PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

*Question No.**1** is compulsory.*

*Candidates are also required to answer any **five** questions out of the remaining **six** questions.*

Wherever necessary, suitable assumptions should be made and indicated in the answer by the candidate.

Working notes should form part of the respective answer.

Question 1

(a) The Nominal value of 10% Bonds issued at par by M/s. SK Ltd. is ₹ 100. The bonds are redeemable at ₹ 110 at the end of year 5.

   (I) Determine the value of the bond if required yield is :

   (i) 8%

   (ii) 9%

   (iii) 10%

   (iv) 11%

   (II) When will the value of the bond be highest ?

   Given below are Present Value Factors :

Year	1	2	3	4	5
PV Factor @ 8%	0.926	0.857	0.794	0.735	0.681
PV Factor @ 9%	0.917	0.842	0.772	0.708	0.650
PV Factor @ 10%	0.909	0.826	0.751	0.683	0.621
PV Factor @ 11%	0.901	0.812	0.731	0.659	0.593

(5 Marks)

(b) A German subsidiary of an US based MNC has to mobilize 100000 Euro's working capital for the next 12 months. It has the following options:

Loan from German Bank	:	@ 5% p.a.
Loan from US Parent Bank	:	@ 4% p.a.
Loan from Swiss Bank	:	@ 3% p.a.

   Banks in Germany charge an additional 0.25% p.a. towards loan servicing. Loans from outside Germany attract withholding tax of 8% on interest payments. If the interest rates given above are market determined, examine which loan is the most attractive using interest rate differential. *(5 Marks)*

(c) XY Ltd., a Cement manufacturing Company has hired you as a financial consultant of the company. The Cement Industry has been very stable for some time and the cement companies SK Ltd. & AS Ltd. are similar in size and have similar product market mix characteristic. Use comparable method to value the equity of XY Ltd. In performing analysis, use the following ratios:

(i)   Market to book value

(ii) Market to replacement cost

(iii) Market to sales

(iv) Market to Net Income

The following data are available for your analysis:

(Amount in ₹)

	SK Ltd.	AS Ltd.	XY Ltd.
Market Value	450	400	
Book Value	400	300	250
Replacement Cost	600	550	500
Sales	550	450	500
Net Income	18	16	14

(5 Marks)

(d) M/s. Swastik Enterprises wants to invest in a new project. The following information are available with regard to the new project.

Initial Outlay of project	₹ 80,000
Annual revenues (without inflation)	₹ 60,000
Annual costs excluding depreciation (without inflation)	₹ 20,000
Useful life	4 years
Salvage value	Nil
Tax Rate	50%
Cost of Capital	12%
The expected annual rate of inflation	10%.

Determine NPV using Cash flows with inflation and decide whether the new project can be accepted or not.

Your calculations are to be rounded off to 2 decimals.

The PV factors are given below :

Years	1	2	3	4
PVIF @ 12%	*0.893*	*0.797*	*0.712*	*0.635*

(5 Marks)

Answer

(a) Case (i) Required yield rate = 8%

Year	Cash Flow (₹)	DF (8%)	Present Value (₹)
1-5	10	3.993	39.93
5	110	0.681	74.91
Value of bond			114.84

Case (ii) Required yield rate = 9%

Year	Cash Flow (₹)	DF (9%)	Present Value (₹)
1-5	10	3.889	38.89
5	110	0.650	71.50
Value of bond			110.39

Case (iii) Required yield rate = 10%

Year	Cash Flow (₹)	DF (10%)	Present Value (₹)
1-5	10	3.790	37.90
5	110	0.621	68.31
Value of bond			106.21

Case (iv) Required yield rate = 11%

Year	Cash Flow (₹)	DF (11%)	Present Value (₹)
1-5	10	3.696	36.96
5	110	0.593	65.23
Value of bond			102.19

Decision -The value shall be highest when required yield is 8%.

