PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS

Interest Rate Guarantee

1. Two companies ABC Ltd. and XYZ Ltd. approach the DEF Bank for FRA (Forward Rate Agreement). They want to borrow a sum of ₹ 100 crores after 2 years for a period of 1 year. Bank has calculated Yield Curve of both companies as follows:

Year	XYZ Ltd.	ABC Ltd.*
1	3.86	4.12
2	4.20	5.48
3	4.48	5.78

*The difference in yield curve is due to the lower credit rating of ABC Ltd. compared to XYZ Ltd.

(i) You are required to calculate the rate of interest DEF Bank would quote under 2V3 FRA, using the company's yield information as quoted above.

(ii) Suppose bank offers Interest Rate Guarantee for a premium of 0.1% of the amount of loan, you are required to calculate the interest payable by XYZ Ltd. if interest in 2 years turns out to be

(a) 4.50%

(b) 5.50%

Portfolio Management

2. Mr. A has a portfolio of ₹ 5 crore consisting of equity shares of X Ltd. and Y Ltd. with beta of 1.15. Other information is as follows:

Spot Value of Index Future = 21000

Multiplier = 150

You are requested to reduce beta of portfolio to 0.85 and increase beta to 1.45 by using:

(a) Change in composition through Risk Free securities

(b) Index futures

Leasing

3. AGD Co is a profitable company which is considering the purchase of a machine costing ₹ 32,00,000. If purchased, AGD Co would incur annual maintenance costs of ₹ 2,50,000. The machine would be used for three years and at the end of this period would be sold for ₹ 5,00,000. Alternatively, the machine could be obtained under an operating lease for an annual lease rental of ₹ 12,00,000 per year, payable in advance. AGD Co can claim depreciation @ 25% on WDV basis. Annual lease rental will be paid in the beginning of each year.

The company pays tax on profits at an annual rate of 30% and all tax liabilities are paid one year in arrears.

Required:

(1) Using an after-tax borrowing rate of 7%, evaluate whether AGD Co should purchase or lease the new machine.

(2) Suppose a bank had offered to lend AGD Co ₹ 32,00,000 for a period of five years interest payable every six months, then you are required to:

(i) Calculate the Annual Percentage Rate (APR) implied by the bank's offer with interest payable every six months.

(ii) Calculate the amount of installment payable at the end of each six-month period if the offered loan is to be repaid in equal installments.

Bond Refunding

4. M/s Transindia Ltd. is contemplating calling ₹ 3 crores of 10 years, ₹ 1,000 bond issued 5 years ago with a coupon interest rate of 14 per cent. The bonds have a call price of ₹ 1,015 and had initially collected proceeds of ₹ 2.91 crores due to a discount of ₹ 30 per bond. The initial floating cost was ₹ 3,60,000. The Company intends to sell ₹ 3 crores of 12 per cent coupon rate, 5 years bonds to raise funds for retiring the old bonds. It proposes to sell the new bonds at their par value of ₹ 1,000. The estimated floatation cost is ₹ 2,00,000. The company is paying 40% tax. The new bonds shall be issued 2 months before retiring old bonds to avoid any market risk and using the proceeds from new issue to retire the old bonds. What is the feasibility of refunding bonds?

Capital Budgeting

5. XYZ Food Pvt. Ltd., a franchisee of Domino's (World famous food chain for delivering pizza at home) is considering a proposal of acquiring a fleet of motorbikes for delivery of pizzas at home of customers. Since pizzas are also delivered in late night and bikes are handled by different delivery boys (due shift working) the use of fleet will be very heavy. Hence it is expected that the motorbike shall be virtually worthless and scrapped after a period of 3 years. However they are taken out of services before 3 years there will be a positive 'abandonment' cash flow.

The initial cost of the bike will be ₹1,00,000. The expected post tax benefit (cash inflows) from the use of bike and abandonment cash inflows are as follows:

Year	Operating Cash Flows (₹)	Abandonment Cash Flows at end of year (₹)
1	42,000	62,000
2	40,000	40,000
3	35,000	0

The cost of capital of XYZ Pvt. Ltd. is 10%. You are required to evaluate the proposal of acquisition of bikes and recommend preferable life of the same.

Security Valuation

6. Calculate the value of share from the following information:

Profit of the company	₹ 290 crores
Equity capital of company	₹ 1,300 crores
Par value of share	₹ 40 each
Debt ratio of company	27
Growth rate of the company for first 5 years	8%
Growth rate of the company for the 6 year and onward	5%
Beta 0.1; risk free interest rate	8.7%
Market returns	10.3%
Capital expenditure per share	₹ 47
Depreciation per share	₹ 39
Change in Working capital	₹ 3.45 per share

Right Issue

7. Pragya Limited has issued 75,000 equity shares of ₹ 10 each. The current market price per share is ₹ 24. The company has a plan to make a rights issue of one new equity share at a price of ₹ 16 for every four share held.

   You are required to:

   (i) Calculate the theoretical post-rights price per share;

   (ii) Calculate the theoretical value of the right alone;

   (iii) Show the effect of the rights issue on the wealth of a shareholder, who has 1,000 shares assuming he sells half of his rights; and exercise the remaining 50%.

   (iv) Show the effect, if the same shareholder does not take any action and ignores the issue.

Business Valuation

8. A valuation done of an established company by a well-known analyst has estimated a value of ₹ 525 lakhs, based on the current year's free cash flow of ₹ 20 lakhs and an expected growth rate of 5%.

