Paper – 2: STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS

Security Analysis

1. The closing value of Sensex for the month of October, 2007 is given below:

Date Closing	Sensex Value
1.10.07	2800
3.10.07	2780
4.10.07	2795
5.10.07	2830
8.10.07	2760
9.10.07	2790
10.10.07	2880
11.10.07	2960
12.10.07	2990
15.10.07	3200
16.10.07	3300
17.10.07	3450
19.10.07	3360
22.10.07	3290
23.10.07	3360
24.10.07	3340
25.10.07	3290
29.10.07	3240
30.10.07	3140
31.10.07	3260

You are required to test the weak form of efficient market hypothesis by applying the run test at 5% and 10% level of significance.

Following values at 18% degrees of freedom can be used:

Value of t at 5%	2.101
Value of t at 10%	1.734

Security Valuation

2. XYZ company has current earnings of ₹ 3 per share with 5,00,000 shares outstanding. The company plans to issue 40,000, 7% convertible preference shares of ₹ 50 each at par. The preference shares are convertible into 2 shares for each preference shares held. The equity share has a current market price of ₹ 21 per share.

   (i) What is preference share's conversion value?

   (ii) What is conversion premium in %?

   (iii) Assuming that total earnings remain the same, calculate the effect of the issue on the basic earning per share (a) before conversion (b) after conversion.

   (iv) If profits after tax increases by ₹ 1 million what will be the basic EPS (a) before conversion and (b) on a fully diluted basis?

3. A share of Tension-free Economy Ltd. is currently quoted at, a price earnings ratio of 7.5 times. The expected retained earnings per share being 37.5% is ₹ 3 per share. Compute:

   (a) The company's cost of equity, if investors expect annual growth rate of 12%.

   (b) If anticipated growth rate is 13% p.a., calculate the indicated market price, with same cost of capital.

   (c) If the company's cost of capital is 18% and anticipated growth rate is 15% p.a., calculate the market price per share, assuming other conditions remain the same.

Portfolio Management

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

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

*likelihood of being called at a premium over par.

Compute the current value of his uncle's portfolio.

PVF @12%

Year	1	2	3	4	5
PVF	0.893	0.797	0.712	0.636	0.567

Note: Round Off Calculations with no decimal points

5. Ankit has a fund of ₹ 10 lacs which he wants to invest in share market with rebalancing target after every 15 days to start with for a period of one month from now. The present NIFTY is 19679. The minimum NIFTY within a month can at most be 18104.68. He wants to know as to how he should rebalance his portfolio under the following situations, according to the theory of Constant Proportion Portfolio Insurance Policy, using "2" as the multiplier:

   (1) Immediately to start with.

   (2) 15 days later-being the 1st day of rebalancing if NIFTY falls to 19088.63.

   (3) 15 days further from the above date if the NIFTY touches 20997.493.

   Note: Assume that the value of his equity component will change in tandem with that of the NIFTY.

Mutual Funds

6. On 01-07-2010, Mr. X Invested ₹ 50,000/- at initial offer in Mutual Funds at a face value of ₹ 10 each per unit. On 31-03-2011, a dividend was paid @ 10% and annualized yield was 120%. On 31-03-2012, 20% dividend and capital gain of ₹ 0.60 per unit was given. Mr. X redeemed all his 6271.98 units when his annualized yield was 71.50% over the period of holding. Calculate NAV as on 31-03-2011, 31-03-2012 and 31-03-2013.

   Note: For calculations consider a year of 12 months.

Derivatives Analysis & Valuation

7. 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 if initial margin is 8%?

