## PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

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

*Candidates are also required to answer any **four** questions from the remaining **five** questions.*

*Working notes should form part of the respective answers.*

**Question 1**

*(a) Mr. X is of the opinion that market has recently shown the Weak Form of Market Efficiency. In order to test the validity of his impression he has collected the following data relating to the movement of the SENSEX for the last 20 days.*

| Days | Open | High | Low | Close |
|---|---|---|---|---|
| 1 | 33470.94 | 33513.79 | 33438.03 | 33453.99 |
| 2 | 33453.64 | 33478.11 | 33427.82 | 33434.83 |
| 3 | 33414.06 | 33440.29 | 33397.65 | 33431.93 |
| 4 | 33434.94 | 33446.18 | 33377.78 | 33383.41 |
| 5 | 33372.92 | 33380.27 | 33352.12 | 33370.93 |
| 6 | 33375.85 | 33389.49 | 33331.42 | 33340.75 |
| 7 | 33340.89 | 33340.89 | 33310.95 | 33330.98 |
| 8 | 33326.84 | 33340.91 | 33306.17 | 33335.08 |
| 9 | 33307.16 | 33328.22 | 33296.43 | 33301.97 |
| 10 | 33298.64 | 33318.60 | 33254.28 | 33259.03 |
| 11 | 33260.04 | 33228.85 | 33241.66 | 33251.53 |
| 12 | 33255.92 | 33289.46 | 33249.46 | 33285.89 |
| 13 | 33288.86 | 33535.67 | 33255.98 | 33329.28 |
| 14 | 33335.00 | 33346.21 | 33276.72 | 33284.17 |
| 15 | 33293.83 | 33310.86 | 33278.54 | 33298.78 |
| 16 | 33300.02 | 33337.79 | 33300.02 | 33325.38 |
| 17 | 33323.36 | 33356.34 | 33322.44 | 33329.95 |
| 18 | 33322.81 | 33345.98 | 33317.44 | 33319.67 |
| 19 | 33317.51 | 33321.18 | 33294.19 | 33302.32 |
| 20 | 33290.86 | 33324.96 | 33279.62 | 33319.61 |

*You are required:*

*To test the **Weak Form of Market Efficiency** using Auto-Correlation test, taking time lag of 10 days.* ***(8 Marks)***

*(b) A proposed foreign investment involves creation of a plant with an annual output of 1 million units. The entire production will be exported at a selling price of USD 10 per unit.*

*At the current rate of exchange dollar cost of local production equals to USD 6 per unit. Dollar is expected to decline by 10% or 15%. The change in local cost of production and probability from the expected current level will be as follows:*

| ***Decline in value of USD (%)*** | ***Reduction in local cost of production (USD/unit)*** | ***Probability*** |
|---|---|---|
| *0* | *-* | *0.4* |
| *10* | *0.30* | *0.4* |
| *15* | *0.15 Additional reduction* | *0.2* |

*The plant at the current rate of exchange will have a depreciation of USD 1 million annually. Assume local Tax rate as 30%.*

*You are required to find out:*

*(i) Annual Cash Flow After Tax (CFAT) under all the different scenarios of exchange rate.*

*(ii) Expected value of CFAT assuming no repatriation of profits.*

*(iii) Viability of the investment proposal assuming an initial investment of USD 25 million on plant and working capital with a required rate of return of 11% on investment and on the basis of CFAT arrived under option (ii). The CFAT will grow @ 3% per annum in perpetuity.* ***(8 Marks)***

*(c) As a financial strategist you will depend on certain key financial decisions. Discuss.*

***(4 Marks)***

**Answer**

**(a)**

| Period 1 | Closing Prices | Change | Period 2 | Closing Prices | Change |
|---|---|---|---|---|---|
| 1 | 33453.99 | | 11 | 33251.53 | |
| 2 | 33434.83 | -19.16 | 12 | 33285.89 | 34.36 |
| 3 | 33431.93 | - 2.90 | 13 | 33329.28 | 43.39 |
| 4 | 33383.41 | - 48.52 | 14 | 33284.17 | - 45.11 |
| 5 | 33370.93 | - 12.48 | 15 | 33298.78 | 14.61 |
| 6 | 33340.75 | - 30.18 | 16 | 33325.38 | 26.6 |
| 7 | 33330.98 | -9.77 | 17 | 33329.95 | 4.57 |
| 8 | 33335.08 | 4.1 | 18 | 33319.67 | -10.28 |
| 9 | 33301.97 | - 33.11 | 19 | 33302.32 | -17.35 |
| 10 | 33259.03 | - 42.94 | 20 | 33319.61 | 17.29 |

| X | Y | $X^2$ | $Y^2$ | XY |
|---|---|---|---|---|
| -19.16 | 34.36 | 367.11 | 1180.61 | -658.34 |
| -2.90 | 43.39 | 8.41 | 1882.69 | -125.83 |
| -48.52 | -45.11 | 2354.19 | 2034.91 | 2188.74 |
| -12.48 | 14.61 | 155.75 | 213.45 | -182.33 |
| -30.18 | 26.6 | 910.83 | 707.56 | -802.79 |
| -9.77 | 4.57 | 95.45 | 20.88 | -44.65 |
| 4.1 | -10.28 | 16.81 | 105.68 | -42.15 |
| -33.11 | -17.35 | 1096.27 | 301.02 | 574.46 |
| -42.94 | 17.29 | 1843.84 | 298.94 | -742.43 |
| $\sum X$ = -194.96 | $\sum Y$ = 68.08 | $\sum X^2$ = 6848.66 | $\sum Y^2$ = 6745.74 | $\sum XY$ = 164.68 |
| $\bar{X}$ = - 21.66 | $\bar{Y}$ = 7.56 | | | |

$$b = \frac{\sum XY - n\overline{XY}}{\sum X^2 - n(\overline{X})2} = \frac{164.68 - 9(-21.66)(7.56)}{6848.66 - 9(-21.66)^2} = 0.624$$

$$a = \bar{Y} - b\bar{X} = 7.56 - 0.624(-21.66) = 21.08$$

$$r^2 = \frac{a\sum Y + b\sum XY - n(\bar{Y})^2}{\sum Y^2 - n(\bar{Y})^2} = \frac{21.08(68.08) + 0.624(164.68) - 9(7.56)^2}{6745.74 - 9(7.56)^2}$$