(b) Net Cost under each of the Options is as follows:

(i) Loan from German Bank

Cost = 5% + 0.25% = 5.25%

(ii) **Loan from US Parent Bank**

Effective Rate of Interest $\left(\dfrac{4\%}{1-0.08}\right)$	4.35%
Premium on US\$ $\left(\dfrac{1.05}{1.04}-1\right)$	0.96%
Net Cost	5.31%

(iii) **Loan from Swiss Bank**

Effective Rate of Interest $\left(\dfrac{3\%}{1-0.08}\right)$	3.26%
Premium on US\$ $\left(\dfrac{1.05}{1.03}-1\right)$	1.94%
Net Cost	5.20%

Thus, loan from Swiss Bank is the best option as the Total Outflow including Interest is Less i.e. €105200

(c) **Estimation of Ratios**

Sl. No.	Particulars	SK Ltd.	AS Ltd.	Average
(i)	Market to Book Value	$\left(\dfrac{450}{400}\right)$ = 1.125	$\left(\dfrac{400}{300}\right)$ = 1.333	1.2290
(ii)	Market to Replacement Cost	$\left(\dfrac{450}{600}\right)$ = 0.750	$\left(\dfrac{400}{550}\right)$ = 0.727	0.7385
(iii)	Market to Sales	$\left(\dfrac{450}{550}\right)$ = 0.818	$\left(\dfrac{400}{450}\right)$ = 0.889	0.8535
(iv)	Market to Net Income	$\left(\dfrac{450}{18}\right)$ = 25	$\left(\dfrac{400}{16}\right)$ = 25	25

Application of Ratios to XY Ltd.

Sl. No.	Particulars	XY Ltd. (₹)	Average	Indicative Value of XY Ltd. (₹)
(i)	Book Value	250	1.2290	250 x 1.2290 = 307.25
(ii)	Replacement Cost	500	0.7385	500 x 0.7385 = 369.25

(iii)	Sales	500	0.8535	500 x 0.8535 = 426.75
(iv)	Net Income	14	25	14 x 25 = 350.00
Average				₹ 363.31

Value of XY Ltd. according to the comparable method is ₹ 363.31

(d) (i) **Calculation of Annual Cash Flows**

Particulars	Year 1 (₹)	Year 2 (₹)	Year 3 (₹)	Year 4 (₹)
Annual Revenue	66,000	72,600	79,860	87,846
Annual Cost	22,000	24,200	26,620	29,282
Depreciation	20,000	20,000	20,000	20,000
PBT	24,000	28,400	33,240	38,564
Tax @ 50%	12,000	14,200	16,620	19,282
PAT	12,000	14,200	16,620	19,282
Add: Depreciation	20,000	20,000	20,000	20,000
Cash Inflows	32,000	34,200	36,620	39,282

(ii) **Computation of NPV of the Project**

Particulars	Period	Cash Flow (₹)	PVF	PV of Cash Flow (₹)
Cash Outlay	0	(80,000)	1.000	(80,000)
Annual Cash Inflows	1	32,000	0.893	28,576.00
Annual Cash Inflows	2	34,200	0.797	27,257.40
Annual Cash Inflows	3	36,620	0.712	26,073.44
Annual Cash Inflows	4	39,282	0.635	24,944.07
NPV				26,850.91

Decision: Since NPV of the project is positive we should accept the project.

Question 2

(a) *The current EPS of M/s VEE Ltd. is ₹ 4. The company has shown an extraordinary growth of 40% in its earnings in the last few year This high growth rate is likely to continue for the next 5 years after which growth rate in earnings will decline from 40% to 10% during the next 5 years and remain stable at 10% thereafter. The decline in the growth rate during the five year transition period will be equal and linear. Currently, the company's pay-out ratio is 10%. It is likely to remain the same for the next five years and from the beginning of the sixth year till the end of the 10th year, the pay-out will linearly increase and stabilize at 50% at the end of the 10th year. The post tax cost of capital is 17% and the PV factors are given below:*

Years	1	2	3	4	5	6	7	8	9	10
PVIF @17%	*0.855*	*0.731*	*0.625*	*0.534*	*0.456*	*0.390*	*0.333*	*0.285*	*0.244*	*0.209*

You are required to calculate the intrinsic value of the company's stock based on expected dividend. If the current market price of the stock is ₹ 125, suggest if it is advisable for the investor to invest in the company's stock or not. **(8 Marks)**

(b) *With the following data available, compute the Break Even Lease Rental, before tax, that ABC Ltd. should charge from lessee.*

Cost of Machine	*₹ 150 lakh*
Expected Useful life	*5 year*
Salvage value of machine at the end of 5 years	*₹ 10 lakh*
Rate of Depreciation (WDV)	*25%*
Cost of Capital	*14%*
Applicable Tax Rate	*35%*

The machine will constitute a separate block for depreciation. Assume the cost of negotiation, lease administration as Nil and the lease rental is payable on the last day of each year.

Given below are the PV factors @ 14%.

