PAPER – 2: STRATEGIC FINANCIAL MANAGEMENT

QUESTIONS

Security Analysis and Valuation

1. Mr. A will need ₹ 1,00,000 after two years for which he wants to make one-time necessary investment now. He has a choice of two types of bonds. Their details are as below:

	Bond X	Bond Y
Face value	₹ 1,000	₹ 1,000
Coupon	7% payable annually	8% payable annually
Years to maturity	1	4
Current price	₹ 972.73	₹ 936.52
Current yield	10%	10%

Advice Mr. A whether he should invest all his money in one type of bond or he should buy both the bonds and, if so, in which quantity? Assume that there will not be any call risk or default risk.

2. The following data is related to 8.5% Fully Convertible (into Equity shares) Debentures issued by JAC Ltd. at ₹ 1000.

Market Price of Debenture	₹ 900
Conversion Ratio	30
Straight Value of Debenture	₹ 700
Market Price of Equity share on the date of Conversion	₹ 25
Expected Dividend Per Share	₹ 1

You are required to calculate:

(a) Conversion Value of Debenture

(b) Market Conversion Price

(c) Conversion Premium per share

(d) Ratio of Conversion Premium

(e) Premium over Straight Value of Debenture

(f) Favourable income differential per share

(g) Premium pay back period

Portfolio Theory

3. Mr. A is interested to invest ₹ 1,00,000 in the securities market. He selected two securities B and D for this purpose. The risk return profile of these securities are as follows:

Security	Risk (σ)	Expected Return (ER)
B	10%	12%
D	18%	20%

Co-efficient of correlation between B and D is 0.15.

You are required to calculate the portfolio return of the following portfolios of B and D to be considered by A for his investment.

(i) 100 percent investment in B only;

(ii) 50 percent of the fund in B and the rest 50 percent in D;

(iii) 75 percent of the fund in B and the rest 25 percent in D; and

(iv) 100 percent investment in D only.

Also indicate that which portfolio is best for him from risk as well as return point of view?

4. A Portfolio Manager (PM) has the following four stocks in his portfolio:

Security	No. of Shares	Market Price per share (₹)	β
VSL	10,000	50	0.9
CSL	5,000	20	1.0
SML	8,000	25	1.5
APL	2,000	200	1.2

Compute the following:

(i) Portfolio beta.

(ii) If the PM seeks to reduce the beta to 0.8, how much risk free investment should he bring in?

(iii) If the PM seeks to increase the beta to 1.2, how much risk free investment should he bring in?

Mutual Fund

5. Five portfolios experienced the following results during a 7- year period:

Portfolio	Average Annual Return (R_p) (%)	Standard Deviation (S_p)	Correlation with the market returns (r)
A	19.0	2.5	0.840

B	15.0	2.0	0.540
C	15.0	0.8	0.975
D	17.5	2.0	0.750
E	17.1	1.8	0.600
Market Risk (σ_m)	--	1.2	
Market rate of Return (R_m)	14.0		
Risk-free Rate (R_f)	9.0		

Rank the portfolios using (a) Sharpe's method, (b) Treynor's method and (c) Jensen's Alpha

Indian Capital Market

6. A company is long on 10 MT of copper @ ₹ 534 per kg (spot) and intends to remain so for the ensuing quarter. The variance of change in its spot and future prices are 16% and 36% respectively, having correlation coefficient of 0.75. The contract size of one contract is 1,000 kgs.

   Required:

   (i) Calculate the Optimal Hedge Ratio for perfect hedging in Future Market.

   (ii) Advice the position to be taken in Future Market for perfect hedging.

   (iii) Determine the number and the amount of the copper futures to achieve a perfect hedge.

7. Details about portfolio of shares of an investor is as below:

Shares	No. of shares (lakh)	Price per share	Beta
A Ltd.	3.00	₹ 500	1.40
B Ltd.	4.00	₹ 750	1.20
C Ltd.	2.00	₹ 250	1.60

The investor thinks that the risk of portfolio is very high and wants to reduce the portfolio beta to 0.91. He is considering two below mentioned alternative strategies:

(i) Dispose off a part of his existing portfolio to acquire risk free securities, or

(ii) Take appropriate position on Nifty Futures which are currently traded at 8125 and each Nifty points is worth ₹ 200.

You are required to determine:

(a) portfolio beta,

(b) the value of risk free securities to be acquired,

(c) the number of shares of each company to be disposed off,

(d) the number of Nifty contracts to be bought/sold; and

(e) the value of portfolio beta for 2% rise in Nifty.