   While going through the valuation procedure, you found that the analyst has made the mistake of using the book values of debt and equity in his calculation. While you do not know the book value weights he used, you have been provided with the following information:

   (i) Company has a cost of equity of 12%,

   (ii) After tax cost of debt is 6%,

(iii) The market value of equity is three times the book value of equity, while the market value of debt is equal to the book value of debt.

You are required to estimate the correct value of the company.

Foreign Exchange Risk Management

9. Your forex dealer had entered into a cross currency deal and had sold US $ 10,00,000 against EURO at US $ 1 = EURO 1.4400 for spot delivery.

However, later during the day, the market became volatile and the dealer in compliance with his management's guidelines had to square – up the position when the quotations were:

Spot US $ 1	INR 61.4300/4500
Spot US $ 1	EURO 1.4250/4350

What will be the gain or loss in the transaction?

10. Followings are the spot exchange rates quoted at three different forex markets:

USD/INR	59.25/ 59.35 in Mumbai
GBP/INR	102.50/ 103.00 in London
GBP/USD	1.70/ 1.72 in New York

The arbitrageur has USD1,00,00,000. Assuming that bank wishes to retain an exchange margin of 0.125%, explain whether there is any arbitrage gain possible from the quoted spot exchange rates.

Indian Capital Market

11. A Mutual Fund is holding the following assets in ₹ Crores :

Investments in diversified equity shares	90.00
Cash and Bank Balances	10.00
	100.00

The Beta of the portfolio is 1.1. The index future is selling at 4300 level. The Fund Manager apprehends that the index will fall at the most by 10%. How many index futures he should short for perfect hedging? One index future consists of 50 units.

Substantiate your answer assuming the Fund Manager's apprehension will materialize. Portfolio Theory

12. A company is long on 10 MT of copper @ ₹ 474 per kg (spot) and intends to remain so for the ensuing quarter. The standard deviation of changes of its spot and future prices are 4% and 6% respectively, having correlation coefficient of 0.75.

What is its hedge ratio? What is the amount of the copper future it should short to achieve a perfect hedge?

13. On 31-8-2011, the value of stock index was ₹ 2,200. The risk free rate of return has been 8% per annum. The dividend yield on this Stock Index is as under:

Month	Dividend Paid (p.a.)
January	3%
February	4%
March	3%
April	3%
May	4%
June	3%
July	3%
August	4%
September	3%
October	3%
November	4%
December	3%

Assuming that interest is continuously compounded daily, find out the future price of contract deliverable on 31-12-2011. Given: $e^{0.01583} = 1.01593$

Dividend Decision

14. The following information relates to Maya Ltd:

Earnings of the company	₹ 10,00,000
Dividend payout ratio	60%
No. of Shares outstanding	2,00,000
Rate of return on investment	15%
Equity capitalization rate	12%

(i) What would be the market value per share as per Walter's model?

(ii) What is the optimum dividend payout ratio according to Walter's model and the market value of company's share at that payout ratio?

Financial Services

15. M/s Atlantic Company Limited with a turnover of ₹ 4.80 crores is expecting growth of 25% for forthcoming year. Average credit period is 90 days. The past experience shows that bad debt losses are 1.75% on sales. The Company's administering cost for collecting receivable is ₹ 6,00,000/-.

It has decided to take factoring services of Pacific Factors on terms that factor will by receivable by charging 2% commission and 20% risk with recourse. The Factor will pay advance on receivables to the firm at 16% interest rate per annum after withholding 10% as reserve.

Calculate the effective cost of factoring to the firm. (Assume 360 days in a year).Dividend Decision

Mutual Fund

16. On 1-4-2012 ABC Mutual Fund issued 20 lakh units at ₹ 10 per unit. Relevant initial expenses involved were ₹ 12 lakhs. It invested the fund so raised in capital market instruments to build a portfolio of ₹ 185 lakhs. During the month of April, 2012 it disposed off some of the instruments costing ₹ 60 lakhs for ₹ 63 lakhs and used the proceeds in purchasing securities for ₹ 56 lakhs. Fund management expenses for the month of April, 2012 was ₹ 8 lakhs of which 10% was in arrears. In April, 2012 the fund earned dividends amounting to ₹ 2 lakhs and it distributed 80% of the realized earnings. On 30-4-2012 the market value of the portfolio was ₹ 198 lakhs.

Mr. Akash, an investor, subscribed to 100 units on 1-4-2012 and disposed off the same at closing NAV on 30-4-2012. What was his annual rate of earning?

Money Market Instruments

17. M Ltd. has to make a payment on 30th January, 2010 of ₹ 80 lakhs. It has surplus cash today, i.e. 31st October, 2009; and has decided to invest sufficient cash in a bank's Certificate of Deposit scheme offering an yield of 8% p.a. on simple interest basis. What is the amount to be invested now?

Mergers and Acquisitions

18. Yes Ltd. wants to acquire No Ltd. and the cash flows of Yes Ltd. and the merged entity are given below:

					(₹ In lakhs)
Year	1	2	3	4	5
Yes Ltd.	175	200	320	340	350
Merged Entity	400	450	525	590	620

Earnings would have witnessed 5% constant growth rate without merger and 6% with merger on account of economies of operations after 5 years in each case. The cost of capital is 15%.

The number of shares outstanding in both the companies before the merger is the same and the companies agree to an exchange ratio of 0.5 shares of Yes Ltd. for each share of No Ltd.