Years	1	2	3	4	5
PVIF @ 14%	*0.877*	*0.769*	*0.675*	*0.592*	*0.519*

(8 Marks)

Answer

(a) Working Notes:

(i)   **Computation of Growth Rate in Earning and EPS**

Year	1	2	3	4	5	6	7	8	9	10
Growth in Earning	40%	40%	40%	40%	40%	34%	28%	22%	16%	10%
EPS (₹)	5.60	7.84	10.98	15.37	21.51	28.82	36.89	45.00	52.20	57.42

(ii)   **Computation of Payout Ratio and Dividend**

Year	1	2	3	4	5	6	7	8	9	10
Payout Ratio	10%	10%	10%	10%	10%	18%	26%	34%	42%	50%

Dividend (₹)	0.56	0.78	1.10	1.54	2.15	5.19	9.59	15.30	21.92	28.71

(iii) **Calculation of PV of Dividend**

Year	Dividend (₹)	PVF	PV of Dividend (₹)
1	0.56	0.855	0.48
2	0.78	0.731	0.57
3	1.10	0.625	0.69
4	1.54	0.534	0.82
5	2.15	0.456	0.98
6	5.19	0.390	2.02
7	9.59	0.333	3.19
8	15.30	0.285	4.36
9	21.92	0.244	5.35
10	28.71	0.209	6.00
			24.46

$$TV = \frac{28.71(1.10)}{0.17 - 0.10} \times 0.209 = ₹\ 94.29$$ Intrinsic Value = ₹ 24.46 + ₹ 94.29 = ₹ 118.75

Since the Intrinsic Value of Equity share is less than current market price, it is not advisable to invest in the same.

(b) Working Notes:

(i) **Schedule of Depreciation/ Short Term Capital Loss (STCL)**

Year	Opening WDV (₹ lakh)	Depreciation (₹ lakh)	Closing WDV (₹ lakh)
1	150	37.50	112.50
2	112.50	28.13	84.37
3	84.37	21.09	63.28
4	63.28	15.82	47.46
5	47.46	11.87	35.59

STCL = ₹ 35.59 Lakh – ₹ 10 Lakh = ₹ 25.59 Lakh

(ii) **Computation of PV of Tax Benefit on Depreciation/ Short Term Capital Loss (STCL)**

Period	Dep/ STCL (₹ lakh)	Tax Shield (₹ lakh)	PVF @ 14%	PV (₹ lakh)
1	37.50	13.13	0.877	11.52
2	28.13	9.85	0.769	7.57

3	21.09	7.38	0.675	4.98
4	15.82	5.54	0.592	3.28
5	37.46(11.87+25.59)	13.11	0.519	6.80
				34.15

Break Even Lease Rent

	(₹ lakh)
Cost of Machine	150.00
Less: PV of Salvage Value (10 x 0.519)	5.19
Less: PV of Tax Shield	34.15
	110.66
PVIAF (14%,5)	3.432
Break Even Lease Rental after Tax	32.244

Break Even Lease Rental before Tax = 32.244/1-0.35 = ₹49.61 Lakhs.

Question 3

(a) *M/s. Vasavi Enterprises, a garment manufacturing company is considering the introduction of a new line of manufacturing of Jeans pants with an expected life of five years. In the past the firm has been quite conservative in its investment in new projects, sticking primarily to standard garments. The new project is going to be setup in the New Industrial Area and enjoys Income Tax Holiday of 5 years.*

The CEO of the company is of the opinion that the normal required rate of return for the company of 12% is not sufficient. Therefore, the minimum acceptable rate of return of this project should be 18%.

The initial outlay of the project is ₹ 10,00,000. The expected free cash flows from the project and the present value factors are given below :

Years	2	3	4	5
Cash flows	2,00,000	3,00,000	4,00,000	3,00,000	2,00,000
PVIF @ 12%	0.893	0.797	0.712	0.636	0.567
PVIF @ 18%	0.847	0.718	0.609	0.516	0.437

(i) *As CFO of the company, justify, whether the project can be accepted?*

(ii) *Will your decision change if the Government gives GST tax breaks for the first 5 years, which results in increasing cash inflows of the company by 8% and also reduces initial cash outflow by 8%?*   **(8 Marks)**

(b) The NSE-50 Index futures are traded with rupee value being ₹ 100 per index point. On 15th September, the index closed at 1195, and December futures (last trading day December 15) were trading at 1225. The historical dividend yield on the index has been 3% per annum and the borrowing rate was 9.5% per annum.

(i) Determine whether on September 15, the December futures were underpriced or overpriced?