Foreign Exchange Exposure & Risk Management

8. The following table shows interest rates for the United States Dollar and French Franc. The spot exchange rate is 7.05 Franc per Dollar. Complete the missing entries:

	3 Months	6 Months	1 Year
Dollar interest rate (annually compounded)	11½%	12¼%	?
Franc interest rate (annually compounded)	19½%	?	20%
Forward Franc per Dollar	?	?	7.5200
Forward discount per Franc (percent per year)	?	6.3%	

9. Suppose you are a treasurer of XYZ plc in the UK. XYZ have two overseas subsidiaries, one based in Amsterdam and one in Switzerland. The Dutch subsidiary has surplus Euros in the amount of 725,000 which it does not need for the next three months but which will be needed at the end of that period (91 days). The Swiss subsidiary has a surplus of Swiss Francs in the amount of 998,077 that, again, it will need on day 91. The XYZ plc in UK has a net balance of £75,000 that is not needed for the foreseeable future.

Given the rates below, what is the advantage of swapping Euros and Swiss Francs into Sterling?

Spot Rate (€)	£0.6858- 0.6869
91 day Pts	0.0037 0.0040
Spot Rate (£)	CHF 2.3295-2.3326
91 day Pts	0.0242 0.0228

Interest rates for the Deposits

Amount of Currency	91 day Interest Rate % pa		
	£	€	CHF
0 – 100,000	1	¼	0
100,001 – 500,000	2	1½	¼
500,001 – 1,000,000	4	2	½
Over 1,000,000	5.375	3	1

Note: For calculation purpose use 360 Days a year.

International Financial Management

10. Odessa Limited has proposed to expand its operations for which it requires funds of $ 15 million, net of issue expenses which amount to 2% of the issue size. It proposed to raise the funds though a GDR issue. It considers the following factors in pricing the issue:

(i) The expected domestic market price of the share is ₹ 300 (Face Value ₹ 10 per share)

(ii) 3 shares underly each GDR

(iii) Underlying shares are priced at 10% discount to the market price

(iv) Expected exchange rate is ₹ 60/$

You are required to compute:

(a) the number of GDR's to be issued and

(b) cost of GDR to Odessa Limited, if 20% dividend is expected to be paid with a growth rate of 20%.

Interest Rate Risk Management

11. The following market data is available:

Spot USD/JPY 116.00

Deposit rates p.a.	USD	JPY
3 months	4.50%	0.25%
6 months	5.00%	0.25%

a. Whether 3 months FRA rate at 3 months forward for Yen should be Nil or not.

b. What should be 3 months FRA rate at 3 months forward?

c. Analyse is any arbitrage opportunity available if the 6 & 12 months LIBORS for USD are 5% & 6.5% respectively and Bank XYZ is quoting 6/12 USD FRA at 6.50 – 6.75%.?

Corporate Valuation

12. BRS Inc deals in computer and IT hardwares and peripherals. The expected revenue for the next 8 years is as follows:

Years	Sales Revenue ($ Million)
1	8
2	10
3	15
4	22
5	30
6	26
7	23
8	20

Summarized financial position as on 31 March 2012 was as follows:

$ Million

Liabilities	Amount	Assets	Amount
Equity Stocks	12	Fixed Assets (Net)	17
12% Bonds	8	Current Assets	3
	20		20

Additional Information:

(a) Its variable expenses is 40% of sales revenue and fixed operating expenses (cash) are estimated to be as follows:

Period	Amount ($ Million)
1- 4 years	1.6
5-8 years	2

(b) An additional advertisement and sales promotion campaign shall be launched requiring expenditure as per following details:

Period	Amount ($ Million)
1 year	0.50
2-3 years	1.50
4-6 years	3.00
7-8 years	1.00

(c) Fixed assets are subject to depreciation at 15% as per WDV method.

(d) The company has planned additional capital expenditures (in the beginning of each year) for the coming 8 years as follows:

Period	Amount ($ Million)
1	0.50
2	0.80
3	2.00
4	2.50
5	3.50
6	2.50
7	1.50
8	1.00

(e) Investment in Working Capital is estimated to be 20% of Revenue.

(f) Applicable tax rate for the company is 30%.

(g) Cost of Equity is estimated to be 16%.