PV factor at 15% for years 1-5 are 0.870, 0.756; 0.658, 0.572, 0.497 respectively.

You are required to:

(i) Compute the Value of Yes Ltd. before and after merger.

(ii) Value of Acquisition and

(iii) Gain to shareholders of Yes Ltd.

19. The following is the Balance-sheet of Grape Fruit Company Ltd as at March 31st, 2011.

Liabilities	(₹ in lakhs)	Assets	(₹ in lakhs)
Equity shares of ₹ 100 each	600	Land and Building	200
14% preference shares of ₹ 100/- each	200	Plant and Machinery	300
		Furniture and Fixtures	50
13% Debentures	200	Inventory	150
Debenture interest accrued and payable	26	Sundry debtors	70
		Cash at bank	130
Loan from bank	74	Preliminary expenses	10
Trade creditors	340	Cost of issue of debentures	5
		Profit and Loss account	525
	1440		1440

The Company did not perform well and has suffered sizable losses during the last few years. However, it is felt that the company could be nursed back to health by proper financial restructuring. Consequently the following scheme of reconstruction has been drawn up:

(i) Equity shares are to be reduced to ₹ 25/- per share, fully paid up;

(ii) Preference shares are to be reduced (with coupon rate of 10%) to equal number of shares of ₹ 50 each, fully paid up.

(iii) Debenture holders have agreed to forgo the accrued interest due to them. In the future, the rate of interest on debentures is to be reduced to 9 percent.

(iv) Trade creditors will forego 25 percent of the amount due to them.

(v) The company issues 6 lakh of equity shares at ₹ 25 each and the entire sum was to be paid on application. The entire amount was fully subscribed by promoters.

(vi) Land and Building was to be revalued at ₹ 450 lakhs, Plant and Machinery was to be written down by ₹ 120 lakhs and a provision of ₹15 lakhs had to be made for bad and doubtful debts.

Required:

(i) Show the impact of financial restructuring on the company's activities.

(ii) Prepare the fresh balance sheet after the reconstructions is completed on the basis of the above proposals.

20. Write a short note on

(a) Impact of GDRs on Indian Capital Market

(b) Types of risks foreign exchange dealings are exposed to

(c) Constraints on paying Dividend

(d) Types/ Forms of Factoring

(e) Treasury bills

SUGGESTED ANSWERS/HINTS

1. (i) DEF Bank will fix interest rate for 2V3 FRA after 2 years as follows:

XYZ Ltd.

$(1+r)\ (1+0.0420)^2 = (1+0.0448)^3$

$(1+r)\ (1.0420)^2 = (1.0448)^3$

$r = 5.04\%$

Bank will quote 5.04% for a 2V3 FRA.

ABC Ltd.

$(1+r)\ (1+0.0548)^2 = (1+0.0578)^3$

$(1+r)\ (1.0548)^2 = (1.0578)^3$

$r = 6.38\%$

Bank will quote 6.38% for a 2V3 FRA.

(ii)

		4.50%- Allow to Lapse	5.50%- Exercise
Interest	₹ 100 crores X 4.50%	₹ 4.50 crores	-
	₹ 100 crores X 5.04%	-	₹ 5.04 crores
Premium (Cost of Option)	₹ 100 crores X 0.1%	₹ 0.10 crores	₹ 0.10 crores
		4.60 crores	5.14 crores

2. (i) Reduction of beta to 0.85

(a) Reduction in beta through change in composition of securities whose beta is zero (β0)

βd = W1 x βe + W2 x β0

0.85 = W1 x 1.15 + (1 - W1) x 0

W1 = 0.85/1.15 = 0.739

So, W2 = 1 – 0.739 = 0.261

Thus, ₹ 3.695 crores (₹ 5 crores x 0.739) shall remain invested in portfolio and remaining ₹ 1.305 crores shall be invested in risk free securities (say Treasury bills)

(b) By using Index Futures

No. of Stock Index Futures to be short

$$= \text{Existing Beta } (\beta) \times \frac{\text{Value of Spot Position to be hedged}}{\text{Value of one Future Contract}}$$

$$= 1.15 \times \frac{₹\,1.305 \text{ crore}}{21000 \times 150} = 1.15 \times 4.14$$

= 4.76 or say 5 contracts

Thus, instead of swapping ₹ 1.305 crore to risk free securities, the portfolio manager Mr. A can also reduce beta to 0.85 by selling 4.76 or 5 stock index futures.

(ii) Increasing beta to 1.45

(a) β shall be increased by investing additional amount in equity shares.

βd = W1 x βe + W2 x β2

1.45 = W1 x β1 + W2 x β2

1.45 = W1 x 1.15 + (1 - W1) x 0

W1 = 1.45/1.15 = 1.26

This can be achieved by:

(i) Holding on ₹5 crore worth of shares

(ii) Selling short Risk Free Securities of ₹1.30 crores (0.26 X ₹5 crores) i.e. borrowing ₹1.30 crores and using proceeds to buy ₹1.30 crores of additional shares.

(b) Increasing beta by using Index Futures i.e. buying Index futures of ₹1.495 crores (1.15 x ₹1.30 crores).