(ii) What arbitrage transaction is possible to gain out this mispricing?

(iii) Calculate the gains and losses if the index on 15th December closes at (a) 1260 (b) 1175.

Assume 365 days in a year for your calculations. **(8 Marks)**

Answer

(a) (i) NPV of the Project

Period	PVF @ 18%	Cash Flow (₹)	PV of Cash Flow (₹)
0	1.000	(10,00,000)	(10,00,000)
1	0.847	2,00,000	1,69,400
2	0.718	3,00,000	2,15,400
3	0.609	4,00,000	2,43,600
4	0.516	3,00,000	1,54,800
5	0.437	2,00,000	87,400
		NPV	(1,29,400)

Decision: Since NPV of the project is negative it is recommended not to accept the project.

(ii) NPV of the project if Tax Break is given

Period	PVF @ 18%	Cash Flow (₹)	PV of Cash Flow (₹)
0	1.000	(9,20,000)	(9,20,000)
1	0.847	2,16,000	1,82,952
2	0.718	3,24,000	2,32,632
3	0.609	4,32,000	2,63,088
4	0.516	3,24,000	1,67,184
5	0.437	2,16,000	94,392
		NPV	20,248

Decision: Since NPV of the project is positive it is recommended to accept the project.

(b) (i) Current price of the December Future $= ₹\ 100\ [1195 + 1195\ (0.095 - 0.03)\ \dfrac{91}{365}\ ]$

$$= ₹\ 100\ [1195 + 19.37]$$

$$= ₹\ 1,21,437$$

Since the current market price of December-15 is ₹ 1,22,500 (₹ 100 x 1225) it is overpriced.

(ii) Since the actual future is overpriced, the cash and carry arbitrage is possible i.e. sell the future contract and borrow to buy the stock.

(iii) September 15

Transaction	Cash Flow
Buy (1195 x ₹ 100) = ₹ 1,19,500 worth of Stocks	- ₹ 1,19,500.00
Borrow ₹ 1,19,500 @ 9.50% for 91 days	+ ₹ 1,19,500.00
Sell a Future Contract @ 1225	0
Total	0

(a) **If on December 15, the Index closes at 1260**

Transaction	Cash Flow (₹)
Repay ₹ 1,19,500 @ 9.50% for 91 days	- 1,22,330.35
Cancellation of Future Contract (1,22,500 – 1,26,000)	- 3,500.00
Sell 1,19,500 worth of Stocks @ 1,260 $\left(\dfrac{1260}{1195}\right)$ x 1,19,500	+1,26,000.00
Dividend Earned @ 3% $\left(\dfrac{91}{365}\right)$ x 1,19,500 x 3%	+ 893.79
Gain due to Arbitrage	+ 1,063.44

(b) **If on December 15, the Index closes at 1175**

Transaction	Cash Flow (₹)
Repay ₹ 1,19,500 @ 9.50% for 91 days	- 1,22,330.35
Cancellation of Future Contract (1,22,500 – 1,17,500)	+5,000.00
Sell 1,19,500 worth of Stocks @ 1,175 $\left(\dfrac{1,175}{1,195}\right)$ x 1,19,500	+ 1,17,500.00

Dividend Earned @ 3% $\left(\dfrac{91}{365}\right)$ x 1,19,500 x 3%	+ 893.79
Gain due to Arbitrage	+ 1,063.44

Question 4

(a) The returns of a portfolio A and market portfolio for the last 12 months are indicated as follows:

Month	Portfolio A	Market Portfolio
January	- 0.52	0.82
February	2.20	0.04
March	2.17	2.80
April	4.17	1.72
May	2.04	0.27
June	3.00	0.39
July	1.99	1.95
August	4.00	0.64
September	-1.38	1.53
October	2.67	2.70
November	3.99	2.52
December	1.86	2.09
Standard Deviation (σ)	1.6223	0.9498

(i) You are required to find out the monthly returns attributable to the sheer skill of the Portfolio Manager.

(ii) What part of the monthly return is attributable to the higher risk assumed by the Portfolio Manager?

Assume that the risk-free rate of return is 12% per annum and the portfolio is fully diversified. **(8 Marks)**

(b) You are interested in buying some equity stocks of RK Ltd. The company has 3 divisions operating in different industries. Division A captures 10% of its industries sales which is forecasted to be ₹ 50 crore for the industry. Division B and C captures 30% and 2% of their respective industry's sales, which are expected to be ₹ 20 crore and ₹ 8.5 crore respectively. Division A traditionally had a 5% net income margin, whereas divisions B and C had 8% and 10% net income margin respectively. RK Ltd. has 3,00,000 shares of equity stock outstanding, which sell at ₹ 250.