(h) The Free Cash Flow of the firm is expected to grow at 5% per annum after 8 years.

With above information you are required to determine the:

(i) Value of Firm

(ii) Value of Equity

Notes: (i) PVF Table @ 13%

Year	1	2	3	4	5	6	7	8
PVF	0.885	0.783	0.693	0.613	0.543	0.480	0.425	0.376

(ii) Round off calculations upto 2 decimal points.

Mergers, Acquisitions & Corporate Restructuring

13. The following is the Balance-sheet of GFC Ltd as at March 31st, 2021.

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
13% Debentures	200	Furniture and Fixtures	50
Debenture interest accrued and payable	26	Inventory	150
Loan from bank	74	Sundry debtors	70
Trade creditors	340	Cash at bank	130
		Preliminary expenses	10
		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:

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

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

(c) 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.

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

(e) 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.

(f) 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.

Theoretical Questions

14. As per GSR Notification dated 19th February 2019, what conditions an entity need to satisfy to be considered as a startup?

15. Explain pricing of the securitized instruments.

SUGGESTED ANSWERS/HINTS

1.

Date	Closing Sensex	Sign of Price Charge
1.10.07	2800	
3.10.07	2780	-
4.10.07	2795	+
5.10.07	2830	+
8.10.07	2760	-
9.10.07	2790	+
10.10.07	2880	+
11.10.07	2960	+
12.10.07	2990	+
15.10.07	3200	+
16.10.07	3300	+
17.10.07	3450	+
19.10.07	3360	-
22.10.07	3290	-
23.10.07	3360	+
24.10.07	3340	-
25.10.07	3290	-

29.10.07	3240	-
30.10.07	3140	-
31.10.07	3260	+

Total of sign of price changes (r) = 8

No of Positive changes = $n_1 = 11$

No. of Negative changes = $n_2 = 8$

$$\mu_r = \frac{2n_1n_2}{n_1+n_2}+1$$

$$\mu = \frac{2\times 11\times 8}{11+8}+1 = 176/19 + 1 = 10.26$$

$$\hat{\sigma}_r = \sqrt{\frac{2n_1n_2(2n_1n_2-n_1-n_2)}{(n_1+n_2)^2(n_1+n_2-1)}}$$

$$\hat{\sigma}_r = \sqrt{\frac{(2\times 11\times 8)\,(2\times 11\times 8-11-8)}{(11+8)^2(11+8-1)}} = \sqrt{\frac{176\times 157}{(19)^2(18)}} = \sqrt{4.252} = 2.06$$

Since too few runs in the case would indicate that the movement of prices is not random. We employ a two- tailed test the randomness of prices.

Test at 5% level of significance at 18 degrees of freedom using t-table

The lower limit

$= \mu - t \times \hat{\sigma}_r = 10.26 - 2.101 \times 2.06 = 5.932$

Upper limit

$= \mu + t \times \hat{\sigma}_r = 10.26 + 2.101 \times 2.06 = 14.588$

At 10% level of significance at 18 degrees of freedom

Lower limit

$= 10.26 - 1.734 \times 2.06 = 6.688$

Upper limit

$= 10.26 + 1.734 \times 2.06 = 13.832$

As seen r lies between these limits. Hence, the market exhibits weak form of efficiency.

*For a sample of size n, the t distribution will have n-1 degrees of freedom.

2. (i) Conversion value of preference share

Conversion Ratio x Market Price

2 × ₹ 21 = ₹ 42

(ii) Conversion Premium

(₹ 50/ ₹ 42) – 1 = 19.05%

(iii) Effect of the issue on basic EPS

	₹
Before Conversion	
Total (after tax) earnings ₹ 3 × 5,00,000	15,00,000
Dividend on Preference shares	1,40,000
Earnings available to equity holders	13,60,000
No. of shares	5,00,000
EPS	2.72
On Diluted Basis	
Earnings	15,00,000
No of shares (5,00,000 + 80,000)	5,80,000
EPS	2.59