8. Derivative Bank entered into a swap arrangement on a principal of ₹ 10 crores and agreed to receive MIBOR overnight floating rate for a fixed payment on the principal. The swap was entered into on Monday, 19th August, 2019 and was to commence on 20th August, 2019 and run for a period of 7 days.

Respective MIBOR rates for Tuesday to Monday were: 8.15%, 7.98%, 7.95%, 8.12%, 8.15%, 7.75%.

If Fixed Rate of Interest is 8%, then evaluate

(i) the nature of this Swap arrangement.

(ii) the Net Settlement amount.

Notes:

(1) Sunday is Holiday.

(2) Work in rounded rupees and avoid decimal working.

(3) Consider 365 days in a year.

Foreign Exchange Exposure and Risk Management

9. Your bank's London office has surplus funds to the extent of USD 5,00,000 for a period of 3 months. The cost of the funds to the bank is 4% p.a. It proposes to invest these funds in London, New York or Frankfurt and obtain the best yield, without any exchange risk to the bank. The following rates of interest are available at the three centres for investment of domestic funds there at for a period of 3 months.

London	5% p.a.
New York	8% p.a.
Frankfurt	3% p.a.

The market rates in London for US dollars and Euro are as under:

London on New York	
Spot	1.5350/90
1 month	15/18
2 month	30/35
3 months	80/85
London on Frankfurt	
Spot	1.8260/90

1 month	60/55
2 month	95/90
3 month	145/140

At which centre, investment will be made & what will be the net gain (to the nearest pound) to the bank on the invested funds?

10. XYZ Ltd. has imported goods to the extent of US$ 8 Million. The payment terms are as under:

(a) 1% discount if full amount is paid immediately; or

(b) 60 days interest free credit. However, in case of a further delay up to 30 days, interest at the rate of 8% p.a. will be charged for additional days after 60 days. M/s XYZ Ltd. has ₹ 25 Lakh available and for remaining it has an offer from bank for a loan up to 90 days @ 9.0% p.a.

The quotes for foreign exchange are as follows:

Spot Rate INR/ US$ (buying)	₹ 66.98
60 days Forward Rate INR/ US$ (buying)	₹ 67.16
90 days Forward Rate INR/ US$ (buying)	₹ 68.03

Advise which one of the following options would be better for XYZ Ltd.

(i) Pay immediately after utilizing cash available and for balance amount take 90 days loan from bank.

(ii) Pay the supplier on 60th day and avail bank's loan (after utilizing cash) for 30 days.

(iii) Avail supplier offer of 90 days credit and utilize cash available.

Further presume that the cash available with XYZ Ltd. will fetch a return of 4% p.a. in India till it is utilized.

Assume year has 360 days. Ignore Taxation.

Compute your working upto four decimals and cash flows in Crore.

International Financial Management

11. A USA based company is planning to set up a software development unit in India. Software developed at the Indian unit will be bought back by the US parent at a transfer price of US $10 millions. The unit will remain in existence in India for one year; the software is expected to get developed within this time frame.

The US based company will be subject to corporate tax of 30 per cent and a withholding tax of 10 per cent in India and will be eligible for tax credit in India. The software developed will be sold in the US market and many companies are ready to acquire the same. Other estimates are as follows:

Rent for fully furnished unit with necessary hardware in India	₹ 18,75,000
Manpower cost (80 software professional will be working for 10 hours each day)	500 per man hour
Administrative and other costs	₹ 15,00,000

Advise the US Company the minimum amount it should charge from the prospective buyer. The rupee-dollar rate is ₹ 60/$.

Note: Assume 365 days a year.

Mergers, Acquisitions & Corporate Restructuring

12. STR Ltd.'s current financial year's income statement reported its net income after tax as ₹ 50 Crore.

Following is the capital structure of STR Ltd. at the end of current financial year:

	₹
Debt (Coupon rate = 11%)	80 Crore
Equity (Share Capital + Reserves & Surplus)	250 Crore
Invested Capital	330 Crore

Following data is given to estimate cost of equity capital:

Asset Beta of TSR Ltd.	1.11
Risk free Rate of Return	8.5%
Average market risk premium	9%

The applicable corporate income tax rate is 30%.

Estimate Economic Value Added (EVA) of RST Ltd. in ₹ lakh.

13. Cauliflower Limited is contemplating acquisition of Cabbage Limited. Cauliflower Limited has 5 lakh shares having market value of ₹ 40 per share while Cabbage Limited has 3 lakh shares having market value of ₹ 25 per share. The EPS for Cabbage Limited and Cauliflower Limited are ₹ 3 per share and ₹ 5 per share respectively. The managements of both the companies are discussing two alternatives for exchange of shares as follows:

(i) In proportion to relative earnings per share of the two companies.