$r^2 = 0.164$

$r = 0.405$

There is moderate degree of correlation between the returns of two periods hence it can be concluded that the market does not show the weak form of efficiency.

**(b) (i)** Calculation of Annual CFAT

| | Scenario 1 | Scenario 2 | Scenario 3 |
|---|---|---|---|
| Annual Sales (in units) (A) | 10,00,000 | 10,00,000 | 10,00,000 |
| | **US $** | **US $** | **US $** |
| Selling price p.u. | 10.00 | 10.00 | 10.00 |
| Cost p.u. | 6.00 | 5.70 | 5.55 |
| Profit p.u. (B) | 4.00 | 4.30 | 4.45 |
| Total Profit (A x B) | 40,00,000 | 43,00,000 | 44,50,000 |
| Less: Depreciation | 10,00,000 | 9,00,000 | 8,50,000 |
| PBT | 30,00,000 | 34,00,000 | 36,00,000 |

| | | | |
|---|---|---|---|
| Less: Tax @30% | 9,00,000 | 10,20,000 | 10,80,000 |
| PAT | 21,00,000 | 23,80,000 | 25,20,000 |
| Add: Depreciation | 10,00,000 | 9,00,000 | 8,50,000 |
| Expected CFAT (US$) | 31,00,000 | 32,80,000 | 33,70,000 |

**(ii) Expected Value of CFAT**

= US$ 31,00,000 x 0.4 + US$ 32,80,000 x 0.4 + US$ 33,70,000 x 0.2

= US$ 32,26,000

**(iii) Viability of proposal:**

Expected CFAT = US $ 32,26,000

Expected Growth Rate = 3%

Expected Value of inflow in perpetuity $= \frac{\text{US\$ 32,26,000 (1.03)}}{0.11 - 0.03}$

$= \frac{33,22,780}{0.08}$ = US$ 4,15,34,750

| | US $ |
|---|---|
| Value of Inflows | 4,15,34,750 |
| Less: Initial Outlay | 2,50,00,000 |
| NPV of project | 1,65,34,750 |

Since NPV is positive, project is viable.

**(c)** The key decisions falling within the scope of financial strategy are the following:

1. **Financing decisions:** These decisions deal with the mode of financing or mix of equity capital and debt capital.
2. **Investment decisions:** These decisions involve the profitable utilization of firm's funds especially in long-term projects (capital projects). Since the future benefits associated with such projects are not known with certainty, investment decisions necessarily involve risk. The projects are therefore evaluated in relation to their expected return and risk.
3. **Dividend decisions:** These decisions determine the division of earnings between payments to shareholders and reinvestment in the company.
4. **Portfolio decisions:** These decisions involve evaluation of investments based on their contribution to the aggregate performance of the entire corporation rather than on the isolated characteristics of the investments themselves.

**Question 2**

*(a) On 1st January, 2020, an open ended scheme of mutual fund had outstanding units of 300 lakhs with a NAV of ₹ 20.25. At the end of January 2020, it had issued 5 lakhs units at an opening NA V plus a load of 2%, adjusted for dividend equalisation. At the end of February 2020, it had repurchased 2.5 lakhs units at an opening NAV less 2% exit load adjusted for dividend equalisation. At the end of March 2020, it had distributed 70 per cent of its available income.*

*In respect of January - March quarter, the following additional information is available:*

| | |
|---|---|
| *Value appreciation of the portfolio* | *₹ 460 lakhs* |
| *Income for January* | *₹ 24 lakhs* |
| *Income for February* | *₹ 36 lakhs* |
| *Income for March* | *₹ 47 lakhs* |

*You are required to calculate:*

*(i) Income available for distribution*

*(ii) Issue price at the end of January*

*(iii) Repurchase price at the end of February*

*(iv) Closing Value of Net Assets at the end of March.* ***(8 Marks)***

*(b) X Ltd., an Indian company, is considering a proposal to make an investment of USD 1,65,00,000 in Latin America. The project will have a life of 5 years. The current spot exchange rate is INR/USD 72. All investments and revenues will occur in USD. The USD and INR risk free rates are 8% and 12% respectively. The following cash flow is expected form the project.*

| *Year* | *Cash inflow (USD)* |
|---|---|
| *1* | *30,00,000* |
| *2* | *37,50,000* |
| *3* | *45,00,000* |
| *4* | *60,00,000* |
| *5* | *75,00,000* |

*Assume required rate of return on the project as 14%.*

*You are required to calculate:*

*(i) The viability of the project using foreign currency approach.*

*(ii) What will be the impact if there is a withholding tax of 10% applicable on the project.*

***(8 Marks)***

*(c) "The process of securitisation can be viewed as process of creation of additional financial product of securities in the market backed by collaterals." What are the other features? Describe.* ***(4 Marks)***