The number of contracts to be bought

$$= \frac{1.495 \text{ crores}}{21000 \times 150} = 4.746 \text{ or say 5 contracts}$$

3. (1) Workings-

Tax benefits on Depreciation

Year	Opening Value	Depreciation/ STCL	Closing Value	Tax Benefit	Taken in year
1	32,00,000	8,00,000	24,00,000	2,40,000	2
2	24,00,000	6,00,000	18,00,000	1,80,000	3
3	18,00,000	13,00,000		3,90,000	4

Borrowing to buy evaluation

	Year 0	Year 1	Year 2	Year 3	Year 4
Acquisition/ Disposal	(32,00,000)			5,00,000	
Tax Benefit on Depreciation			2,40,000	1,80,000	3,90,000
Maintenance Cost		(2,50,000)	(2,50,000)	(2,50,000)	
Tax benefit of Maintenance Cost			75,000	75,000	75,000
Cash Flow	(32,00,000)	(2,50,000)	65,000	5,05,000	4,65,000
PVF@7%	1.00	0.935	0.873	0.816	0.763
PV	(32,00,000)	(2,33,750)	56,745	4,12,080	3,54,795

PV of Borrowing to Buy = ₹ 26,10,130

Lease evaluation

	Year 0	Year 1	Year 2	Year 3	Year 4
Lease Rental	(12,00,000)	(12,00,000)	(12,00,000)		
Tax Benefit on Lease Rental			3,60,000	3,60,000	3,60,000
Cash Flow	(12,00,000)	(12,00,000)	(8,40,000)	3,60,000	3,60,000
PVF@7%	1.00	0.935	0.873	0.816	0.763
PV	(12,00,000)	(11,22,000)	(7,33,320)	2,93,760	2,74,680

PV of leasing Option = ₹ 24,86,880

Since outflow is less in case of leasing option the company should opt for the same.

(2) (i) Interest payable every six months means that the bank will require 5% every six months accordingly equivalent annual percentage rate shall be calculated as follows:

$[(1{\cdot}05)^2 - 1] \times 100 = 10{\cdot}25\%$

(ii) Amount of installment shall be calculated by using annuity tables as follows:

A = ₹ 32,00,000/7·722 = ₹ 4,14,400

4. NPV for bond refunding

	₹
PV of annual cash flow savings (W.N. 2)	
(3,25,600 × PVIFA 7.20*%,5) i.e. 4.0783	13,27,894
Less: Initial investment (W.N. 1)	6,38,000
NPV	6,89,894

* 12.00(1 - 0.40)

Recommendation: Refunding of bonds is recommended as NPV is positive.

Working Notes:

(1) Initial investment:

(a)	Call premium		
	Before tax (1,015 – 1,000) × 30,000	4,50,000	
	Less: tax @ 40%	1,80,000	
	After tax cost of call prem.		2,70,000
(b)	Floatation cost		2,00,000
(c)	Overlapping interest		
	Before tax (0.14 × 2/12 × 3 crores)	7,00,000	
	Less: tax @ 40%	2,80,000	
	After tax cost of Overlapping interest		4,20,000
(d)	Tax saving on unamortised discount on old bond 5/10 × 9,00,000 × 0.4		(1,80,000)
(e)	Tax savings from unamortised floatation Cost of old bond 5/10 × 3,60,000 × 0.4		(72,000)
			6,38,000

(2) Annual cash flow savings:

(a) Old bond

(i)	Interest cost (0.14 × 3 crores)	42,00,000	
	Less tax @ 40%	16,80,000	25,20,000
(ii)	Tax savings from amortisation of discount 9,00,000/10 × 0.4		(36,000)
(iii)	Tax savings from amortisation of floatation cost 3,60,000/10 × 0.4		(14,400)
	Annual after tax payment under old bond (A)		24,69,600

(b) New bond

(i)	Interest cost before tax (0.12 × 3 crores)	36,00,000	
	Less tax @ 40%	14,40,000	21,60,000
(ii)	Tax savings from amortisation of floatation cost (0.4 × 2,00,000/5)		(16,000)
	Annual after tax payment under new bond (B)		21,44,000
	Annual cash flow savings [(A) – (B)]		3,25,600

5. Statement showing NPV of the motor bike if operated 3 years

Particulars	Year	Cash Flows (₹)	PVF @ 10%	PV of Cash Flows (₹)
Initial Investment	0	(1,00,000)	1.00	(1,00,000)
Cash Flows	1	42,000	0.909	38,178
	2	40,000	0.826	33,040
	3	35,000	0.751	26,285
NPV				(2,497)

Statement showing NPV of the motor bike if operated 2 years

Particulars	Year	Cash Flows (₹)	PVF @ 10%	PV of Cash Flows (₹)
Initial Investment	0	(1,00,000)	1.00	(1,00,000)
Cash Flows	1	42,000	0.909	38,178
	2	80,000	0.826	66,080
NPV				4,258

Statement showing NPV of the motor bike if operated 1 year

Particulars	Year	Cash Flows (₹)	PVF @ 10%	PV of Cash Flows (₹)
Initial Investment	0	(1,00,000)	1.00	(1,00,000)
Cash Flows	1	1,04,000	0.909	94,536
NPV				(5,464)

Recommendation: Thus, from above it is clear that the preferable life of bike is 2 years.