(ii) 1 share of Cauliflower Limited for two shares of Cabbage Limited.

Required:

(i) Calculate the EPS after merger under both the alternatives.

(ii) Show the impact on EPS for the shareholders of the two companies under both the alternatives.

Theoretical Questions

14. Write short notes on:
    (a) Special Purpose Acquisition Companies (SPACs)
    (b) Project appraisal in inflationary conditions
    (c) Problems that may be faced in using IRR for Lease Evaluation
    (d) Determinants of Dividend Policy
    (e) Difference between Investment Banks and Commercial Banks

SUGGESTED ANSWERS

1. Duration of Bond X

Year	Cash flow	P.V. @ 10%		Proportion of bond value	Proportion of bond value x time (years)
1	1070	.909	972.63	1.000	1.000

Duration of the Bond is 1 year

Duration of Bond Y

Year	Cash flow	P.V. @ 10%		Proportion of bond value	Proportion of bond value x time (years)
1	80	.909	72.72	0.077	0.077
2	80	.826	66.08	0.071	0.142
3	80	.751	60.08	0.064	0.192
4	1080	.683	737.64	0.788	3.152
			936.52	1.000	3.563

Duration of the Bond is 3.563 years

Let x_1 be the investment in Bond X and therefore investment in Bond Y shall be $(1 - x_1)$. Since the required duration is 2 year the proportion of investment in each of these two securities shall be computed as follows:

$2 = x_1 + (1 - x_1)\ 3.563$

$x_1 = 0.61$

Accordingly, the proportion of investment shall be 61% in Bond X and 39% in Bond Y respectively.

Amount of investment

Bond X	Bond Y
PV of ₹ 1,00,000 for 2 years @ 10% x 61% = ₹ 1,00,000 (0.826) x 61% = ₹ 50,386 No. of Bonds to be purchased = ₹ 50,386/ ₹ 972.73 = 51.79 i.e. approx. 52 bonds	PV of ₹ 1,00,000 for 2 years @ 10% x 39% = ₹ 1,00,000 (0.826) x 39% = ₹ 32,214 No. of Bonds to be purchased = ₹ 32,214/ ₹936.52 = 34.40 i.e. approx. 34 bonds

Note: The investor has to keep the money invested for two years. Therefore, the investor can invest in both the bonds with the assumption that Bond X will be reinvested for another one year on same returns.

Further, in the above computation, Modified Duration can also be used instead of Duration.

2. **(a)** Conversion Value of Debenture

= Market Price of one Equity Share X Conversion Ratio

= ₹ 25 X 30 = 750

(b) Market Conversion Price

$$= \frac{\text{Market Price of Convertible Debenture}}{\text{Conversion Ratio}}$$

$$= \frac{₹\ 900}{30} = ₹\ 30$$

(c) Conversion Premium per share

Market Conversion Price – Market Price of Equity Share

= ₹ 30 – ₹ 25 = ₹ 5

(d) Ratio of Conversion Premium

$$\frac{\text{Conversion premium per share}}{\text{Market Price of Equity Share}} = \frac{₹\ 5}{₹\ 25} = 20\%$$

(e) Premium over Straight Value of Debenture

$$\frac{\text{Market Price of Convertible Bond}}{\text{Straight Value of Bond}} - 1 = \frac{₹\ 900}{₹\ 700} - 1 = 28.6\%$$

(f) Favourable income differential per share

$$\frac{\text{Coupon Interest from Debenture - Conversion Ratio} \times \text{Dividend Per Share}}{\text{Conversion Ratio}}$$

$$\frac{₹\ 85 - 30 \times ₹1}{30} = ₹\ 1.833$$

(g) Premium pay back period

$$\frac{\text{Conversion premium per share}}{\text{Favourable Income Differntial Per Share}} = \frac{₹\ 5}{₹\ 1.833} = 2.73 \text{ years}$$

3. We have $E_p = W_1E_1 + W_3E_3 + \ldots\ldots\ldots\ldots W_nE_n$

and for standard deviation $\sigma^2_p = \sum_{i=1}^{n} \sum_{j=1}^{n} w_i w_j \sigma_{ij}$

$$\sigma^2_p = \sum_{i=1}^{n} \sum_{j=1}^{n} w_i w_j \rho_{ij}\, \sigma_i\, \sigma_j$$