**Answer**

**(a) (i) Calculation of Income Available for Distribution**

| | Units (Lakh) | Per Unit (₹) | Total (₹ In lakh) |
|---|---|---|---|
| Income from January | 300 | 0.0800 | 24.0000 |
| *Add*: Dividend equalization collected on issue | 5 | 0.0800 | 0.4000 |
| | 305 | 0.0800 | 24.4000 |
| *Add*: Income from February | | 0.1180 | 36.0000 |
| | 305 | 0.1980 | 60.4000 |
| *Less*: Dividend equalization paid on repurchase | 2.50 | 0.1980 | (0.4950) |
| | 302.50 | 0.1980 | 59.9050 |
| *Add*: Income from March | | 0.1554 | 47.0000 |
| | 302.50 | 0.3534 | 106.9050 |
| *Less*: Dividend Paid | | 0.2474 | (74.8335) |
| | 302.50 | 0.1060 | 32.0715 |

**(ii) Calculation of Issue Price at the end of January**

| | ₹ |
|---|---|
| Opening NAV | 20.250 |
| Add: Entry Load 2% of ₹ 20.25 | 0.405 |
| | 20.655 |
| Add: Dividend Equalization collected on Issue Price | 0.080 |
| | 20.735 |

**(iii) Calculation of Repurchase Price at the end of February**

| | ₹ |
|---|---|
| Opening NAV | 20.250 |
| Less: Exit Load 2% of ₹ 20.250 | (0.405) |
| | 19.845 |
| Add: Dividend Equalization paid on Issue Price | 0.198 |
| | 20.043 |

**(iv) Closing NAV at the end of March**

| | | ₹ (Lakh) |
|---|---|---|
| Opening Net Asset Value (₹ 20.25 × 300) | | 6075.000 |
| Portfolio Value Appreciation | | 460.000 |
| Issue of Fresh Units (5 × 20.735) | | 103.675 |
| Income Received (24 + 36 + 47) | | 107.000 |
| | | 6745.675 |
| *Less*: Units repurchased (2.5 × 20.043) | - 50.1075 | |
| Income Distributed | -74.8335 | (-124.941) |
| Closing Net Asset Value | | 6620.734 |
| Closing Units (300 + 5 – 2.5) lakh | | 302.50 lakh |
| Closing NAV as on 31st March | | ₹ 21.8867 |

**(b) (i) Viability of the Project**

(1 + 0.12) (1 + Risk Premium) = (1 + 0.14)

Or, 1 + Risk Premium = 1.14/1.12 = 1.0179

Therefore, Risk adjusted dollar rate is = 1.0179 x 1.08 = 1.099 – 1 = 0.099

Calculation of NPV

| Year | Cash flow (Million) US$ | PV Factor at 9.9% | P.V. |
|---|---|---|---|
| 1 | 3.00 | 0.910 | 2.730 |
| 2 | 3.75 | 0.828 | 3.105 |
| 3 | 4.50 | 0.753 | 3.389 |
| 4 | 6.00 | 0.686 | 4.116 |
| 5 | 7.50 | 0.624 | 4.680 |
| | | | 18.02 |
| | | Less: Investment | 16.50 |
| | | NPV | 1.52 |

Therefore, Rupee NPV of the project is = ₹ 72 x US$ 1.52 Million

= ₹ 109.44 Million

Project is viable as the NPV is positive.

**(ii) If there is a withholding tax of 10%**

| | |
|---|---|
| Total PV of Cash Inflows | US$ 18.02 Million |
| Less: Withholding Tax @ 10% | US$ 1.802 Million |
| PV of Cash Inflow after Withholding Tax | US$ 16.218 Million |
| Less: Initial Investment | US$ 16.50 Million |
| NPV | (US$ 0.282 Million) |

Therefore, Rupee NPV of the project is = ₹ 72 x (US$ 0.282 Million)

= - ₹ 20.304 Million

Thus, if there is a withholding tax of 10% then the project will not be viable.

**(c)** The other features of Securitization are as follows:

(i) Bundling and Unbundling – When all the assets are combined in one pool it is bundling and when these are broken into instruments of fixed denomination it is unbundling.

(ii) Tool of Risk Management – In case of assets are securitized on non-recourse basis, then securitization process acts as risk management as the risk of default is shifted.

(iii) Structured Finance – In the process of securitization, financial instruments are tailor structured to meet the risk return trade off profile of investor, and hence, these securitized instruments are considered as best examples of structured finance.

(iv) Trenching – Portfolio of different receivable or loan or asset are split into several parts based on risk and return they carry called 'Trenche'. Each Trench carries a different level of risk and return.

(v) Homogeneity – Under each tranche the securities issued are of homogenous nature and even meant for small investors who can afford to invest in small amounts.

**Question 3**

*(a) The price of March Nifty Futures Contract on a particular day was 9170. The minimum trading lot on Nifty Futures is 50. The initial margin is 8 and the maintenance margin is 6%. The index closed at the following levels on next five days:*

| ***Day*** | *1* | *2* | *3* | *4* | *5* |
|---|---|---|---|---|---|
| ***Settlement Price (₹)*** | *9380* | *9520* | *9100* | *8960* | *9140* |

*You are required to calculate:*

*(i) Mark to market cash flows and daily closing balances on account of*

*(a) An investor who has taken a long position at 9170*

*(b) An investor who has taken a short position at 9170*

*(ii) Net profit/ loss on each of the contracts* ***(8 Marks)***

*(b) M/s. Sky products Ltd., of Mumbai, an exporter of sea foods has submitted a 60 days bill for EUR 5,00,000 drawn under an irrevocable Letter of Credit for negotiation. The company has desired to keep 50% of the bill amount under the Exchange Earners Foreign Currency Account (EEFC). The rates for ₹/USD and USD/EUR in inter-bank market are quoted as follows:*

| | *₹/ USD* | *USD/EUR* |
|---|---|---|
| *Spot* | *67.8000 - 67.8100* | *1.0775 - 1.8000* |
| *1 month forward* | *10/11 Paise* | *0.20/0.25 Cents* |
| *2 months forward* | *21/22 Paise* | *0.40/0.45 Cents* |
| *3 months forward* | *32/33 Paise* | *0.70/0.75 Cents* |