6. No. of Shares = $\frac{₹\ 1{,}300\ \text{crores}}{₹\ 40\ \text{crores}}$ = 32.5 Crores

$$EPS = \frac{PAT}{No.of\ shares}$$

$$EPS = \frac{₹\ 290\ \text{crores}}{32.5\ \text{crores}} = ₹\ 8.923$$

FCFE = Net income – [(1-b) (capex – dep) + (1-b) (ΔWC)]

FCFE = 8.923 – [(1-0.27) (47-39) + (1-0.27) (3.45)]

= 8.923 – [5.84 + 2.5185] = 0.5645

Cost of Equity = $R_f + ß\ (R_m - R_f)$

= 8.7 + 0.1 (10.3 – 8.7) = 8.86%

PV of FCFE for 5 years

Year	FCFE (₹)	PVF@8.86%	PV (₹)
1	0.6096	0.9186	0.5600
2	0.6584	0.8438	0.5556
3	0.7111	0.7752	0.5512
4	0.7680	0.7121	0.5469
5	0.8294	0.6541	0.5425
			2.7562

$$P_5 = \frac{FCFE(1+g)}{K_e - g} = \frac{0.8294(1.05)}{0.0886 - 0.05} = \frac{0.8709}{0.0386} = ₹\ 22.56$$

$$PV\ of\ P_5 = \frac{22.56}{(1.0886)^5} = ₹22.56\ crore \times 0.6541 = ₹14.76$$

∴ Value of Share = ₹ 2.7562 + ₹14.76 = ₹17.52

7. (i) Calculation of theoretical Post-rights (ex-right) price per share:

$$\text{Ex-right value} = \left[\frac{MN + SR}{N + R}\right]$$

Where,

M = Market price,

N = Number of old shares for a right share

S = Subscription price

R = Right share offer

$$= \left[\frac{(₹\ 24 \times 4) + (₹\ 16 \times 1)}{4 + 1}\right] = ₹\ 22.40$$

(ii) Calculation of theoretical value of the rights alone:

= Ex-right price – Cost of rights share

= ₹ 22.40 – ₹ 16 = ₹ 6.40

(iii) Calculation of effect of the rights issue on the wealth of a shareholder who has 1,000 shares assuming he sells half of his rights & exercises remaining 50%:

		₹
(a)	Value of shares before right issue (1,000 shares × ₹ 24)	24,000
(b)	Value of shares after right issue (1,125 shares × ₹ 22.40)	25,200
	Add: Sale proceeds of rights renunciation (125 shares × ₹ 6.40)	800
	Less: Additional Investment (125 shares × ₹ 16)	(2,000)
		24,000

There will be no impact on the wealth of the shareholder.

(iv) Calculation of effect if the shareholder does not take any action and ignores the issue:

	₹
Value of shares before right issue (1,000 shares × ₹ 24)	24,000
Less: Value of shares after right issue (1,000 shares × ₹ 22.40)	22,400
Loss of wealth to shareholders, if rights ignored	1,600

8. Cost of capital by applying Free Cash Flow to Firm (FCFF) Model is as follows:-

Value of Firm = $V_0 = \frac{FCFF_1}{K_c - g_n}$

Where –

FCFF1 = Expected FCFF in the year 1

Kc = Cost of capital

gn = Growth rate forever

Thus, ₹ 525 lakhs = ₹ 20 lakhs(1+0.05) /(Kc-g)

Since g = 5%, then Kc = 9%

Now, let X be the weight of debt and given cost of equity = 12% and cost of debt = 6%, then 12% (1 – X) + 6% X = 9%

Hence, X = 0.50, so book value weight for debt was 50%

∴ Correct weight should be 75% of equity and 25% of debt.

∴ Cost of capital = Kc = 12% (0.75) + 6% (0.25) = 10.50%

and correct firm's value = ₹ 21 lakhs/(0.105 – 0.05) = ₹ 381.82 lakhs.

9. The amount of EURO bought by selling US$

US$ 10,00,000 * EURO 1.4400	=	EURO	14,40,000
The amount of EURO sold for			
buying USD 10,00,000 * 1.4350	=	EURO	14,35,000
Net Gain in the Transaction	=	EURO	5,000

To sell EURO 5,000 in the market @

(a) USD 1 = EURO 1.4350 &

(b) USD1 = INR 61.4300

Cross Currency buying rate of EUR/INR is ₹ 61.4300 / 1.4350 i.e. ₹ 42.8084

Gain in the Transaction ₹ 42.8084 * 5000 = ₹ 2,14,042.00

10. The arbitrageur can proceed as stated below to realize arbitrage gains.

(i) Buy GBP at New York for USD USD 1,00,00,000

GBP/USD	1.72
Add: Exchange Margin @ 0.125%	0.002
	1.722

Accordingly, GBP acquired in exchange of USD1,00,00,000 is GBP 58,07,200

(ii) Sell these GBP at London Market and get INR

GBP/INR	102.50
Less: Exchange Margin@ 0.125%	0.13
	102.37
INR on conversion of GBP (58,07,200 X 102.37)	INR 59,44,83,064

(iii) Acquire USD by selling INR at Mumbai

USD/INR	59.35
Add: Exchange Margin @ 0.125%	0.07
	59.42

Accordingly, USD acquired in exchange of INR $\frac{59,44,83,064}{59.42}$ is USD 1,00,04,763

Net Gain (USD 1,00,04,763 - USD 1,00,00,000) USD 4,763

11. Number of index future to be sold by the Fund Manager is:

$$\frac{1.1\times 90,00,00,000}{4,300\times 50} = 4,605$$

Justification of the answer:

Loss in the value of the portfolio if the index falls by 10% is

₹ $\frac{11}{100}$x90 Crore = ₹ 9.90 Crore.

