

**CA FINAL (NEW SCHEME)
STRATEGIC FINANCIAL MANAGEMENT
JANUARY 2021 – SUGGESTED ANSWERS**

Question 1(a) [8 Marks]:

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.

Solution

The market is said to be in WEAK FORM when the prices are not random. If the prices of any period are related to the prices of the past period, then the market is said to be in WEAK FORM. Else, the market is said to be RANDOM.

For testing WEAK FORM OF MARKET EFFICIENCY, there are two popular methods viz., Serial Correlation (or Auto-Correlation) Test and Runs Test.

This problem demonstrates the steps in Auto-Correlation Test for testing WEAK FORM OF MARKET EFFICIENCY.

Step 1: Null Hypothesis (H₀):

The prices in every period is INDEPENDENT of the prices of the other period

OR

There is no significant relation between the prices of 'present' and 'past'

OR

There is Randomness

OR

There is NO WEAK FORM OF MARKET EFFICIENCY

Step 2: Alternative Hypotheses (H_a):

There is a significant relationship between the prices of 'present' and 'past'

OR

There is no Randomness

OR

There is WEAK FORM OF MARKET

Step 3: Calculation of Correlation and measuring its significance

The problem states that correlation must be calculated based on time lag of 10 days.

That is, correlation for prices of Day 1 and Day 11, Day 2 and Day 12, and so on must be calculated.

For all calculations in respect of market, only CLOSING PRICES must be considered. Hence, only Closing Prices of SENSEX of Day 1 to 10 are taken as 'X' variable and the Closing prices of SENSEX of Day 11 to 20 are taken as 'Y' Variable.

$$\text{Correlation}(r) = \frac{COV_{xy}}{\sigma_x \sigma_y}$$

X	Y	x (X-Mean of X)	Y (Y-Mean of Y)	X ²	Y ²	xy
33453.99	33251.53	89.70	-53.13	8046.0900	2822.7969	-4765.7610
33434.83	33285.89	70.54	-18.77	4975.8916	352.3129	-1324.0358
33431.93	33329.28	67.64	24.62	4575.1696	606.1444	1665.2968
33383.41	33284.17	19.12	-20.49	365.5744	419.8401	-391.7688
33370.93	33298.78	6.64	-5.88	44.0896	34.5744	-39.0432
33340.75	33325.38	-23.54	20.72	554.1316	429.3184	-487.7488
33330.98	33329.95	-33.31	25.29	1109.5561	639.5841	-842.4099
33335.08	33319.67	-29.21	15.01	853.2241	225.3001	-438.4421
33301.97	33302.32	-62.32	-2.34	3883.7824	5.4756	145.8288
33259.03	33319.61	-105.26	14.95	11079.6676	223.5025	-1573.6370
333642.90	333046.58			35487.1770	5758.8494	-8051.7210

$$\bar{x} = \frac{\sum x}{n} = 333642.90 / 10 = 33364.29$$

$$\bar{y} = \frac{\sum y}{n} = 333046.58 / 10 = 33304.66$$

$$\sigma_x = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}} = \sqrt{\frac{35487.1770}{10-1}} = 62.79$$

$$\sigma_y = \sqrt{\frac{\sum (y - \bar{y})^2}{n-1}} = \sqrt{\frac{5758.8494}{10-1}} = 25.30$$

$$COV_{xy} = \frac{\sum xy}{n-1} = \frac{-8051.7210}{10-1} = -894.64$$

$$r = \frac{COV_{xy}}{\sigma_x \sigma_y} = \frac{-894.64}{62.79 \times 25.30} = \mathbf{-0.56}$$

Correlation (r) is said to be **significant** when $|r| > 6PE$

(Note: $|r|$ = Modulus r (i.e., 'r' value ignoring the sign))

In this case, $|r| = \mathbf{0.56}$

$$PE = \text{Probable Error} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.6745 \times \frac{1-(-0.56)^2}{\sqrt{10}} = 0.1464$$

$$6PE = 6 \times 0.1464 = \mathbf{0.8784}$$

So, $|r|$ is not exceeding 6PE. Hence, 'r' is not significant.

Therefore, there is no significant relationship between 'past' and 'present' prices.

Hence, it can be concluded that there is **NO WEAK FORM OF MARKET EFFICIENCY**.

Question 1(b) [8 Marks]:

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	-	0.40
10	0.30	0.40
15	0.15 Additional Reduction	0.20

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:

- Annual Cash Flow After Tax (CFAT) under all the different scenarios of exchange rate.
- Expected value of CFAT assuming no repatriation of profits.
- 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.

Solution

Question (i):

	Scenario 1	Scenario 2	Scenario 3
Output (in Units)	1 Million	1 Million	1 Million
Selling Price per unit	10\$	10\$	10\$
Production cost per unit	6\$	5.70\$	5.55\$
Profit per Unit	4\$	4.30\$	4.45\$
	In Mn\$	In Mn\$	In Mn\$
Total Profits before Depreciation and Tax	4.0000	4.3000	4.4500
Less: Depreciation	1.0000	1.0000	1.0000
Profits before Tax	3.0000	3.3000	3.4500
Less: Tax @ 30%	0.9000	0.9900	1.0350
Profits after Tax	2.1000	2.3100	2.4150
Add: Depreciation	1.0000	1.0000	1.0000
Cash Inflows	3.1000	3.3100	3.4150

Question (ii):

Scenario	Cash Inflows (in Mn \$)	Probability	Product
1	3.1000	0.40	1.2400
2	3.3100	0.40	1.3240
3	3.4150	0.20	0.6830
			3.2470

Expected (or Average) Cash Inflows = **3.2470 Mn \$**

Question (iii):

Average Cash Inflow for Year 1: 3.2470 Mn \$
Growth Rate in Cash Flows: 3%
Required Rate of Return: 11%

	Mn \$
Present Value of Expected Cash Inflows: $\frac{3.2470 \text{ Mn \$}}{(0.11 - 0.03)}$	40.5875
Less: Initial Investment	25.0000
Net Present Value	15.5875

The NPV of the proposal is positive. Hence, the investment proposal is viable.