*Transit Period is 20 days. Interest on post shipment credit is 8% p.a. Exchange Margin is 0.1%. Assume 365 days in a year.*

*You are required to calculate:*

*(i) Exchange rate quoted to the company*

*(ii) Cash inflow to the company*

*(iii) Interest amount to be paid to bank by the company.* ***(8 Marks)***

*(c) Following are the yields on Zero Coupon Bonds (ZCB) having a face value of ₹1,000*

| ***Maturity (Years)*** | ***Yield to Maturity (YTM)*** |
|---|---|
| *1* | *10%* |
| *2* | *11%* |
| *3* | *12%* |

*Assume that the term structure of interest rate will remain the same.*

*You are required to*

*(i) Calculate the implied one year forward rates*

*(ii) Expected Yield to Maturity and prices of one year and two year Zero Coupon Bonds at the end of the first year.* ***(4 Marks)***

**Answer**

**(a) (i)** Contract Size (₹ 9,170 x 50) = ₹ 4,58,500

Initial Margin (8% of 4,58,500) = ₹ 36,680

Maintenance Margin (6% of 4,58,500) = ₹ 27,510

(1) For investor taken Long position:

| Day | Change in Future value (₹) | Margin A/c (₹) | Call Money (₹) |
|---|---|---|---|
| 0 | ----- | 36,680 | |
| 1 | (₹ 9,380 - ₹ 9,170) x 50 = 10,500 | 47,180 | |
| 2 | (₹ 9,520 - ₹ 9,380) x 50 = 7,000 | 54,180 | |
| 3 | (₹ 9,100 - ₹ 9,520) x 50 = - 21,000 | 33,180 | |
| 4 | (₹ 8,960 - ₹ 9,100) x 50 = - 7,000 | 36,680 | 10,500 |
| 5 | (₹ 9,140 - ₹ 8,960) x 50 = 9,000 | 45,680 | |

(2) For investor taken Short position:

| Day | Change in Future value (₹) | Margin A/c (₹) | Call Money (₹) |
|---|---|---|---|
| 0 | ----- | 36,680 | |
| 1 | (₹ 9,170 - ₹ 9,380) x 50 = -10,500 | 36,680 | 10,500 |
| 2 | (₹ 9,380 - ₹ 9,520) x 50 = -7,000 | 29,680 | |
| 3 | (₹ 9,520 - ₹ 9,100) x 50 = 21,000 | 50,680 | |
| 4 | (₹ 9,100 - ₹ 8,960) x 50 = 7,000 | 57,680 | |
| 5 | (₹ 8,960 - ₹ 9,140) x 50 = -9,000 | 48,680 | |

**(ii)** Calculation of Net Profit/Loss

(1) Long Position

| | (₹) |
|---|---|
| Ending margin | 45,680 |
| Less: Initial Margin | 36,680 |
| Profit | 9,000 |
| Less: Margin Call | 10,500 |
| Net Loss | 1,500 |

OR, Loss = (9,140 – 9,170) x 50 = (₹ 1,500)

(2) Short Position

| | (₹) |
|---|---|
| Ending margin | 48,680 |
| Less: Initial Margin | 36,680 |

| | |
|---|---|
| Profit | 12,000 |
| Less: Margin Call | 10,500 |
| **Net Profit** | **1,500** |

**OR**, Profit = (9,170 – 7,040) x 50 = ₹ 1,500

**(b) (i)** Transit and usance period is 80 days. It will be rounded off to the lower of months and @ months forward bid rate is to be taken

| | |
|---|---|
| ₹/USD | ₹ 67.8000 |
| Add: Premium for 2 months | ₹ 0.2100 |
| | ₹ 68.0100 |
| Less: Exchange margin @ 0.1% | ₹ 0.0680 |
| Bid rate for USD | ₹ 67.9420 |
| USD/EUR | USD 1.0775 |
| Add: Premium | USD 0.0040 |
| | USD 1.0815 |
| ₹/EUR Rate (67.942 x 1.0815) | ₹ 73.4793 |
| Amount of Export Bill | EUR 5,00,000 |
| Less: EEFC | EUR 2,50,000 |
| | EUR 2,50,000 |
| Exchange Rate | ₹ 73.4793 |

(ii) Cash Inflow ₹ 1,83,69,825

(iii) Interest for 80 days @ 8% ₹ 3,22,101

**(c) (i) Calculation of Forward Rates**

| Maturity | YTM (%) | PVIF | Face value | Price | Forward rate |
|---|---|---|---|---|---|
| 1 | 10 | 0.909 | 1,000 | 909.09 | |
| 2 | 11 | 0.812 | 1,000 | 811.62 | 0.1201 i.e. 12.01% |
| 3 | 12 | 0.712 | 1,000 | 711.78 | 0.1403 i.e. 14.03% |

**(ii) Calculation of Expected Prices and YTM**

| Maturity | Forward rate | Face value | Price | YTM |
|---|---|---|---|---|
| 2 | 0.1201 | 1,000 | $\frac{1,000}{(1+0.1201)} = 892.78$ | 0.1201 i.e. 12.01% |

| | | | | | |
|---|---|---|---|---|---|
| 3 | 0.1403 | 1,000 | $\frac{1,000}{(1+0.1201)(1+0.1403)} = 782.93$ | 0.1302* i.e. | 13.02% |