Gain by short covering of index future is: $\frac{0.1\times 4,300\times 50\times 4,605}{1,00,00,000}$ = 9.90 Crore

This justifies the answer cash is not part of the portfolio.

12. The optional hedge ratio to minimize the variance of Hedger's position is given by:

$$H= \rho\frac{\sigma S}{\sigma F}$$

Where

σS= Standard deviation of ΔS

σF=Standard deviation of ΔF

ρ= coefficient of correlation between ΔS and ΔF

H= Hedge Ratio

ΔS = change in Spot price.

ΔF= change in Future price.

Accordingly

$$H = 0.75 \times \frac{0.04}{0.06} = 0.5$$

No. of contract to be short = 10 x 0.5 = 5

Amount = 5000 x ₹ 474 = ₹ 23,70,000

13. The duration of future contract is 4 months. The average yield during this period will be:

$$\frac{3\% + 3\% + 4\% + 3\%}{4} = 3.25\%$$

As per Cost to Carry model the future price will be

$$F = Se^{(r_f - D)t}$$

Where S = Spot Price

r_f = Risk Free interest

D = Dividend Yield

t = Time Period

Accordingly, future price will be

= ₹ 2,200 $e^{(0.08 - 0.0325)\times 4/12}$ = ₹ 2,200 $e^{0.01583}$

= ₹ 2,200 x 1.01593 = ₹ 2235.05

14. MAYA Ltd.

(i) Walter's model is given by –

$$p = \frac{D + (E - D)(\gamma / k_e)}{k_e}$$

Where, p = Market price per share,

E = Earning per share – ₹ 5

D = Dividend per share – ₹ 3

γ = Return earned on investment – 15%

k_e = Cost of equity capital – 12%

$$\therefore p = \frac{3 + (5 - 3) \times \frac{0.15}{0.12}}{0.12} = \frac{3 + 2 \times \frac{.15}{.12}}{.12} = ₹ 45.83$$

(ii) According to Walter's model when the return on investment is more than the cost of equity capital, the price per share increases as the dividend pay-out ratio

decreases. Hence, the optimum dividend pay-out ratio in this case is Nil. So, at a payout ratio of zero, the market value of the company's share will be:-

$$\frac{0+(5-0)\times\frac{.15}{.12}}{0.12} = ₹\ 52.08$$

15. Expected Turnover = ₹ 4.80 crore + 25% i.e. ₹ 1.20 crore = ₹ 6.00 crore

	₹ in Lacs	₹ in Lacs
Advance to be given:		
Debtors ₹6.00 crore x 90/360	150.00	
Less: 10% withholding	15.00	135.00
Less: Commission 2%		3.00
Net payment		132.00
Less: Interest @16% for 90 days on ₹132 lacs		5.28
		126.72
Calculation of Average Cost:		
Total Commission ₹6.00 crore x 2%		12.00
Total Interest ₹ 5.28 lacs x 360/90		21.12
		33.12
Less: Admin. Cost	6.00	
Saving in Bad Debts (₹600 lacs x 1.75% x 80%)	8.40	14.40
		18.72
Effective Cost of Factoring $\frac{₹18.72\ lacs}{₹126.72\ lacs}\times 100$		14.77%

16.

	Amount in ₹ lakhs	Amount in ₹ lakhs	Amount in ₹ lakhs
Opening Bank (200 - 185 -12)	3.00		
Add: Proceeds from sale of securities	63.00		
Add: Dividend received	2.00	68.00	
Deduct:			
Cost of securities purchased	56.00		
Fund management expenses paid (90% of 8)	7.20		
Capital gains distributed = 80% of (63 – 60)	2.40		

Dividend distributed =80% of 2.00	1.60	67.20	
Closing Bank			0.80
Closing market value of portfolio			198.00
			198.80
Less: Arrears of expenses			0.80
Closing Net Assets			198.00
Number of units (Lakhs)			20
Closing NAV per unit (198.00/20)			9.90

Rate of Earning (Per Unit)

	Amount
Income received (₹ 2.40 lakhs + ₹ 1.60 lakhs)/20 lakhs	₹ 0.20
Loss: Loss on disposal (₹ 10 – ₹ 9.90)	₹ 0.10
Net earning	₹ 0.10
Initial investment	₹ 10.00
Rate of earning (monthly)	1%
Rate of earning (Annual)	12%

17. Calculation of Investment Amount

Amount required for making payment on 30th January, 2010 = ₹ 80,00,000

Investment in Certificates of Deposit (CDs) on 31st October, 2009

Rate of interest = 8% p.a.

No. of days to maturity = 91 days

Interest on ₹ 1 of 91 days

(Re. 1 × 0.08 × 91/365) = 0.0199452

Amount to be received for Re. 1

(Re.1.00 + ₹ 0.0199452) = 1.0199452

Calculation of amount to be invested now to get ₹ 80 lakhs after 91 days:

$$= \frac{₹\ 80,00,000}{₹\ 10199452} = ₹\ 78,43,558.65$$

Or, ₹ 78,43,600 or ₹ 78,44,000 approximately.