Two asset portfolio

$\sigma^2_p = w^2_1\sigma^2_1 + w^2_2\sigma^2_2 + 2\, w_1w_2\sigma_1\sigma_2\rho_{12}$

Substituting the respective values we get,

(i) All funds invested in B

Ep = 12%

σ_p= 10%

(ii) 50% of funds in each of B & D

Ep = 0.50X12%+0.50X20%=16%

$\sigma^2_p = (0.50)^2(10\%)^2 + (0.50)^2(18\%)^2 + 2(0.50)(0.50)(0.15)(10\%)(18\%)$

$\sigma^2_p = 25 + 81 + 13.5 = 119.50$

σ_p= 10.93%

(iii) 75% in B and 25% in D

Ep = 0.75%X12%+0.25%X20=14%

$\sigma^2_p = (0.75)^2(10\%)^2 + (0.25)^2(18\%)^2 + 2(0.75)(0.25)(0.15)(10\%)(18\%)$

$\sigma^2_p = 56.25 + 20.25 + 10.125 = 86.625$

σ_p= 9.31%

(iv) All funds in D

Ep = 20%

σ_p= 18.0%

Portfolio	(i)	(ii)	(iii)	(iv)
Return	12	16	14	20
σ	10	10.93	9.31	18

In the terms of return, we see that portfolio (iv) is the best portfolio. In terms of risk we see that portfolio (iii) is the best portfolio.

4.

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	ß (x)	wx
VSL	10000	50	500000	0.4167	0.9	0.375
CSL	5000	20	100000	0.0833	1	0.083
SML	8000	25	200000	0.1667	1.5	0.250
APL	2000	200	400000	0.3333	1.2	0.400
			1200000	1		1.108

(i) Portfolio beta 1.108

(ii) Required Beta 0.8

It should become (0.8 / 1.108) 72.2 % of present portfolio

If ₹ 12,00,000 is 72.20%, the total portfolio should be

₹ 12,00,000 × 100/72.20 or ₹ 16,62,050

Additional investment in zero risk should be (₹ 16,62,050–₹ 12,00,000)= ₹ 4,62,050

Revised Portfolio will be

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	ß (x)	wx
VSL	10000	50	500000	0.3008	0.9	0.271
CSL	5000	20	100000	0.0602	1	0.060
SML	8000	25	200000	0.1203	1.5	0.180
APL	2000	200	400000	0.2407	1.2	0.289
Risk free asset	46205	10	462050	0.2780	0	0
			1662050	1		0.800

(iii) To increase Beta to 1.2

Required beta 1.2

It should become 1.2 / 1.108 108.30% of present beta

If 1200000 is 108.30%, the total portfolio should be

₹ 1200000 × 100/108.30 or ₹ 1108033 say ₹ 1108030

Additional investment should be (-) ₹ 91,967 i.e. Divest ₹ 91970 of Risk Free Asset

Revised Portfolio will be

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	ß (x)	wx
VSL	10000	50	500000	0.4513	0.9	0.406
CSL	5000	20	100000	0.0903	1	0.090
SML	8000	25	200000	0.1805	1.5	0.271
APL	2000	200	400000	0.3610	1.2	0.433
Risk free asset	-9197	10	-91970	-0.0830	0	0
			1108030	1		1.20

Portfolio beta 1.20

5. Let portfolio standard deviation be σ_p

Market Standard Deviation = σ_m

Coefficient of correlation = r

Portfolio beta (β_p) = $\frac{\sigma_p r}{\sigma_m}$

Required portfolio return (R_p) = $R_f + \beta_p (R_m - R_f)$

Portfolio	Beta	Return from the portfolio (R_p) (%)
A	1.75	17.75
B	0.90	13.50
C	0.65	12.25
D	1.25	15.25
E	0.90	13.50

Portfolio	Sharpe Method		Treynor Method		Jensen's Alpha	
	Ratio	Rank	Ratio	Rank	Ratio	Rank
A	4.00	IV	5.71	V	1.25	V
B	3.00	V	6.67	IV	1.50	IV
C	7.50	I	9.23	I	2.75	II
D	4.25	III	6.80	III	2.25	III
E	4.50	II	9.00	II	3.60	I

6. (i) The optional hedge ratio to minimize the variance of Hedger's position is given by:

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

Where

σ_S = Standard deviation of ΔS (Change in Spot Prices)

σ_F =Standard deviation of ΔF (Change in Future Prices)

ρ = coefficient of correlation between ΔS and ΔF

H = Hedge Ratio

ΔS = change in Spot price.

ΔF = change in Future price.