(iv) EPS with increase in Profit

	₹
Before Conversion	
Earnings	25,00,000
Dividend on Pref. shares	1,40,000
Earning for equity shareholders	23,60,000
No. of equity shares	5,00,000
EPS	4.72
On Diluted Basis	
Earnings	25,00,000
No. of shows	5,80,000
EPS	4.31

3. (a) Calculation of cost of capital

Retained earnings	37.5%	₹ 3 per share
Dividend*	62.5%	₹ 5 per share
EPS	100.0%	₹ 8 per share

P/E ratio 7.5 times

Market price is ₹ 7.5 × 8 = ₹ 60 per share

Cost of equity capital = (Dividend/price × 100) + growth %

= (5/60 × 100) + 12% = 20.33%.

$$* \left(\frac{₹\,3}{37.5} \times 62.5 = ₹\,5 \right)$$

(b) Market price = Dividend/(cost of equity capital % – growth rate %) = 5/(20.33% – 13%) = 5/7.33% = ₹ 68.21 per share.

(c) Market price = Dividend/(cost of equity capital % – growth rate %) = 5/(18% – 15%) = 5/3% = ₹ 166.66 per share.

4. Computation of current value of John's portfolio

(i) 10 Nos. Bond A, ₹ 1,000 par value, 9% Bonds maturity 3 years:

	₹
Current value of interest on bond A	
1-3 years: ₹ 900 × Cumulative P.V. @ 12% (1-3 years) = ₹ 900 × 2.402	2,162
Add: Current value of amount received on maturity of Bond A	
End of 3rd year: ₹ 1,000 × 10 × P.V. @ 12% (3rd year) = ₹ 10,000 × 0.712	7,120
	9,282

(ii) 10 Nos. Bond B, ₹ 1,000 par value, 10% Bonds maturity 5 years:

Current value of interest on bond B	
1-5 years: ₹ 1,000 × Cumulative P.V. @ 12% (1-5 years) = ₹ 1,000 × 3.605	3,605
Add: Current value of amount received on maturity of Bond B	
End of 5th year: ₹ 1,000 × 10 × P.V. @ 12% (5th year) = ₹ 10,000 × 0.567	5,670
	9,275

(iii) 100 Preference shares C, ₹ 100 par value, 11% coupon

$$\frac{11\% \times 100 \text{ Nos.} \times ₹\ 100}{13\%} = \frac{1{,}100}{0.13}$$ 8,462

(iv) 100 Preference shares D, ₹ 100 par value, 12% coupon

$$\frac{12\% \times 100 \text{ Nos.} \times ₹\ 100}{13\%} = \frac{1{,}200}{0.13}$$ 9,231

Total current value of his portfolio [(i) + (ii) + (iii) + (iv)] 36,250

5. Maximum decline in one month = $\frac{19679 - 18104.68}{19679} \times 100 = 8\%$

(1) Immediately to start with

Investment in equity = Multiplier x (Portfolio value – Floor value)

= 2 (10,00,000 – 9,20,000) = ₹ 1,60,000

Ankit may invest ₹ 1,60,000 in equity and balance in risk free securities.

(2) After 15 days

Value of equity = 1,60,000 x 19088.63 / 19679	=	₹ 1,55,200
Value of risk free investment	=	₹ 8,40,000
Total value of portfolio	=	₹ 9,95,200

Investment in equity = Multiplier x (Portfolio value – Floor value)

= 2 (9,95,200 – 9,20,000)	=	₹ 1,50,400
Revised Portfolio:		
Equity	=	₹ 1,50,400
Risk free Securities = ₹ 9,95,200 – ₹ 1,50,400	=	₹ 8,44,800

(3) After another 15 days

Value of equity = 1,50,400 x 20997.493 / 19088.63	=	₹ 1,65,440
Value of risk free investment	=	₹ 8,44,800
Total value of portfolio	=	₹ 10,10,240

Investment in equity = Multiplier x (Portfolio value – Floor value)

= 2 (10,10,240 – 9,20,000)	=	₹ 1,80,480
Revised Portfolio:		
Equity	=	₹ 1,80,480

Risk Free Securities = ₹ 10,10,240 – ₹ 1,80,480 = ₹ 8,29,760

Ankit should off-load ₹ 15,040 of risk free securities and divert to Equity.