18. (i) Working Notes:

Present Value of Cash Flows (CF) upto 5 years

Year End	CF of Yes Ltd. (₹ lakhs)	PVF @15%	PV of CF (₹ lakhs)	CF of Merged Entity (₹ lakhs)	PV of CF of Merged Entity (₹ lakhs)
1	175	0.870	152.25	400	348.00
2	200	0.756	151.20	450	340.20
3	320	0.658	210.56	525	345.45
4	340	0.572	194.48	590	337.48
5	350	0.497	173.95	620	308.14
			882.44		1679.27

PV of Cash Flows of Yes Ltd. after the forecast period

$$TV_5 = \frac{CF_5(1+g)}{K_e - g} = \frac{350(1+0.05)}{0.15-0.05} = \frac{367.50}{0.10} = ₹3675 \text{ lakhs}$$

PV of TV_5 = ₹3675 lakhs x 0.497 = ₹1826.475 lakhs

PV of Cash Flows of Merged Entity after the forecast period

$$TV_5 = \frac{CF_5(1+g)}{K_e - g} = \frac{620(1+0.06)}{0.15-0.06} = \frac{657.20}{0.09} = ₹7302.22 \text{ lakhs}$$

PV of TV_5 = ₹7302.22 lakhs x 0.497 = ₹3629.20 lakhs

(i) Value of Yes Ltd.

	Before merger (₹lakhs)	After merger (₹lakhs)
PV of CF (1-5 years)	882.440	1679.27
Add: PV of TV_5	1826.475	3629.20
	2708.915	5308.47

(ii) Value of Acquisition

= Value of Merged Entity – Value of Yes Ltd.

= ₹5308.47 lakhs – ₹2708.915 lakhs = ₹2599.555 lakhs

(iii) Gain to Shareholders of Yes Ltd.

Share of Yes Ltd. in merged entity = ₹5308.47 lakhs x $\frac{1}{1.5}$ = ₹3538.98 lakhs

Gain to shareholder = Share of Yes Ltd. in merged entity – Value of Yes Ltd. before merger

= ₹3538.98 lakhs - ₹2708.915 = ₹830.065 lakhs

19. Impact of Financial Restructuring

(i) Benefits to Grape Fruit Ltd.

	₹ in lakhs
Reduction of liabilities payable	
Reduction in equity share capital (6 lakh shares x ₹75 per share)	450
Reduction in preference share capital (2 lakh shares x ₹50 per share)	100
Waiver of outstanding debenture Interest	26
Waiver from trade creditors (₹340 lakhs x 0.25)	85
	661
Revaluation of Assets	
Appreciation of Land and Building (₹450 lakhs - ₹200 lakhs)	250
Total (A)	911

(ii) Amount of ₹911 lakhs utilized to write off losses, fictious assets and over- valued assets.

Writing off profit and loss account	525
Cost of issue of debentures	5
Preliminary expenses	10
Provision for bad and doubtful debts	15
Revaluation of Plant and Machinery (₹300 lakhs – ₹180 lakhs)	120
Total (B)	675
Capital Reserve (A) – (B)	236

(iii) Balance sheet of Grape Fruit Ltd as at 31st March 2011 (after re-construction)

(₹ in lakhs)

Liabilities	Amount	Assets		Amount
12 lakhs equity shares of ₹ 25/- each	300	Land & Building		450
		Plant & Machinery		180
10% Preference shares of ₹ 50/- each	100	Furnitures & Fixtures		50
		Inventory		150
Capital Reserve	236	Sundry debtors	70	
9% debentures	200	Less: provision for		
Loan from Bank	74	Bad & doubtful debts.	15	55
Trade Creditors	255	Cash-at-Bank		280
		(Balancing figure)*		
	1165			1165

*Opening Balance of ₹130/- lakhs + Sale proceeds from issue of new equity shares ₹150/- lakhs.

20. (a) After the globalization of the Indian economy, accessibility to vast amount of resources

was available to the domestic corporate sector. One such accessibility was in terms of raising financial resources abroad by internationally prudent companies. Among others, GDRs were the most important source of finance from abroad at competitive cost. Global depository receipts are basically negotiable certificates denominated in US dollars, that represent a non- US company's publicly traded local currency (Indian rupee) equity shares. Companies in India, through the issue of depository receipts, have been able to tap global equity market to raise foreign currency funds by way of equity.

Since the inception of GDRs, a remarkable change in Indian capital market has been observed. Some of the changes are as follows:

(i) Indian capital market to some extent is shifting from Bombay to Luxemburg and other foreign financial centres.

(ii) There is arbitrage possibility in GDR issues. Since many Indian companies are actively trading on the London and the New York Exchanges and due to the existence of time differences, market news, sentiments etc. at times the prices of the depository receipts are traded at discounts or premiums to the underlying stock. This presents an arbitrage opportunity wherein the receipts can be bought abroad and sold in India at a higher price.

(iii) Indian capital market is no longer independent from the rest of the world. This puts additional strain on the investors as they now need to keep updated with worldwide economic events.

(iv) Indian retail investors are completely sidelined. Due to the placements of GDRs with Foreign Institutional Investor's on the basis free pricing, the retail investors can now no longer expect to make easy money on heavily discounted right/public issues.

(v) A considerable amount of foreign investment has found its way in the Indian market which has improved liquidity in the capital market.

(vi) Indian capital market has started to reverberate by world economic changes, good or bad.

(vii) Indian capital market has not only been widened but deepened as well.

(viii) It has now become necessary for Indian capital market to adopt international practices in its working including financial innovations.

