
Settling Account Payable in 180-days at spot rate.	2.5257		
* If spot rate in 180-days is same as Current spot.	(8500000/2.5257)	3365464.34	Risky
* If spot rate in 180-days is same as Forward rate [8500000/2.4000]	2.4000	3541666.67	Risky
* If spot rate in 180-days is expected Spot rate [8500000/2.6000]	2.600	3269230.77	Risky
2. BUY JAPANESE YEN FORWARD 180 DAYS:			
Settlement amount at forward rate. [8500000/2.400]	2.400	3541666.67	Certain
3. MONEY MARKET HEDGE:			
Principle Account Payable:	Yen 8500000		
Discount factor for year Investing Rate for 180 days: (1/1.0075)	0.99256		
Principle needed to meet Account payable in 180-days: (8500000 x 0.99256)	Yen 8436760.00		
Current spot rate	Yen per rupee 2.5257		
Indian Rupee Current amount: [8436760/2.5257]	Rs. 3340365.05		

Hindustan Lever WACC Carry-forward Factor for 180 days: 1.0600

FUTURE VALUE OF MONEY MARKET HEDGE: Rs. 3540786.95 Certain

(3340365.05 x 1.06)

4. INDIAN CURRENCY AGENT HEDGE:

Principle Account payable	Yen 8500000	
Current spot rate Yen per rupee	2.5257	
Current account payable (8500000/2.5257)	Rs. 3365403.65 (A)	
Plus: Agent's Fees (4.85%)	Rs. 163222.08	
Hindustan's Lever WACC carry-forward factor for 180 days on fee (163222.08 x 1.06)	Rs. 173015.40 (B)	
TOTAL	Rs. 3538419.05	Certain

EVALUATION ALTER NATIVES:

Hedging through currency agent is the best alternative hedging strategy if risk avoidance is the objective.

Answer to Question No. 7(b):

The use of interest rate swaps as a hedge generally fixes an outcome. Thus, the hedge will produce an effective rate with small variation. The use of an interest rate cap allows for beneficial rate moves to improve a hedger's final outcome. An interest rate collar similarly provides for a wider range of potential outcomes. Both of the latter come at a higher up front cost.

Question:

8. Write short notes on *any three* of the following: 3 × 5

(a) Off Balance Sheet Financing;

(b) Convertible Security;

(c) Operating & Financial Leverage;

(d) Break-even point;

(e) Du Pont Chart.

Answer to Question No. 8:

(a) OFF BALANCE SHEET FINANCING:

Off Balance Sheet Financing refers to the fact that neither the leased assets nor liabilities under the lease contracts are appeared on the lessees' Balance Sheets for any year. Since the leased assets do not form part of the lessees' assets, there are the effective understatement of their assets, which may sometimes lead to gross underestimation of the lessees

(b) CONVERTIBLE SECURITIES:

Convertible Securities are bonds or preferred stocks that can be exchanged for (converted into) common stock, under specific terms, at the option of the holder. Unlike the exercise of warrants, conversion of a convertible security doesnot provide addition capital to the issuer.

(c) OPERATING AND FINANCIAL LEVERAGE:

Operating leverage is the extent to which fixed costs are used in a firm's operations. If a high percentage of a firm's total costs are fixed costs, then the firm is said to have a high degree of operating leverage. Operating leverage is a measure of one element of business risk, but does not include the second major element, i.e, sales variability.

Financial leverage is the extent to which fixed-income securities (debt and preferred stock) are used in a firm's capital structure. If a high percentage of a firm's capital structure is in the form of debt and preferred stock, then the firm is said to have a high degree of financial leverage.

(d) BREAK EVEN POINT:

Break-even point refers to the point where total cost is equal to revenue. It is a point of no profit no loss. The point is also known as the volume of operations where profit begins. This is also the minimum point of production when total costs are recovered.

Break-even analysis may be performed with or without the inclusion of financial costs. If financial costs are not included, break-even occurs when EBIT equals zero. If financial costs are included, break-even occurs when EBT equals zero.

Break-even point can be stated in the form of an equation.

Sales revenue at break-even point = Fixed cost + Variable costs.

Finding out a break-even point requires separation of cost into fixed and variable components.

Computation of Break-even Point. The computation of break-even point can be understood with the following illustration:

1. *Based on unit costs*:

   Break-even point = Total fixed cost/ Contribution per unit (in units)

   Fixed cost = Rs. 80,000.

   Variable cost = Rs. 4 per unit.

   Selling price = Rs. 20 per unit.

Contribution per unit = Rs.20 – Rs. 4 = Rs.16.

Break-even point 80,000 / 16 = 5,000 units

Break-even point (in amount)

= Break-even output × Selling price per unit

= 5,000 × Rs.20 = Rs.1,00,000.

(e) DU PONT CHART.

It is a chart of financial ratios, pioneered by the Du Pont company, that helps in understanding profitability in terms of profit margin and asset turnover. By including a financial leverage ratio, the Du Pont analysis may be extended to explore the determinants of the return on equity. The chart below shows the basic elements of the earning power of a firm:

Rate of return on Investment

Net Profit as % of sales (x) Investment turnover

Net (÷) Sales — Sales (÷) Total assets

Profit

Fixed (+) Current

Assets assets

Gross profit =
Sales-Cost of
goods sold

(-)
Expenses:
Selling
Admn.
Other
(-)
Income-tax

Alternatively
Shareholders'
equity
(+)
Long-term
borrowed funds
(+)
Current Liabilities

Du Pont Chart

The earning power or the ROI ratio is a central measure of the overall profitability and operational efficiency of a firm. It shows the interaction of profitability and activity ratios. It implies that the performance of a firm can be improved either by generating more sales volume per rupee of investment and/or by increasing the profit margin per rupee of sales.