Accordingly

Standard deviation of ΔS = $\sqrt{16\%}$ = 4% and

Standard deviation of ΔF = $\sqrt{36\%}$ = 6% and

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

(ii) Since the company is long position in Spot (Cash) Market it shall take Short Position in Future Market.

(iii) Since contact size of one contract is 1,000 Kg,

$$\text{No. of contract to be short} = \frac{10{,}000 \text{ Kgs}}{1{,}000 \text{ Kgs}} \times 0.50 = 5 \text{ Contracts}$$

Amount = ₹ 5000 x 534 = ₹ 26,70,000

7.

Shares	No. of shares (lakhs) (1)	Market Price of Per Share (2)	× (2) (₹ lakhs)	% to total (w)	ß (x)	Wx
A Ltd.	3.00	500.00	1500.00	0.30	1.40	0.42
B Ltd.	4.00	750.00	3000.00	0.60	1.20	0.72
C Ltd.	2.00	250.00	500.00	0.10	1.60	0.16
			5000.00	1.00		1.30

(a) Portfolio beta 1.30

(b) Required Beta 0.91

Let the proportion of risk free securities for target beta 0.91 = p

$$0.91 = 0 \times p + 1.30 (1 - p)$$

$$p = 0.30 \text{ i.e. } 30\%$$

Shares to be disposed off to reduce beta (5000 × 30%) ₹ 1,500 lakh and Risk Free securities to be acquired.

(c) Number of shares of each company to be disposed off

Shares	% to total (w)	Proportionate Amount (₹ lakhs)	Market Price Per Share ₹	No. of Shares (Lakh)
A Ltd.	0.30	450.00	500.00	0.90
B Ltd.	0.60	900.00	750.00	1.20
C Ltd.	0.10	150.00	250.00	0.60

(d) Number of Nifty Contract to be sold

$$\frac{(1.30-0.91) \times 5000 \text{ lakh}}{8{,}125 \times 200} = 120 \text{ contracts}$$

(e) 2% rise in Nifty is accompanied by 2% x 1.30 i.e. 2.6% rise in portfolio of shares

	₹ Lakh
Current Value of Portfolio of Shares	5000
Value of Portfolio after rise	5130
Mark-to-Market Margin paid (₹ 8125 × 0.020 × 200 × 120)	39
Value of the portfolio after rise of Nifty	5091
% change in value of portfolio (5091 – 5000)/ 5000	1.82%
% rise in the value of Nifty	2%
Beta	0.91

8. (i) The given swap arrangement is Plain Vanilla Overnight Index Swap (OIS).

(ii) To compute the Net Settlement amount we shall compute Interest as per floating rate as follows:

Day	Principal (₹)	MIBOR (%)	Interest (₹)
Tuesday	10,00,00,000	8.15	22,329
Wednesday	10,00,22,329	7.98	21,868
Thursday	10,00,44,197	7.95	21,790
Friday	10,00,65,987	8.12	22,261
Saturday & Sunday (*)	10,00,88,248	8.15	44,697
Monday	10,01,32,945	7.75	21,261
Total Interest @ Floating Rate (A)			1,54,206
Total Interest @ Fixed Rate (B) $10,00,00,000 \times 8.00\% \times \frac{7}{365}$			1,53,425
Net Settlement Amount Paid			781

9. (i) If investment is made at London

Convert US$ 5,00,000 at Spot Rate (5,00,000/1.5390)	= £ 3,24,886
Add: £ Interest for 3 months on £ 324,886 @ 5%	= £ 4,061
	= £ 3,28,947
Less: Amount Invested	$ 5,00,000
Interest accrued thereon	$ 5,000
	= $ 5,05,000
Equivalent amount of £ required to pay the above sum ($ 5,05,000/1.5430*)	= £ 3,27,285
Arbitrage Profit	= £ 1,662

(ii) If investment is made at New York

Gain $ 5,00,000 (8% - 4%) x 3/12	= $ 5,000
Equivalent amount in £ 3 months ($ 5,000/ 1.5475)	£ 3,231

(iii) If investment is made at Frankfurt

Convert US$ 500,000 at Spot Rate (Cross Rate) 1.8260/1.5390	= € 1.1865
Euro equivalent US$ 500,000	= € 5,93,250

Add: Interest for 3 months @ 3%	= € 4,449
	= € 5,97,699
3 month Forward Rate of selling € (1/1.8150)	= £ 0.5510
Sell € in Forward Market € 5,97,699 x £ 0.5510	= £ 3,29,332
Less: Amounted invested and interest thereon	= £ 3,27,285
Arbitrage Profit	= £ 2,047

Since out of three options the maximum profit is in case investment is made in New York. Hence it should be opted.