* $\sqrt{\left(\frac{1,000}{782.93}\right)} - 1 = 0.1302$

**Question 4**

*(a) The following are the financial statements of A Ltd., and B Ltd. for the financial year ended 31st March, 2020. Both the companies are working in the same industry.*

***Balance Sheets (₹)***

| ***Particulars*** | ***A Ltd.*** | ***B Ltd.*** |
|---|---|---|
| *Total Current Assets* | *15,00,000* | *12,00,000* |
| *Total Net Fixed Assets* | *12,00,000* | *6,00,000* |
| ***Total Assets*** | ***27,00,000*** | ***18,00,000*** |
| *Equity Capital (Face Value ₹ 10)* | *10,00,000* | *8,00,000* |
| *Retained Earnings* | *3,00,000* | *---* |
| *14% Long Term Debt* | *7,00,000* | *5,00,000* |
| *Total Current Liabilities* | *7,00,000* | *5,00,000* |
| ***Total Liabilities*** | ***27,00,000*** | ***18,00,000*** |

***Income Statement (₹)***

| ***Particulars*** | ***A Ltd.*** | ***B Ltd.*** |
|---|---|---|
| *Net Sales* | *33,10,000* | *16,60,000* |
| *Gross Profit* | *6,90,000* | *3,40,000* |
| *Operating Expenses* | *2,00,000* | *1,00,000* |
| *Interest* | *98,000* | *70,000* |
| *EBT* | *3,92,000* | *1,70,000* |
| *Tax @ 30%* | *1,17,600* | *51,000* |
| *PAT* | *2,74,400* | *1,19,000* |
| *Additional information :* | | |
| *Dividend Pay-out Ratio* | *40%* | *60%* |
| *Market Price per Share* | *40* | *15* |

*You are required to calculate:*

*(i) Earnings Per share (EPS), Profit Earning Ratio (PER), Return on Equity (ROE) and Book Value Per Share (BVPS) for both the firms.*

*(ii) Estimate future EPS growth rate for both the firms.*

*(iii) If on acquisition of B Ltd. by A Ltd., intrinsic value of B Ltd., will be ₹ 20 per share, develop range of justifiable Exchange Ratio (ER) that can be offered by A Ltd., to shareholders of B Ltd.*

*(iv) Based on your analysis in (i) and (ii) whether the negotiated ratio will be close to upper or lower range. Justify.*

*(v) Post-merger EPS on an ER of 0.4: 1. What will be immediate accretion or dilution to EPS to the shareholders of both the firms?*

*(vi) Post-Merger MPS on the basis of ER of 0.4 : 1* ***(12 Marks)***

*(b) Shyam buys 10,000 shares of X Ltd., @ ₹ 25 per share and obtains a complete hedge of shorting 400 Nifty at ₹ 1,100 each. He closes out his position at the closing price of the next day when the share of X Ltd., has fallen by 4% and Nifty Future has dropped by 2.5%.*

*What is the overall profit or loss from this set of transaction?* ***(4 Marks)***

*(c) Venture Capital Funding passes through various stages. Discuss.* ***(4 Marks)***

**Answer**

**(a)** Market price per share (MPS) = EPS X P/E ratio or P/E ratio = MPS/EPS

(i) Determination of EPS, P/E ratio, ROE and BVPS of A Ltd. and B Ltd.

| | | A Ltd. | B Ltd. |
|---|---|---|---|
| Profit After Tax | (PAT) | ₹ 2,74,400 | ₹ 1,19,000 |
| No. of Shares | (N) | 100000 | 80000 |
| EPS | (PAT/N) | ₹ 2.744 | ₹ 1.4875 |
| Market price per share | (MPS) | 40 | 15 |
| P/E Ratio | (MPS/EPS) | 14.58 | 10.08 |
| Equity Funds | (EF) | ₹ 13,00,000 | ₹ 8,00,000 |
| BVPS | (EF/N) | 13 | 10 |
| ROE | (EAT/EF) × 100 | 21.11% | 14.88% |

(ii) Estimation of growth rates in EPS for A Ltd. and B Ltd.

| | | | |
|---|---|---|---|
| Retention Ratio | (1-D/P ratio) | 0.6 | 0.4 |
| Growth Rate | (ROE × Retention Ratio) | 12.67% | 5.95% |

(iii) Range of Justifiable exchange ratio

(a) Intrinsic value based = ₹20 / ₹40 = 0.5:1 (upper limit)

(b) Market price based = $MPS_{DA}/MPS_{BA}$ = ₹15 / ₹40 = 0.375:1(lower limit)

(iv) Since, A Ltd. has a higher EPS, ROE, P/E ratio and even higher EPS growth expectations, the negotiable terms would be expected to be closer to the lower limit, based on the existing share prices.