6. Yield for 9 months (120% x 9/12) = 90%

Market value of Investments as on 31.03.2011= ₹ 50,000 + (₹ 50,000x 90%) = ₹ 95,000

Therefore, NAV as on 31.03.2011 = (₹ 95,000 - ₹ 5,000)/5,000 = ₹ 18.00

Since dividend was reinvested by Mr. X, additional units acquired = $\frac{₹\ 5,000}{₹\ 18}$ = 277.78 unit

Therefore, units as on 31.03.2011 = 5,000 + 277.78 = 5,277.78

Alternatively, units as on 31.03.2011 = (₹ 95,000/₹18) = 5,277.78

Dividend as on 31.03.2012= 5,277.78 x ₹ 10 x 0.2 = ₹10,555.56

Capital Gain (5277.78 x ₹ 0.60) = ₹ 3,166.67

= ₹13,722.23

Let X be the NAV on 31.03.2012, then number of new units reinvested will be ₹13,722.23/X.

Accordingly, 6,271.98 units shall consist of reinvested units and 5277.78 (as on 31.03.2011).

Thus, by way of equation it can be shown as follows:

$$6,271.98 = \frac{₹13,722.23}{X} + 5,277.78$$

Therefore, NAV as on 31.03.2012 = ₹ 13,722.23/ (6,271.98 – 5,277.78) = ₹ 13.80

NAV as on 31.03.2013 = ₹ 50,000 (1+0.715x33/12)/6,271.98 = ₹ 23.65

7. 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 change in Spot Prices

σF = Standard deviation of change on Future Prices

ρ = coefficient of correlation between ΔS and ΔF

H = Hedge Ratio

Accordingly

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

No. of contract to be short to achieve a perfect hedge = 10 x 0.5 = 5

Amount to be paid as initial margin= 0.50 x 10 x 1000 x ₹ 474 x 8% = ₹ 1,89,600

8. Computation of Missing Entries in the Table: For computing the missing entries in the table we will use Interest Rates Parity (IRP) theorem

$$\text{or } \frac{(1+r_f)}{(1+r_d)} = \frac{S_{f/d}}{F_{f/d}}$$

Where,

r_f is the rate of interest of country F (say the foreign country)

r_d is rate of interest of country D (say domestic country)

$S_{f/d}$ is the spot rate between the two countries F and D and

$F_{f/d}$ is the forward rate between the two countries F and D.

(i) 3 months

(1) Dollar interest rate = $11\frac{1}{2}\%$ (annually compounded)

Franc interest rate = $19\frac{1}{2}\%$ (annually compounded)

Then Forward Franc per Dollar rate would be:

$$= 7.05 \left(\frac{1+\frac{0.195}{4}}{1+\frac{0.115}{4}} \right) = 7.05 \left(\frac{1+0.04875}{1+0.02875} \right)$$

= Franc 7.19 per US Dollar

(2) Further Forward discount per Franc per cent per year = Interest Differential i.e.