***** Due to conservative outlook.

10. To evaluate which option would be better we shall compute the outflow under each option as follows:

(i) Pay Immediately availing discount

Particulars		
Spot Rate		₹ 66.98
Amount required in US$	[US$ 8 Million (1 – 0.01)]	US$ 7.92 Million
Amount required in ₹	[₹ 66.98 x US$ 7.92 Million]	₹ 53.0482 Crore
Cash Available		₹ 0.2500 Crore
Loan required		₹ 52.7982 Crore
Interest for 90 days @ 9%		₹ 1.1880 Crore
Total Outflow		₹ 53.9862 Crore

(ii) Pay the supplier on 60th day and avail bank's loan (after utilizing cash) for 30 days.

Particulars		
Applicable Forward Rate		₹ 67.16
Amount required in	[₹ 67.16 x US$ 8 Million]	₹ 53.7280 Crore
Loan required	[₹ 53.7280 Crore – ₹ 0.25 Crore]	₹ 53.4780 Crore
Interest for 30 days @ 9%		₹ 0.4011 Crore
		₹ 53.8791 Crore
Interest earned on Cash for 60 days @ 4%		₹ 0.0017 Crore
Total Outflow		₹ 53.8774 Crore

(iii) Avail supplier offer of 90 days credit and utilize cash available

Particulars		
Amount Payable		US$ 8 Million
Interest for 30 days @ 8%		US$ 0.0533 Million
Amount required in ₹		US$ 8.0533 Million
Applicable Forward Rate		₹ 68.03
Amount required in ₹	[₹ 68.03 x US$ 8.0533 Million]	₹ 54.7866 Crore
Cash Available		₹ 0.2500 Crore
Interest earned on Cash for 90 days @ 4%		₹ 0.0025 Crore
Total Outflow		₹ 54.5341 Crore

Decision: Cash outflow is least in case of Option (ii) same should be opted for.

11. Proforma profit and loss account of the Indian software development unit

		₹
Revenue		60,00,00,000
Less: Costs:		
Rent	18,75,000	
Manpower (400 x 80 x 10 x 365)	14,60,00,000	
Administrative and other costs	15,00,000	14,93,75,000
Earnings before tax		45,06,25,000
Less: Withholding Tax		4,50,62,500
Earnings after Withholding tax @ 10%		40,55,62,500
Less: Corporation Tax net of Withholding Tax		9,01,25,000
Repatriation amount (in rupees)		31,54,37,500
Repatriation amount (in dollars)		$ 52,57,292

Advise: The USA based Company should charge minimum $ 47,42,708 from prospective buyer.

12. First of all, to calculate Cost of Equity we shall compute the Equity Beta of STR Ltd. as follows:

$$\beta_a = \beta_e \left[\frac{E}{E + D(1-t)} \right]$$

$$1.11=\beta_e\left[\frac{250}{250+80(1-0.30)}\right]$$

β_e = 1.36

then we shall compute the Cost of Equity as per CAPM as follows:

k_e = R_f + β x Market Risk Premium

= 8.5% + 1.36 x 9%

= 8.5% + 12.24% = 20.74%

Cost of Debt (k_d) = 11% (1 – 0.30) = 7.70%

WACC (k_o) $= k_e x \frac{E}{E+D} + k_d x \frac{D}{E+D}$

$= 20.74x \frac{250}{330} + 7.70x \frac{80}{330}$

= 15.71 + 1.87 = 17.58%

Taxable Income = ₹ 50 Crore/(1 - 0.30)

= ₹ 7142.86 lakhs

Operating Income = Taxable Income + Interest

= ₹ 7142.86 lakhs + ₹ 880 lakhs

= ₹ 8022.86 lakhs

EVA = EBIT (1-Tax Rate) – WACC x Invested Capital

= ₹ 8022.86 lakhs (1 – 0.30) – 17.58% x ₹ 330 Crore

= ₹ 5616.00 lakhs – ₹ 5801.40 lakhs = - ₹ 185.40 lakhs

13. (i) Exchange ratio in proportion to relative EPS

(in ₹)

Company	Existing No. of shares	EPS	Total earnings
Cauliflower Ltd.	5,00,000	5.00	25,00,000
Cabbage Ltd.	3,00,000	3.00	9,00,000
Total earnings			34,00,000

No. of shares after merger 5,00,000 + 1,80,000 = 6,80,000

Note: 1,80,000 may be calculated as $= \left(3,00,000 \times \frac{3.00}{5.00}\right)$