The company has not paid dividend since it started its business 10 years ago. However from the market sources you come to know that RK Ltd. will start paying dividend in 3 years time and the pay-out ratio is 30%. Expecting this dividend, you would like to hold the stock for 5 year. By analysing the past financial statements, you have determined that RK Ltd.'s required rate of return is 18% and that P/E ratio of 10 for the next year and on ending P/E ratio of 20 at the end of the fifth year are appropriate.

Required:

(i)   Would you purchase RK Ltd. equity at this time based on your one year forecast?

(ii) If you expect earnings to grow @ 15% continuously, how much are you willing to pay for the stock of RK Ltd ?

Ignore taxation.

PV factors are given below :

Years	1	2	3	4	5
PVIF@ 18%	*0.847*	*0.718*	*0.609*	*0.516*	*0.437*

(8 Marks)

Answer

(a) (i)   The monthly risk free rate of return = (12%/12) = 1%

Month	R_A	R_M
January	-0.52	0.82
February	2.20	0.04
March	2.17	2.80
April	4.17	1.72
May	2.04	0.27
June	3.00	0.39
July	1.99	1.95
August	4.00	0.64
September	-1.38	1.53
October	2.67	2.70
November	3.99	2.52
December	1.86	2.09
	26.19	17.47
Average Returns	2.1825	1.4558

Average Portfolio Return (R_p) = 2.1825

Average Portfolio Return (R_m) = 1.4558

Portfolio Risk (σ_P) = 1.6223

Market Risk (σ_m) = 0.9498

Since portfolio A is fully diversified then it can be computed with a portfolio whose beta (β) can be found as follows:

$$\sigma_m^2 \times \beta^2 = \sigma_P^2$$

$\beta = \dfrac{\sigma_P}{\sigma_m} = \dfrac{1.6223}{0.9498} = 1.708$ Therefore, portfolio A is comparable to a portfolio whose Beta is 1.708.

Expected monthly returns on such portfolio can be calculated as follows:

R_P^1 = R_f + β(R_m - R_f)

= 1% + 1.708 (1.4558% - 1.0000%)

= 1.7785%

Return due to the net selectivity = R_P - R_P^1

= 2.1825% - 1.7785%

= 0.404% per month

(ii) The returns due to higher risk assumed by the portfolio manager

= 1.7785% - 1.4558% = 0.3227% per month

(b) Working Notes:

Computation of Earning Per Share (EPS)

Particulars		Amount (₹)
Margin of Division A	(₹ 50 crore x 10% x 5%)	25,00,000
Margin of Division B	(₹ 20 crore x 30% x 8%)	48,00,000
Margin of Division C	(₹ 8.5 crore x 2% x 10%)	1,70,000
		74,70,000
No. of Equity Shares		3,00,000
EPS		₹ 24.90

(i) **Market Price based on One Year Forecast**

Expected Market Price at the end of the year = ₹ 24.90 x 10 = ₹ 249

PV of the Expected Price = ₹ 249 x 0.847 = ₹ 210.90

I would **NOT** like to purchase the share as the expected market price of shares is less than its current price of ₹ 250.

(ii) If Earning is expected to grow @ 15%

Year	EPS (₹)	Dividend (₹)	PVF@18%	PV (₹)
1	28.64	---	0.847	---
2	32.93	---	0.718	---
3	37.87	11.36	0.609	6.92
4	43.55	13.07	0.516	6.74
5	50.08	15.02	0.437	6.56
				20.22

Share Price after 5 years = $\dfrac{15.02(1.15)}{0.18 - 0.15}$ = ₹ 575.77

PV of the Market Price after 5 years = ₹ 575.77 X 0.437 = ₹ 251.61

Total PV of Inflows = ₹ 20.22 + ₹ 251.61 = ₹ 271.83

Thus, the maximum price I would be willing to pay for the share shall be ₹ 271.83.