(v) Calculation of Post merger EPS and its effects

| Particulars | | | A Ltd. | B Ltd. | Combined |
|---|---|---|---|---|---|
| EAT | (₹) | (i) | 2,74,400 | 1,19,000 | 3,93,400 |
| Share outstanding | | (ii) | 100000 | 80000 | 132000* |
| EPS | (₹) | (i) / (ii) | 2.744 | 1.4875 | 2.980 |
| EPS Accretion (Dilution) | (₹) | | 0.236 | (0.296***) | |

(vi) Estimation of Post merger MPS

| Particulars | | | A Ltd. | B Ltd. | Combined |
|---|---|---|---|---|---|
| EPS | (₹) | (i) | 2.744 | 1.4875 | 2.980 |
| P/E Ratio | | (ii) | 14.58 | 10.08 | 14.58 |
| MPS | (₹) | (i) x (ii) | 40 | 15 | 43.45 |

* Shares outstanding (combined) = 100000 shares + (.40 × 80000) = 132000 shares

** EPS claim per old share = ₹2.98 × 0.4 ₹ 1.192

***EPS dilution = ₹1.4875 – ₹ 1.192 ₹ 0.296

**(b)** Cash Outlay

= 10000 x ₹ 25 – 400 x ₹ 1,100

= ₹ 2,50,000 – ₹ 4,40,000 = - ₹ 1,90,000

*Cash Inflow at Close Out*

= 10000 x ₹ 25 x 0.96 - 400 x ₹ 1,100 x 0.975

= ₹ 2,40,000 – ₹ 4,29,000 = - ₹ 1,89,000

*Gain/ Loss*

= ₹ 1,90,000 – ₹ 1,89,000 = ₹ 1,000 (Gain)

**(c) Stages of Venture Capital Funding:**

The various stages of Venture Capital Funding are as follows:

1. Seed Money: Low level financing needed to prove a new idea.
2. Start-up: Early stage firms that need funding for expenses associated with marketing and product development.
3. First-Round: Early sales and manufacturing funds.
4. Second-Round: Working capital for early stage companies that are selling product, but not yet turning in a profit.
5. Third Round: Also called Mezzanine financing, this is expansion money for a newly profitable company.
6. Fourth-Round: Also called bridge financing, it is intended to finance the "going public" process.

**Question 5**

*(a) Ramesh has identified stocks of two companies A and B having good investment potential:*

*Following data is available for these stocks:*

| *Year* | *A (Market Price per Share in ₹)* | *B (Market Price per Share in ₹)* |
|---|---|---|
| *2013* | *19.60* | *8.70* |
| *2014* | *18.75* | *12.80* |
| *2015* | *33.42* | *16.20* |
| *2016* | *42.64* | *18.25* |
| *2017* | *43.25* | *15.60* |
| *2018* | *44.60* | *13.25* |
| *2019* | *34.75* | *18.60* |

*You are required to calculate:*

*(i) The Risk and Return by investing in Stock A and B*

*(ii) The Risk and Return by investing in a portfolio of these Stocks if he invests in Stock A and B in proportion of 6 : 4.*

*(iii) The better opportunity for investment* ***(10 Marks)***

(b) *M/s. Roly Ltd. wants to acquire M/s. Poly Ltd. The following is the Balance Sheet of Poly Ltd. as on 31st March, 2020 :*

| ***Liabilities*** | ***₹*** | ***Assets*** | ***₹*** |
|---|---|---|---|
| *Equity Capital (₹ 10 per share)* | *10,00,000* | *Cash* | *20,000* |
| *Retained Earnings* | *3,00,000* | *Debtors* | *50,000* |
| *12% Debentures* | *3,00,000* | *Inventories* | *2,00,000* |
| *Creditors and other liability* | *3,20,000* | *Plant & Machinery* | *16,50,000* |
| ***Total*** | ***19,20,000*** | ***Total*** | ***19,20,000*** |

*Shareholders of Poly Ltd. will get one share of Roly Ltd. at current Market price of ₹ 20 for every two shares. External liabilities are expected to be settled at a discount of ₹ 20,000. Sundry debtors and Inventories are expected to realise ₹ 2,00,000.*

*Poly Ltd. will run as an independent unit. Cash Flow After Tax is expected to be ₹ 4,00,000 per annum for next 6 years. Assume the disposal value of the plant after 6 years will be ₹ 1,50,000.*

*Poly Ltd. requires a return of 14%*

| ***n*** | *1* | *2* | *3* | *4* | *5* | *6* |
|---|---|---|---|---|---|---|
| ***PVIF (14%, n)*** | *0.877* | *0.769* | *0.675* | *0.592* | *0.519* | *0.456* |

*Advise the Board of Directors on the financial feasibility of the Proposal.* ***(6 Marks)***

(c) *Non-bank Financial Sources are becoming popular to finance Start-ups. Discuss.*

***(4 Marks)***

**Answer**

**(a)**

| | A | | | | B | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Market Price Per Share in ₹ | Return (%) | Return - $\bar{A}$ | Squared | Market Price Per Share in ₹ | Return (%) | Return - $\bar{B}$ | Squared | (Return - $\bar{A}$) x (Return - $\bar{B}$) |
| 2013 | 19.60 | | | | 8.70 | | | | |
| 2014 | 18.75 | -4.34 | -18.33 | 335.9889 | 12.80 | 47.13 | 30.94 | 957.2836 | -567.1302 |
| 2015 | 33.42 | 78.24 | 64.25 | 4128.0625 | 16.20 | 26.56 | 10.37 | 107.5369 | 666.2725 |
| 2016 | 42.64 | 27.59 | 13.60 | 184.9600 | 18.25 | 12.65 | -3.54 | 12.5316 | -48.1440 |
| 2017 | 43.25 | 1.43 | -12.56 | 157.7536 | 15.60 | -14.52 | -30.71 | 943.1041 | 385.7176 |
| 2018 | 44.60 | 3.12 | -10.87 | 118.1569 | 13.25 | -15.06 | -31.25 | 976.5625 | 339.6875 |
| 2019 | 34.75 | -22.09 | -36.08 | 1301.7664 | 18.60 | 40.38 | 24.19 | 585.1561 | -872.7752 |
| | | 83.95 | | 6226.6883 | | 97.14 | | 3582.1748 | -96.3718 |
| Mean ($\bar{A}$) | | 13.99 | Variance | 1037.7814 | Mean ($\bar{B}$) | 16.19 | Variance | 597.0291 | Cov.= -16.0620 |

(i) Return A = 13.99% and Risk (SD) = $\sqrt{1037.7814}$ = 32.2146 and Return B = 16.19% and Risk (SD) = $\sqrt{597.0291}$= 24.4342

(ii) Return of Portfolio = 0.60 x 13.99% + 0.40 x 16.19% = 14.87%

Risk (Standard Deviation) of Portfolio = $[0.60^2 \times 1037.7814 + 0.40^2 \times 597.0291 + 2 \times 0.60 \times 0.40 \times (-16.0620)]^{½}$

= $[373.6013 + 95.5247 - 7.7098]^{½}$ = 21.4806

(iii) On the basis of Return 'B' is preferable and on the basis of Risk 'Portfolio Investment' is preferable over the individual stocks.