$= 19\frac{1}{2}\% - 11\frac{1}{2}\% = 8\%$

Alternatively, more precisely it can also be computed as follows:

Spot per Franc Rate = 1 / 7.05 = US Dollar 0.142 per Franc

One Year Forward Rate = $0.142 \left(\frac{1+0.115}{1+0.195}\right)$ = US Dollar 0.132 per Franc

Accordingly, the discount per annum will be = $\frac{0.142-0.132}{0.142} \times 100 = 7.04\%$

Alternatively, it can also be computed using forward rate computed above as follows:

Forward per Franc Rate = 1/7.19 = 0.139

Accordingly, the discount per annum will be = $\frac{0.142-0.139}{0.142} \times \frac{12}{3} \times 100 = 8.45\%$

(ii) 6 months

(1) Forward discount on Franc % per year = – 6.3% or – 3.15% for 6 months

Spot per Franc Rate = US$ 0.142

Forward per Franc Rate = US$ 0.142 × (1 – 0.0315)

= US$ 0.138

Accordingly, Forward Francs per US$ = 1/0.138 = 7.25

Alternatively, it can also be computed as follows:

6 months Forward rate = 7.05/ (100% – 3.15%)

Forward Francs per Dollar = 7.28 Francs

(2) Let r be the Franc interest rate (annually compounded) then as per IRP Theory:

$7.05 \left(\frac{1+\frac{r}{2}}{1+\frac{0.1225}{2}}\right)$ = Franc 7.25 per Dollar

On solving the equation, we get the value r = 18.27% i.e. Franc Interest rate (annually compounded)

Alternatively, it can also be computed as follows:

$7.05 \left(\frac{1+\frac{r}{2}}{1+\frac{0.1225}{2}}\right)$ = Franc 7.28 per Dollar

On solving the equation we get the value of r = 19.17% i.e. Franc interest rate (annually compounded)

(iii) 1 Year

Franc interest rate = 20% (annually compounded)

Forward Franc per Dollar = 7.5200

As per Interest Rate Parity the relationship between the two countries rate and spot rate is

$$7.52 = 7.05\left(\frac{1+\text{Franc Interest Rate}}{1+\text{Dollar Interest Rate}}\right)$$

$$\text{i.e.} \quad = \frac{1 + \text{Dollar interest rate}}{1 + 0.20} = \frac{7.05}{7.52}$$

Accordingly, the Dollar interest rate = 1.20 × 0.9374 – 1 = 1.125 – 1 = 0.125 or 12.5%

The completed Table will be as follows:

	3 Months	6 Months	1 Year
Dollar interest rate (annually compounded)	11½%	12¼%	12.50%
Franc interest rate (annually compounded)	19½%	19.17% or 18.27%	20%
Forward Franc per Dollar	7.19	7.25 or 7.28	7.5200
Forward discount per Franc percent per year	8% or 7.04% or 8.45%	6.3%	

9. Individual Basis

	Interest	Amt. after 91 days	Conversion in £
Holland € 725,000 x 0.02 x 91/360 =	€ 3,665.28	€ 728,665.28	£502,414.71 (728,665.28 x 0.6895)
Switzerland CHF 998,077 x 0.005 x 91/360 =	CHF 1,261.46	CHF 999,338.46	£432,651.51 (999,338.46÷2.3098)
UK £ 75,000 x 0.01 x 91/360 =	£ 189.58	£ 75,189.58	£ 75,189.58
Total GBP at 91 days			£ 1,010,255.80

Swap to Sterling

Sell € 7,25,000 (Spot at 0.6858) buy £	£ 4,97,205.00
Sell CHF 9,98,077(Spot at 2.3326) buy £	£ 4,27,881.76
Independent GBP amount	£ 75,000.00
	£ 1,000,086.76
Interest (£ 1,000,086.76 x 0.05375 x 91/360)	£ 13,587.98
Total GBP at 91 days	£ 1,013,674.74
Less: Total GBP at 91 days as per individual basis	£ 1,010,255.80
Net Gain	£ 3,418.94

10. Net Issue Size = $15 million

Gross Issue = $\frac{\$15 \text{million}}{0.98}$ = $15.306 million

Issue Price per GDR in ₹ (300 x 3 x 90%) ₹ 810

Issue Price per GDR in $ (₹ 810/ ₹ 60) $13.50

Dividend Per GDR (D_1) = ₹ 2 x 3 = ₹ 6

Net Proceeds Per GDR = ₹ 810 x 0.98 = ₹ 793.80

(a) Number of GDR to be issued

$$\frac{\$15.306 \text{ million}}{\$13.50} = 1.1338 \text{ million}$$

(b) Cost of GDR to Odessa Ltd.

$$k_e = \frac{6.00}{793.80} + 0.20 = 20.76\%$$

11. (a) The FRA on Yen shall be Nil as interest rate for both periods i.e. 3 months and 6 months are same.