Question 5

(a) *Mr. Alex, a practicing Chartered Accountant, can earn a return of 15 percent by investing in equity shares on his own. He is considering a recently announced equity based mutual fund scheme in which initial expenses are 6 percent and annual recurring expenses are 2 percent.*

     (i) *How much should the mutual fund earn to provide Mr. Alex a return of 15 percent per annum?*

     (ii) *Mr. Alex's current Annual Professional Income is ₹ 40 Lakhs. His portfolio value is ₹ 50 Lakhs and now he is spending 10% of his time to manage his portfolio. If he spends this time on profession, his professional income will go up in same proportion. He is thinking to invest his entire portfolio into a Multicap Fund, assuming the fund's NAV will grow at 13% per annum (including dividend).*

     You are requested to advise Mr. Alex, whether he can invest the portfolio into Multicap Funds ? If so, what is the net financial benefit?   ***(8 Marks)***

(b) *H Ltd. is an Indian firm exporting handicrafts to North America. All the exports are invoiced in US$. The firm is considering the use of money market or forward market to cover the receivable of $50,000 expected to be realized in 3 months time and has the following information from its banker:*

	Exchange Rates
Spot	₹/$ 72.65/73
3-m forward	₹/$ 72.95/73.40

The borrowing rates in US and India are 6 % and 12% p.a. and the deposit rates are 4% and 9% p.a. respectively.

(i)   *Which option is better for H Ltd. ?*

(ii)   *Assume that H Ltd. anticipates the spot exchange rate in 3-months time to be equal to the current 3-months forward rate. After 3-months the spot exchange rate turned out to be ₹/$: 73/73.42. What is the foreign exchange exposure and risk of H Ltd.?*

(8 Marks)

Answer

(a)   (i)   Personal earnings of Mr. Alex = R_1 = 15%

Mutual Fund earnings = R_2

$$R_2 = \frac{1}{1 - \text{Initial expenses(\%)}} R_1 + \text{Recurring expenses(\%)}$$

$$= \frac{1}{1-0.06} \times 15\% + 2\%$$

= 17.96%

Mutual Fund earnings = 17.96%

(ii)   Net financial benefit to Mr. Alex if he invests his portfolio in Fund:

Present Income of Mr. Alex

	₹ Lakhs
Annual Professional Income (A)	40.00
Portfolio Value	50.00
Income on his Portfolio @ 15% (B)	7.50
Total Income (A) + (B)	47.50

Expected Income of Mr. Alex after investing the Portfolio in Multi-cap Fund:

	₹ Lakhs
Annual Professional Income (A)	40.00
Additional Professional Income (B)	4.00
Portfolio Value	50.00
Income on his Portfolio @ 13% (C)	6.50
Total Income (A) + (B) + (C)	50.50

It is advisable to invest in Multi-cap Mutual Funds and devote the time on profession. He will get net benefit of ₹ 3 Lakhs (₹50.50 - ₹47.50)

(b) (i) Money market hedge

For money market hedge Indian Firm shall borrow in US$ and then translate them to Indian Rupee and shall make deposit in Indian Rupee.

For receipt of US$ 50,000 in 3 months (@ 1.5% interest) amount required to be borrowed now (US$ 50,000 ÷ 1.015)   = US$ 49,261.08

With spot rate of 72.65 the Rupee deposit will be = ₹ 35,78,817.46

Deposit amount will increase over 3 months (@2.25% interest) will be = ₹ 36,59,340.85

Forward market hedge

Sell 3 months' forward contract accordingly, amount receivable after 3 months will be (US$ 50,000 x 72.95)

= ₹ 36,47,500

In this case, more will be received under the money market hedge hence it is better option.

(ii) **Exchange Exposure to H Ltd.**

Expected Realisation as per Forward Rate (US$ 50,000 X 72.95)	₹ 36,47,500
Actual Realisation as per actual Spot Rate (US$ 50,000 X 73.00)	₹ 36,50,000
Gain	₹ 2,500

Question 6

(a) ABC Ltd. is a company operating in the software industry. It is considering the acquisition of XYZ Ltd. which is also into software industry. The following information are available for the companies:

	ABC Ltd.	XYZ Ltd.
Earnings after tax (₹)	9,00,000	2,40,000
Number of equity shares	1,50,000	60,000
P/E ratio (no. of times)	14	10

ABC Ltd. is planning to offer a premium of 25% over the market price of XYZ Ltd. Required:

(i)   What is the swap ratio based on current market price?

(ii)   Find the number of shares to be issued by ABC Ltd. to the shareholders of XYZ Ltd.

(iii)   Compute the new EPS of ABC Ltd. after merger and comment on the impact of merger.