**(b)** Calculation of Purchase Consideration

| | ₹ |
|---|---|
| Issue of Share 50000 x ₹ 20 | 10,00,000 |
| External Liabilities settled | 3,00,000 |
| 12% Debentures | 3,00,000 |
| | 16,00,000 |
| Less: Realization of Debtors and Inventories | 2,00,000 |
| Cash | 20,000 |
| | 13,80,000 |

Net Present Value = PV of Cash Inflow + PV of Demerger of Roly Ltd. – Cash Outflow

= ₹ 4,00,000 PVAF(14%,6) + ₹ 1,50,000 PVF(14%, 6) – ₹ 13,80,000

= ₹ 4,00,000 x 3.888 + ₹ 1,50,000 x 0.456 – ₹ 13,80,000

= ₹ 15,55,200 + ₹ 68,400 – ₹ 13,80,000

= ₹ 2,43,600

Since NPV of the decision is positive it is advantageous to acquire Poly Ltd.

**(c)** **Non-bank Financial Sources to finance Start-ups:**

**(i)** **Personal financing.** It may not seem to be innovative but you may be surprised to note that most budding entrepreneurs never thought of saving any money to start a business. This is important because most of the investors will not put money into a deal if they see that you have not contributed any money from your personal sources.

**(ii)** **Personal credit lines.** One qualifies for personal credit line based on one's personal credit efforts. Credit cards are a good example of this. However, banks are

very cautious while granting personal credit lines. They provide this facility only when the business has enough cash flow to repay the line of credit.

(iii) **Family and friends.** These are the people who generally believe in you, without even thinking that your idea works or not. However, the loan obligations to friends and relatives should always be in writing as a promissory note or otherwise.

(iv) **Peer-to-peer lending.** In this process group of people come together and lend money to each other. Peer to peer to lending has been there for many years. Many small and ethnic business groups having similar faith or interest generally support each other in their start up endeavours.

(v) **Crowdfunding**. Crowdfunding is the use of small amounts of capital from a large number of individuals to finance a new business initiative. Crowdfunding makes use of the easy accessibility of vast networks of people through social media and crowdfunding websites to bring investors and entrepreneurs together.

(vi) **Micro Loans.** Microloans are small loans that are given by individuals at a lower interest to a new business ventures. These loans can be issued by a single individual or aggregated across a number of individuals who each contribute a portion of the total amount.

(vii) **Vendor financing.** Vendor financing is the form of financing in which a company lends money to one of its customers so that he can buy products from the company itself. Vendor financing also takes place when many manufacturers and distributors are convinced to defer payment until the goods are sold. This means extending the payment terms to a longer period for e.g. 30 days payment period can be extended to 45 days or 60 days. However, this depends on one's credit worthiness and payment of more money.

(viii) **Purchase order financing.** The most common scaling problem faced by start-ups is the inability to find a large new order. The reason is that they don't have the necessary cash to produce and deliver the product. Purchase order financing companies often advance the required funds directly to the supplier. This allows the transaction to complete and profit to flow up to the new business.

(ix) **Factoring accounts receivables.** In this method, a facility is given to the seller who has sold the good on credit to fund his receivables till the amount is fully received. So, when the goods are sold on credit, and the credit period (i.e. the date up to which payment shall be made) is for example 6 months, factor will pay most of the sold amount up front and rest of the amount later. Therefore, in this way, a start-up can meet his day to day expenses.

**Question 6**

*(a) The Balance Sheet of M/s. Sundry Ltd. as on 31-03-2020 is follows:*

*(₹ in lakhs)*

| *Liabilities* | *₹* | *Assets* | *₹* |
|---|---|---|---|
| *Share Capital* | *300* | *Fixed Assets* | *600* |
| *Reserves* | *200* | *Inventory* | *500* |
| *Long Term Loan* | *400* | *Receivables* | *240* |
| *Short Term Loan* | *300* | *Cash* | *60* |
| *Payables & Provisions* | *200* | | |
| ***Total*** | ***1400*** | ***Total*** | ***1400*** |

*Sales for the year was ₹ 600 lakhs. The sales are expected to grow by 20% during the year. The profit margin and dividend pay-out ratio are expected to be 4% and 50% respectively.*

*The company further desires that during the current year Sales to Short Term Loan and Payables and Provision should be in the ratio of 4 : 3. Ratio of fixed assets to Long Term Loans should be 1.5. Debt Equity Ratio should not exceed 1.5.*

*You are required to determine:*

*(i) The amount of External Fund Requirement (EFR)*

*(ii) The amount to be raised from Short Term, Long Term and Equity funds.* ***(8 Marks)***

*(b) XYZ has taken a six-month loan from its foreign collaborator for USD 2 millions. Interest is payable on maturity @ LIBOR plus 1%. The following information is available:*

| | | |
|---|---|---|
| *Spot Rate* | *INR/USD* | *68.5275* |
| *6 months Forward rate* | *INR/USD* | *68.4575* |
| *6 months LIBOR for USD* | *2%* | |
| *6 months LIBOR for INR* | *6%* | |