(b) A firm dealing with foreign exchange may be exposed to foreign currency exposures. The exposure is the result of possession of assets and liabilities and transactions denominated in foreign currency. When exchange rate fluctuates, assets, liabilities, revenues, expenses that have been expressed in foreign currency will result in either foreign exchange gain or loss. A firm dealing with foreign exchange may be exposed to the following types of risks:

(i) Transaction Exposure: A firm may have some contractually fixed payments and receipts in foreign currency, such as, import payables, export receivables, interest payable on foreign currency loans etc. All such items are to be settled

in a foreign currency. Unexpected fluctuation in exchange rate will have favourable or adverse impact on its cash flows. Such exposures are termed as transactions exposures.

(ii) Translation Exposure: The translation exposure is also called accounting exposure or balance sheet exposure. It is basically the exposure on the assets and liabilities shown in the balance sheet and which are not going to be liquidated in the near future. It refers to the probability of loss that the firm may have to face because of decrease in value of assets due to devaluation of a foreign currency despite the fact that there was no foreign exchange transaction during the year.

(iii) Economic Exposure: Economic exposure measures the probability that fluctuations in foreign exchange rate will affect the value of the firm. The intrinsic value of a firm is calculated by discounting the expected future cash flows with appropriate discounting rate. The risk involved in economic exposure requires measurement of the effect of fluctuations in exchange rate on different future cash flows.

(c) Constraints on paying Dividedends

(i) Legal: Under Section 205(1) of the Companies Act 1956, dividend is to be paid out of current profits or past profits after depreciation. The Central Government can allow a company to pay dividend for any financial year out of profits of the company without providing for depreciation if it is in the public interest. Dividend is to be paid in cash but a company is allowed to capitalise profits or reserves (retained earnings) for issuing fully paid bonus shares. Capital profit may also be distributed as dividends if articles permit.

(ii) Liquidity: Payment of dividends means outflow of cash. Ability to pay dividends depends on cash and liquidity position of the firm. A mature company does not have much investment opportunities, nor are funds tied up in permanent working capital and, therefore has a sound cash position. For a growth oriented company in spite of good profits, it will need funds for expanding activities and permanent working capital and therefore it is not in a position to declare dividends.

(iii) Access to the Capital Market: By paying large dividends, cash position is affected. If new shares have to be issued to raise funds for financing investment programmes and if the existing shareholders cannot buy additional shares, control is diluted. Payment of dividends may be withheld and earnings areutilised for financing firm's investment opportunities.

(iv) Investment Opportunities: If investment opportunities are inadequate, it is better to pay dividends and raise external funds whenever necessary for such opportunities.

(d) Depending upon the features built into the factoring arrangement to cater to the varying needs of trade/citizens, there can be different kinds of factoring:

Recourse and Non-recourse Factoring: Under a recourse factoring arrangement, the factor has recourse to the client (firm) if the debt purchased/receivable factored turns out to be irrecoverable. In other words, the factor does not assume credit risks associated with the receivables. The factor does not have the right to recourse in the case of non-recourse factoring. The loss arising out of irrecoverable receivables is borne by him, as a compensation for which he charges a higher commission.

Advance and Maturity factoring: The factor paid a pre specified portion, ranging between three-fourths to nine tenths, of the factored receivables in advance, the balance being paid upon collection/on the guaranteed payment date. A drawing limit, as a pre- payment, is made available by the factor to the client as soon as the factored debts are approved/the invoices are accounted for. The client has to pay interest (discount) on the advance/repayment between the date of such payment and the date of actual collection from the customers/or the guaranteed payment date, determined on the basis of the prevailing short-term rate, the financial standing of the client and the volume of the turnover.

Full factoring: This is the most comprehensive form of factoring combining the features of all the factoring services specially those of non-recourse and advance factoring. It is also known as old line factoring.

Disclosed and undisclosed Factoring: In disclosed factoring, the name of the factor is disclosed in the invoice by the supplier-manufacturer of the goods asking the buyer to make payment to the factor, the name of the factor is not disclosed in the invoice in undisclosed factoring although the factor maintains the sales ledger of the supplier-manufacturer. The entire realization of the business transaction is done in the name of the supplier company but all control remains with the factor.

Domestic and export/Cross Border Factoring: If the three parties involved, namely, customer (buyer), client, (seller-supplier) and factor (financial intermediary) are domiciled in the same country then it is known as domestic factoring. There are usually four parties involved to a cross border factoring transaction. They are :

1. Exporter (client)
2. Importer (customer)
3. Export factor
4. Import Factor

It is also known as two-factor system.

(e) Treasury bills are short-term debt instruments of the Central Government, maturing in a period of less than one year. Treasury bills are issued by RBI on behalf of the Government of India for periods ranging from 14 days to 364 days through regular auctions. They are highly liquid instruments and issued to tide over short-term liquidity shortfalls.

Treasury bills are sold through an auction process according to a fixed auction calendar announced by the RBI. Banks and primary dealers are the major bidders in

the competitive auction process. Provident Funds and other investors can make non-competitive bids. RBI makes allocation to non-competitive bidders at a weighted average yield arrived at on the basis of the yields quoted by accepted competitive bids. These days the treasury bills are becoming very popular on account of falling interest rates. Treasury bills are issued at a discount and redeemed at par. Hence, the implicit yield on a treasury bill is a function of the size of the discount and the period of maturity. Now, these bills are becoming part of debt market. In India, the largest holders of the treasury bills are commercial banks, trust, mutual funds and provident funds. Although the degree of liquidity of treasury bills are greater than trade bills, they are not self liquidating as the genuine trade bills are. T-bills are claim against the government and do not require any grading or further endorsement or acceptance.