(iv) *Determine the market price of the share when P/E ratio remains unchanged.*

(v) *Compute the market price when P/E declines to 12 and comment on the results.*

Figures are to be rounded off to 2 decimals.   **(10 Marks)**

(b) *The US Dollar is selling in India at ₹ 72.50. If the interest rate for a 3 months borrowing in India is 6% per annum and the corresponding rate in USA is 2.75%.*

(i) *Do you expect that US dollar will be at a premium or at discount in the Indian Forex Market?*

(ii) *What will be the expected 3-months forward rate for US dollar in India?*

(iii) *What will be the rate of forward premium or discount?*   **(6 Marks)**

Answer

(a) Working Notes

Computation of Market Price of the Shares

Particulars	ABC Ltd.	XYZ Ltd.
EAT	₹ 9,00,000	₹ 2,40,000
No. of Equity Shares	1,50,000	60,000
EPS	₹ 6.00	₹ 4.00
P/E Ratio	14.00	10.00
Market Price Per Share	₹ 84.00	₹ 40.00

(i) **Exchange Ratio based on Current Market Price**

Exchange ratio 40 x 1.25 : 84 = 50 : 84

that is 50 shares of ABC Ltd. for every 84 shares of XYZ Ltd. or

25 shares of ABC Ltd. for every 42 shares of XYZ Ltd.

(ii) **No. of Shares to be issued**

$\frac{50}{84}$ = 0.596 i.e. 0.60 share for 1 share of XYZ Ltd.

60,000 x 0.60 = 36,000

(iii) **Computation of EPS and Impact after Merger**

Total earnings after merger	₹ 11,40,000
No. of shares post merger (1,50,000 + 36,000)	1,86,000
EPS	6.13

Impact on EPS

For ABC Ltd.'s shareholders	₹
EPS before merger	6.00
EPS after merger	6.13
Increase in EPS	0.13
For XYZ Ltd.'s Shareholders	
EPS before merger	4.00
Equivalent EPS after the merger (6.13×0.6)	3.68
Decrease in EPS	0.32

Thus, with the proposed merger while the EPS for shareholders of ABC Ltd. will improve and EPS for shareholders of XYZ Ltd. will be decreased.

(iv) **Market Price of Share after Merger**

New EPS	₹ 6.13
PE Ratio	14
New Price of the Share (₹ 6.13 x 14)	₹ 85.82

(v) **New Market Price of share if PE Ratio falls to 12**

New EPS	₹ 6.13
PE Ratio	12
New Price of the Share (₹ 6.13 x 12)	₹ 73.56

Gain/ loss from the Merger to the shareholders of ABC Ltd.

Market Price of Share	₹ 73.56
Market Price of Share before Merger	₹ 84.00
Loss from the merger (per share)	₹ 10.44

Gain/ loss from the Merger to the shareholders of XYZ Ltd.

Equivalent Market Price of Share (73.56×0.6)	₹ 44.14
Market Price of Share before Merger	₹ 40.00
Gain from the merger (per share)	₹ 4.14

Comments: With the merger there is a decrease in the market price of shares for the shareholders of ABC Ltd and a gain for shareholders of XYZ Ltd.

(b) (i) Under the given circumstances, the US Dollar is expected to quote at a premium in the Indian Forex Market as the interest rate is higher in India.

(ii) Calculation of the forward rate:

$$\frac{1+R_h}{1+R_f} = \frac{F_1}{E_o}$$

Where: R_h is home currency interest rate, R_f is foreign currency interest rate, F_1 is end of the period forward rate, and E_o is the spot rate.

Therefore $\dfrac{1+(0.06/4)}{1+(0.0275/4)} = \dfrac{F_1}{72.50}$

$\dfrac{1+(0.015)}{1+(0.006875)} = \dfrac{F_1}{72.50}$

or F_1 = ₹ 73.09

(iii) Rate of premium:

$$\frac{73.09 - 72.50}{72.50} \times \frac{12}{3} \times 100 = 3.26\%$$

Question 7

*Answer any **four** of the following:*

(a) *Write a note on buy-back of shares by companies and what is the impact on P/E Ratio upon buy-back of shares ?*

(b) *What is take over by reverse bid or Reverse Merger ? When does it take place?*

(c) *Explain the different methods for evaluating the performance of a mutual fund.*

(d) *What is money market and what are its features ?*

(e) *What is the meaning of NBFC ? What are the differences between a bank and NBFC ?*

(4 x4 = 16 Marks)

Answer

(a) Till 1998, buyback of equity shares was not permitted in India. But now they are permitted after suitably amending the Companies Act, 1956. However, the buyback of shares in India are permitted under certain guidelines issued by the Government as well as by the SEBI. Several companies have opted for such buyback including Reliance, Bajaj, and Ashok Leyland to name a few. In India, the corporate sector generally chooses to buyback by the tender method or the open market purchase method. The company, under the tender method, offers to buy back shares at a specific price during a specified period which is usually one month. Under the open market purchase method, a company buys shares from

the secondary market over a period of one year subject to a maximum price fixed by the management. Companies seem to now have a distinct preference for the open market purchase method as it gives them greater flexibility regarding time and price.