(b) 3 Months Interest rate is 4.50% p.a. & 6 Months Interest rate is 5% p.a.

Future Value 6 Months from now is a product of Future Value 3 Months now & 3 Months

Future Value from after 3 Months.

$(1+0.05*6/12) = (1+0.045*3/12) \times (1+i_{3,6} *3/12)$

$i_{3,6} = [(1+0.05* 6/12) /(1+0.045 *3/12) – 1] *12/3$

i.e. 5.44% p.a.

(c) 6 Months Interest rate is 5% p.a. & 12 Month interest rate is 6.5% p.a.

Future value 12 month from now is a product of Future value 6 Months from now and 6

Months Future value from after 6 Months.

$(1+0.065) = (1+0.05*6/12) \times (1+i_{6,6}*6/12)$

$i_{6,6} = [(1+0.065/1.025) - 1] *12/6$

6 Months forward 6 month rate is 7.80% p.a.

The Bank is quoting 6/12 USD FRA at 6.50 – 6.75%

Therefore, there is an arbitrage Opportunity of earning interest @ 7.80% p.a. & Paying @ 6.75%

Borrow for 6 months, buy an FRA & invest for 12 months

To get $ 1.065 at the end of 12 months for $ 1 invested today

To pay $ 1.060# at the end of 12 months for every $ 1 Borrowed today

Net gain $ 0.005 i.e. risk less profit for every $ borrowed

(1+0.05/2) (1+.0675/2) = (1.05959) say 1.060

12. Working Notes:

(a) Determination of Weighted Average Cost of Capital

Sources of funds	Cost (%)	Proportions	Weights	Weighted Cost
Equity Stock	16	12/20	0.60	9.60
12% Bonds	12% (1-0.30) = 8.40	8/20	0.40	3.36
				12.96 say 13

(b) Schedule of Depreciation **$ Million**

Year	Opening Balance of Fixed Assets	Addition during the year	Total	Depreciation @ 15%
1	17.00	0.50	17.50	2.63
2	14.87	0.80	15.67	2.35
3	13.32	2.00	15.32	2.30
4	13.02	2.50	15.52	2.33
5	13.19	3.50	16.69	2.50

6	14.19	2.50	16.69	2.50
7	14.19	1.50	15.69	2.35
8	13.34	1.00	14.34	2.15

(c) Determination of Investment **$ Million**

Year	Investment Required			Existing Investment in CA	Additional Investment required
	For Capital Expenditure	CA (20% of Revenue)	Total		
1	0.50	1.60	2.10	3.00	0.00
2	0.80	2.00	2.80	2.50*	0.30
3	2.00	3.00	5.00	2.00**	3.00
4	2.50	4.40	6.90	3.00	3.90
5	3.50	6.00	9.50	4.40	5.10
6	2.50	5.20	7.70	6.00	1.70
7	1.50	4.60	6.10	5.20	0.90
8	1.00	4.00	5.00	4.60	0.40

* Balance of CA in Year 1 ($3 Million) – Capital Expenditure in Year 1($ 0.50 Million)