*You are required to :*

*(i) Calculate Rupee requirements if forward cover is taken.*

*(ii) Advise the company on the forward cover.*

*What will be your opinion if spot rate of INR/USD is 68.4275 ?* ***(8 Marks)***

*(c) Participants are required for the success of the securitisation process. Discuss their roles.* ***(4 Marks)***

*OR*

*Risks are inherent and integral part of the market. Discuss.*

**Answer**

**(a) (i) External Funds Requirement (EFR):**

**(₹ in lakhs)**

| | (₹) |
|---|---|
| Expected sales (₹ 600 + 20% of ₹ 600) | 720.00 |
| Profit margin @ 4% | 28.80 |
| Dividend payout ratio @ 50% | 14.40 |
| Balance to be ploughed back (A) | 14.40 |
| Additional funds required (₹ 1400 - ₹ 200*) x 0.20 (B) | 240.00 |
| Balance to be met from external source (B - A) | 225.60 |

* As current liabilities shall also be increased proportionately with increase in sales.

**(ii)** Amount to be raised from different sources with following conditions:

- Sales to short term loans and payables & provisions 4:3
- Ratio of fixed assets to long term loans 1.5
- Debt equity ratio should not exceed 1.5

**(1) Amount to be raised from short term funds:**

| | (₹ in lakhs) |
|---|---|
| New amount of short-term loans and payables & provision $\left(\frac{3}{4} \text{x } 600\right)$ | 450 |
| Less: Existing Amount of short-term loans and payables & provision | 500 |
| Amount to be raised from short term funds | Nil |

**(2) Amount to be raised from Long term funds:**

| | (₹ in lakhs) |
|---|---|
| New fixed assets (₹ 600 + 20% of ₹ 600) | 720 |
| New long-term loans (₹ 720/1.5) | 480 |
| Less: Existing long-term loans | 400 |
| Amount to be raised from Long term funds | 80 |

**(3) Amount to be raised from equity funds:**

| | (₹ in lakhs) |
|---|---|
| Amount to be raised from external sources | 225.60 |
| Less: Amount to be raised from short term funds | ---- |
| Less: Amount to be raised from Long term funds | 80.00 |
| Balance amount to be raised from equity funds | 145.60 |

**(b)** (i) Rupee requirement if forward cover is taken:

| | |
|---|---|
| 6 Month Forward rate | 68.4575 |
| Interest amount $\left(20,00,000 \times 3\%^{*} \times \frac{6}{12}\right)$ | US$ 30,000 |
| Principal amount | US$ 20,00,000 |
| | US$ 20,30,000 |

Rupee Requirement = INR 68.4575 X US$ 20,30,000 = INR 13,89,68,725

* LIBOR + 1%

(ii) Forward Rate as per Interest Rate Parity after 6 months is expected to be:

$$= 68.5275 \times \frac{(1.03)}{(1.01)} = 69.8845/US\$$$

The company should take forward cover because as per Interest Rate Parity, the rate after 6 months is expected to be higher than forward rate.

However, if spot rate is 68.4275, the expected rate as per Interest Rate Parity shall be:

$$= 68.4275 \times \frac{(1.03)}{(1.01)} = 69.7825/US\$$$

Thus, still the company should take forward cover.

**(c)** Role of various participants in the process of securitization is as follows:

**(a) Originator:** It is the initiator of deal or can be termed as securitizer. It is an entity which sells the assets lying in its books and receives the funds generated through the sale of such assets.

**(b) Special Purpose Vehicle:** Since issuer originator transfers all rights in assets to SPV, it holds the legal title of these assets. It is created especially for the purpose of securitization only and normally could be in form of a company, a firm, a society or a trust.

**(c) The Investors:** Investors are the buyers of securitized papers which may be an individual, an institutional investor such as mutual funds, provident funds, insurance companies, mutual funds, Financial Institutions etc.

**(d) Obligors:** The amount due from the obligor is transferred to SPV and hence they form the basis of securitization process and their credit standing is of paramount importance in the whole process.

**(e) Rating Agency:** Since the securitization is based on the pools of assets rather than the originators, the assets have to be assessed in terms of its credit quality and credit support available.

**(f) Receiving and Paying agent (RPA):** Also, called Servicer or Administrator, it collects the payment due from obligor(s) and passes it to SPV. It also follow up with defaulting borrower and if required initiate appropriate legal action against them. Generally, an originator or its affiliates acts as servicer.

**(g) Agent or Trustee:** Trustees are appointed to oversee that all parties to the deal perform in the true spirit of terms of agreement. Normally, it takes care of interest of investors who acquires the securities.

**(h) Credit Enhancer:** Since investors in securitized instruments are directly exposed to performance of the underlying and sometime may have limited or no recourse to the originator, they seek additional comfort in the form of credit enhancement.

**(i) Structurer:** It brings together the originator, investors, credit enhancers and other parties to the deal of securitization. Normally, these are investment bankers also called arranger of the deal. It ensures that deal meets all legal, regulatory, accounting and tax laws requirements.

**OR**

Yes, Risk is an integral part of market and this is a type of systematic risk that affects prices of any particular share move up or down consistently for some time periods in line with other shares in the market. A general rise in share prices is referred to as a bullish trend, whereas a general fall in share prices is referred to as a bearish trend. In other words, the share market moves between the bullish phase and the bearish phase. The market movements can be easily seen in the movement of share price indices such as the BSE Sensitive Index, BSE National Index, NSE Index etc.