EPS for Cauliflower Ltd. after merger = $\frac{34,00,000}{6,80,000}$ = 5.00

Impact on EPS

	₹
Cauliflower Ltd. 's shareholders	
EPS before merger	5.00
EPS after merger	5.00
Increase/ Decrease in EPS	0.00
Cabbage Ltd. 's shareholders	
EPS before merger	3.00
EPS after the merger 5.00 x 3/5	3.00
Increase/ Decrease in EPS	0.00

(ii) Merger effect on EPS with share exchange ratio of 1 : 2

Total earnings after merger	₹ 34,00,000
No. of shares post merger 5,00,000 + 1,50,000 (0.5 × 3,00,000)	6,50,000
EPS (34,00,000 ÷ 6,50,000)	₹ 5.23

Impact on EPS

	₹
Cauliflower Ltd. shareholders	
EPS before merger	5.00
EPS after merger	5.23
Increase in EPS	0.23
Cabbage Ltd. Shareholders	
EPS before merger	3.000
EPS after the merger 5.23 x 0.5	2.615
Decrease in EPS	0.385

14. (a) In recent time the concept of Special Purpose Acquisition Companies (SPACs) has come into existence wherein an entity is set up with the objective to raise funds through an IPO to finance a merger or acquisition of an unidentified target within a specific time period. It is commonly known as a blank cheque company.

The main objective of SPAC is to raise money, despite having any operations or revenues. The money raised from the public is kept in an escrow account, which

can be accessed while making the acquisition. However, in case the acquisition is not made within stipulated period of time of the IPO, the SPAC is delisted and the money is returned to the investors. Shareholders have the option to redeem their shares if they are not interested in participating in the proposed merger. Finally, if the merger is approved by shareholders, it is executed, and the target private company or companies become public entities. Once a formal merger agreement has been executed the SPAC target is usually publicly announced.

New investment opportunities in Indian companies have resurfaced and have set up new platform for SPAC transactions. The implementation of SPACs might face certain challenges since India does not have a specific regulatory framework guarding these transactions.

The current regulatory framework in India does not support the SPAC transactions. Further as per the Companies Act, 2013, the Registrar of Companies is authorized to strike-off the name of companies that do not commence operation within one year of incorporation. SPACs generally take 2 to 3 years to identify a target and performing due diligence and before it could get operationalized its name can be stricken off and hence enabling provisions relating to SPAC need to be inserted in the Companies Act in order to make it functional in India.

Though, SPACs do not find acceptance under the Securities and Exchange Board of India (SEBI) Act as it does not meet the eligibility criteria for public listing however SEBI is planning to come out with a framework for SPACs.

The International Financial Services Centres Authority (IFSCA), being the regulatory authority for development and regulation of financial services, financial products and financial institutions in the Gujarat International Finance Tec-City, has recently released a consultation paper defining critical parameters such as offer size to public, compulsory sponsor holding, minimum application size, minimum subscription of the offer size, etc.

SPAC approach offers several advantages over traditional IPO, such as providing companies access to capital, even when market volatility and other conditions limit liquidity. SPACs help to lower the transaction fees as well as expedite the timeline in becoming a public company. Raising money through a SPAC is easier as compared to traditional IPO since the SPAC has already raised money through an IPO. This implies the company in question only has to negotiate with a single entity, as opposed to thousands of individual investors. This makes the process of fundraising a lot easier and quicker than through an IPO. The involvement of skilled professionals in identifying the target makes the investment a well thought and a well governed process.

However, the merger of a SPAC with a target company presents several challenges, such as complex accounting and financial reporting/registration requirements, to

meet a public company readiness timeline and being ready to operate as a public company within a period of three to five months of signing a letter of intent.

It is typically more expensive for a company to raise money through a SPAC than an IPO. Investors' money invested in a SPAC trust to earn a suitable return for up to two years, could be put to better use elsewhere.

(b) Project Appraisal normally involves feasibility evaluation from technical, commercial, economic and financial aspects. It is generally an exercise in measurement and analysis of cash flows expected to occur over the life of the project. The project cash outflows usually occur initially and inflows come in the future.

During inflationary conditions, the project cost increases on all heads viz. labour, raw material, fixed assets such as equipments, plant and machinery, building material, remuneration of technicians and managerial personnel etc. Beside this, inflationary conditions erode purchasing power of consumers and affect the demand pattern. Thus, not only cost of production but also the projected statement of profitability and cash flows are affected by the change in demand pattern. Even financial institutions and banks may revise their lending rates resulting in escalation in financing cost during inflationary conditions. Under such circumstances, project appraisal has to be done generally keeping in view the following guidelines which are usually followed by government agencies, banks and financial institutions.