** Similarly balance of CA in Year 2 ($2.80) – Capital Expenditure in Year 2($ 0.80 Million)

(d) Determination of Present Value of Cash Inflows **$ Million**

Particulars	Years							
	1	2	3	4	5	6	7	8
Revenue (A)	8.00	10.00	15.00	22.00	30.00	26.00	23.00	20.00
Less: Expenses								
Variable Costs	3.20	4.00	6.00	8.80	12.00	10.40	9.20	8.00
Fixed cash operating cost	1.60	1.60	1.60	1.60	2.00	2.00	2.00	2.00
Advertisement Cost	0.50	1.50	1.50	3.00	3.00	3.00	1.00	1.00
Depreciation	2.63	2.35	2.30	2.33	2.50	2.50	2.35	2.15
Total Expenses (B)	7.93	9.45	11.40	15.73	19.50	17.90	14.55	13.15
EBIT (C) = (A) - (B)	0.07	0.55	3.60	6.27	10.50	8.10	8.45	6.85
Less: Taxes@30% (D)	0.02	0.16	1.08	1.88	3.15	2.43	2.53	2.06
NOPAT (E) = (C) - (D)	0.05	0.39	2.52	4.39	7.35	5.67	5.92	4.79

Gross Cash Flow (F) = (E) + Dep	2.68	2.74	4.82	6.72	9.85	8.17	8.27	6.94
Less: Investment in Capital Assets plus Current Assets (G)	0	0.30	3.00	3.90	5.10	1.70	0.90	0.40
Free Cash Flow (H) = (F) - (G)	2.68	2.44	1.82	2.82	4.75	6.47	7.37	6.54
PVF@13% (I)	0.885	0.783	0.693	0.613	0.543	0.480	0.425	0.376
PV (H)(I)	2.37	1.91	1.26	1.73	2.58	3.11	3.13	2.46

Total present value = $ 18.549 million

(e) Determination of Present Value of Continuing Value (CV)

$$CV = \frac{FCF_9}{k-g} = \frac{\$6.54\,\text{million}(1.05)}{0.13-0.05} = \frac{\$6.867\,\text{million}}{0.08} = \$85.84\ \text{million}$$

Present Value of Continuing Value (CV) = $85.84 million X $PVF_{13\%,8}$ = $85.96875 million X 0.376 = $32.27 million

(i) Value of Firm	**$ Million**
Present Value of cash flow during explicit period	18.55
Present Value of Continuing Value	32.27
Total Value	50.82

(ii) Value of Equity	**$ Million**
Total Value of Firm	50.82
Less: Value of Debt	8.00
Value of Equity	42.82

13. Impact of Financial Restructuring

(i) Benefits to GFC Ltd.

₹ in lakhs

(a)	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

(b)	Revaluation of Assets	
	Appreciation of Land and Building (₹ 450 lakhs - ₹ 200 lakhs)	250
	Total (A)	911

(ii) Amount of ₹ 911 lakhs to be utilized to write off losses, fictitious assets and over-valued assets as follows:

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 GFC Ltd as at 31st March 2021 (after re-construction)

(₹ in lakhs)

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

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

14. As per GSR Notification 127 (E) dated 19th February 2019, an entity shall be considered as a Startup:

i. Upto a period of ten years from the date of incorporation/ registration, if it is incorporated as a private limited company (as defined in the Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008) in India.

ii. Turnover of the entity for any of the financial years since incorporation/ registration has not exceeded one hundred crore rupees.

iii. Entity is working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation.

Provided that an entity formed by splitting up or reconstruction of an existing business shall not be considered a 'Startup'.

15. Pricing of securitized instruments is an important aspect of securitization. While pricing the instruments, it is important that it should be acceptable to both originators as well as to the investors. On the same basis pricing of securities can be divided into following two categories:

(1) From Originator's Angle

From originator's point of view, the instruments can be priced at a rate at which originator has to incur an outflow and if that outflow can be amortized over a period of time by investing the amount raised through securitization.

(2) From Investor's Angle

From an investor's angle security price can be determined by discounting best estimate of expected future cash flows using rate of yield to maturity of a security of comparable security with respect to credit quality and average life of the securities. This yield can also be estimated by referring the yield curve available for marketable securities, though some adjustments is needed on account of spread points, because of credit quality of the securitized instruments.