As impact of buyback, the P/E ratio may change as a consequence of buyback operation. The P/E ratio may rise if investors view buyback positively or it may fall if the investors regard buyback negatively.

(b) Generally, a big company takes over a small company. When the smaller company gains control of a larger one then it is called "Take-over by reverse bid". In case of reverse take-over, a small company takes over a big company. This concept has been successfully followed for revival of sick industries.

The acquired company is said to be big if any one of the following conditions is satisfied:

(i)   The assets of the transferor company are greater than the transferee company;

(ii) Equity capital to be issued by the transferee company pursuant to the acquisition exceeds its original issued capital, and

(iii) The change of control in the transferee company will be through the introduction of minority holder or group of holder

Reverse takeover takes place in the following cases:

(1) When the acquired company (big company) is a financially weak company

(2) When the acquirer (the small company) already holds a significant proportion of shares of the acquired company (small company)

(3) When the people holding top management positions in the acquirer company want to be relived off of their responsibilities.

(c) Methods for Evaluating the Performance

1. **Sharpe Ratio:** The excess return earned over the risk free return on portfolio to the portfolio's total risk measured by the standard deviation. This formula uses the volatility of portfolio return. The Sharpe ratio is often used to rank the risk-adjusted performance of various portfolios over the same time. The higher a Sharpe ratio, the better a portfolio's returns have been relative to the amount of investment risk the investor has taken.

$$S = \frac{\text{Return of portfolio - Return of risk free investment}}{\text{Standard Deviation of Portfolio}}$$

2. **Treynor Ratio:** This ratio is similar to the Sharpe Ratio except it uses Beta of portfolio instead of standard deviation. Treynor ratio evaluates the performance of a portfolio based on the systematic risk of a fund. Treynor ratio is based on the premise that unsystematic or specific risk can be diversified and hence, only incorporates the systematic risk (beta) to gauge the portfolio's performance.

$$T = \frac{\text{Return of portfolio - Return of risk free investment}}{\text{Beta of Portfolio}}$$

3. **Jensen's Alpha:** The comparison of actual return of the fund with the benchmark portfolio of the same risk. Normally, for the comparison of portfolios of mutual funds this ratio is applied and compared with market return. It shows the comparative risk and reward from the said portfolio. Alpha is the excess of actual return compared with expected return.

(d) In a wider spectrum, a money market can be defined as a market for short-term money and financial assets that are near substitutes for money with minimum transaction cost.

Features:

* The term short-term means generally a period upto one year and near substitutes to money is used to denote any financial asset which can be quickly converted into money.

* Low cost.

* It provides an avenue for equilibrating the short-term surplus funds of lenders and the requirements of borrower

* It, thus, provides a reasonable access to the users of short term money to meet their requirements at realistic prices.

* The money market can also be defined as a centre in which financial institutions congregate for the purpose of dealing impersonally in monetary assets.

(e) NBFC (Non Banking Financial Companies) stands for Non-Banking financial institutions, and these are regulated by the Reserve Bank of India under RBI Act, 1934. A Non-Banking Financial Company (NBFC) is a company registered under the Companies Act, 1956 and is engaged in the business of loans and advances, acquisition of shares/ stock/ bonds/debentures/securities issued by Government or local authority or other securities of like marketable nature, leasing, hire-purchase, insurance business, chit business but does not include any institution whose principal business is that of agriculture activity, industrial activity, sale/purchase/construction of immovable property/. NBFC's principal business is receiving of deposits under any scheme or arrangement or in any other manner or lending on any other manner. They normally provide supplementary finance to the corporate sector.

NBFCs function similarly as banks; however there are a few differences:

(i)   an NBFC cannot accept demand deposits;

(ii) an NBFC is not a part of the payment and settlement system and as such an NBFC cannot issue cheques drawn on itself; and

(iii) deposit insurance facility of Deposit Insurance and Credit Guarantee Corporation is not available for NBFC depositors unlike in case of banks.