(i) It is always advisable to make provisions for cost escalation on all heads of cost, keeping in view the rate of inflation during likely period of delay in project implementation.

(ii) The various sources of finance should be carefully scruitinised with reference to probable revision in the rate of interest by the lenders and the revision which could be effected in the interest bearing securities to be issued. All these factors will push up the cost of funds for the organization.

(iii) Adjustments should be made in profitability and cash flow projections to take care of the inflationary pressures affecting future projections.

(iv) It is also advisable to examine the financial viability of the project at the revised rates and assess the same with reference to economic justification of the project. The appropriate measure for this aspect is the economic rate of return for the project which will equate the present value of capital expenditures to net cash flows over the life of the projects. The rate of return should be acceptable which also accommodates the rate of inflation per annum.

(v) In an inflationary situation, projects having early payback periods should be preferred because projects with long payback period are more risky.

Under conditions of inflation, the project cost estimates that are relevant for a future date will suffer escalation. Inflationary conditions will tend to initiate the

measurement of future cash flows. Either of the following two approaches may be used while appraising projects under such conditions:

(1) Adjust each year's cash flows to an inflation index, recognising selling price increases and cost increases annually; or

(2) Adjust the 'Acceptance Rate' (cut-off) suitably retaining cash flow projections at current price levels.

An example of approach (ii) above can be as follows:

Normal Acceptance Rate	:	15.0%
Expected Annual Inflation	:	5.0%
Adjusted Discount Rate	:	15.0 × 1.05 or 15.75%

It must be noted that measurement of inflation has no standard approach nor is easy. This makes the job of appraisal a difficult one under such conditions.

(c) Main problems faced in using Internal Rate of Return can be enumerated as under:

(1) The IRR method cannot be used to choose between alternative lease bases with different lives or payment patterns.

(2) If the firms do not pay tax or pay at constant rate, then IRR should be calculated from the lease cash-flows and compared to after-tax rate of interest. However, if the firm is in a temporary non-tax paying status, its cost of capital changes over time, and there is no simple standard of comparison.

(3) Another problem is that risk is not constant. For the lessee, the payments are fairly riskless and interest rate should reflect this. The salvage value for the asset, however, is probably much riskier. As such two discount rates are needed. IRR gives only one rate, and thus, each cash-flow is not implicitly discounted to reflect its risk.

(4) Multiple roots rarely occur in capital budgeting since the expected cashflow usually changes signs once. With leasing, this is not the case often. A lessee will have an immediate cash inflow, a series of outflows for a number of years, and then an inflow during the terminal year. With two changes of sign, there may be, in practice frequently two solutions for the IRR.

(d) Factors Determining the Dividend Policy of a Company are as follows:

(i) Liquidity: In order to pay dividends, a company will require access to cash. Even very profitable companies might sometimes have difficulty in paying dividends if resources are tied up in other forms of assets.

(ii) Repayment of debt: Dividend payout may be made difficult if debt is scheduled for repayment.

(iii) Stability of Profits: Other things being equal, a company with stable profits is

more likely to pay out a higher percentage of earnings than a company with fluctuating profits.

(iv) Control: The use of retained earnings to finance new projects preserves the company's ownership and control. This can be advantageous in firms where the present disposition of shareholding is of importance.

(v) Legal consideration: The legal provisions lay down boundaries within which a company can declare dividends.

(vi) Likely effect of the declaration and quantum of dividend on market prices.

(vii) Tax considerations and

(viii) Others such as dividend policies adopted by units similarly placed in the industry, management attitude on dilution of existing control over the shares, fear of being branded as incompetent or inefficient, conservative policy Vs non-aggressive one.

(ix) Inflation: Inflation must be taken into account when a firm establishes its dividend policy.

(e) The fundamental differences between an investment bank and a commercial bank can be outlined as follows:

Investment Banks	Commercial Banks
1. Investment Banks help their clients in raising capital by acting as an intermediary between the buyers and the sellers of securities (stocks or bonds)	1. Commercial Banks are engaged in the business of accepting deposits from customers and lending money to individuals and corporate
2. Investment Banks do not take deposits from customers	2. Commercial banks can legally take deposits from customers.
3. The Investment Banks do not own the securities and only act as an intermediary for smooth transaction of buying and selling securities.	3. Commercial Banks own the loans granted to their customers.
4. Investment Banks earn underwriting commission	4. Commercial banks earn interest on loans granted to their customers.