Question 1(c) [4 Marks]:

As a financial strategist you will depend on certain key financial decisions. Discuss.

Answer

The key decisions falling within the scope of financial strategy are as follows:

1. **Financing Decisions:** These decisions deal with the mode of financing or the deb-equity mix for the business entity.
2. **Investment Decisions:** These decisions involve the profitable utilisation of the firm's funds especially in long-term projects (i.e., 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) [8 Marks]:

On 1st January 2020, an open-ended scheme of mutual fund had outstanding units of 300 lakhs with NAV of Rs. 20.25. At the end of January 2020, it issued 5 lakh units at opening NAV plus a load of 2% adjusted for dividend equalization. At the end of February 2020, it had repurchased 2.25 lakh units at opening NAV less 2% exit load adjusted for dividend equalization. At the end of March 2020, it had distributed 70% of its available income.

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

Value appreciation of the Portfolio	Rs. 460 Lakhs
Income of January	Rs. 24 Lakhs
Income for February	Rs. 36 Lakhs
Income for March	Rs. 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; and
- (iv) Closing value of Net Assets at the end of March

Solution

NAV on 31st March	<u>Rs. Lakhs</u>
Net Assets on 1st January	
(300 Lakh Units X Rs. 19)	6075.0000
Appreciation in Portfolio	460.0000
Income during the quarter	107.0000
Inflow on issue of units (See Working Note No. 1)	103.6750
outflow on repurchase of units (See Working Note No. 2)	-50.1075
outflow on distribution of income (See Working Note No. 3)	-74.8335
NET ASSETS ON 30TH JUNE	<u>6620.7340</u>
Number of Units (300 Lakhs + 5 Lakhs – 2.5 Lakhs)	302.50
NAV per unit	21.8867

Working Note No. 1 (Inflow on issue of units)	Rs.
<u>Issue Price per unit:</u>	
Opening NAV	20.2500
Add: Entry Load @ 2%	<u>0.4050</u>
	20.6550
Add: Dividend Equalisation	
(Rs. 24 Lakhs /300 Lakh)	<u>0.0800</u>
Issue Price per unit	<u>20.7350</u>
Number of Units issued	5 Lakhs
Total Proceeds on Issue (Rs. in Lakhs)	103.6750

Working Note No. 2 (Outflow on repurchase of units)	Rs.
<u>Repurchase Price per unit:</u>	
Opening NAV	20.2500
Less: Exit Load @ 2%	<u>0.4050</u>
	19.8450
<u>Add: Dividend Equalisation</u>	
Share of Income of April	
(Rs. 24 Lakhs / 300 Lakh units)	0.0800

Share of Income of May	
(Rs. 36 Lakhs / 305 Lakh Units)	<u>0.1180</u>
Repurchase Price per Unit	<u>20.0430</u>
Number of Units repurchased	2.5 Lakhs
Outflow on Repurchase (Rs. in Lakhs)	50.1075

Working Note No.3 (Income available for distribution)	Rs. in Lakhs
Income earned during the quarter	107.0000
Add: Dividend equalisation on issue of units (0.08 X 5 Lakh Units)	0.4000
Less: Dividend equalisation on repurchase of units (0.08 + 0.1180) X 2.5 Lakh Units	<u>-0.4950</u>
Income available for Distribution	<u>106.9050</u>
Amount distributed – 70% of Rs. 106.9050 Lakhs	74.8335

Question 2(b) [8 Marks]:

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. The USD and INR risk free rates are 8% and 12% respectively. The following cash flow is expected from the project:

Year	1	2	3	4	5
Cash Flow (USD)	30,00,000	37,50,000	45,00,000	60,00,000	75,00,000

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

You are required to calculate:

- The viability of the project using foreign currency approach.
- What will be the impact if there is a withholding tax of 10% applicable on the project?

Solution

Question (i):

It is assumed that the required rate of return on the project of 14% is the expected return in India.

So, Discount Rate for evaluation in home currency: 14%

$$(1+r_f)(1+r_p) = (1+\text{Expected Rate})$$

$$(1.12)(1+r_p) = 1.14$$

$$\text{So, Risk-premium considered } (r_p) = \frac{1.14}{1.12} - 1 = 0.0179 = 1.79\%$$

Discount Rate applicable for evaluation in Foreign Currency: $(1+rf)(1+rp) = (1+\text{Expected Rate})$

So, Discount rate (Expected Return) to be considered is: $[(1.08)(1.0179)] - 1 = 0.0993$
= **9.93%**

Year	Cash Inflows (in Lakh \$.)	PV of Re.1 @ 9.93%	PV of Cash Inflows (in Lakh \$)
1	30.00	0.910	27.300
2	37.50	0.827	31.013
3	45.00	0.753	33.885
4	60.00	0.685	41.100
5	75.00	0.623	46.725
			180.023
Less: Cash Outflows			<u>165.000</u>
Net Present Value			<u>15.023</u>

So, NPV (\$) = **15.023 Lakh USD**

NPV (INR) = 15.023 Lakh USD X Rs. 72 = **Rs. 1081.656 Lakhs**

Since, the NPV is positive, the project is viable for investment.

Question (ii):

Since there is withholding tax, the amount repatriated into India will be 'Cash Flows after withholding tax of 10%'. The solution for this is shown both under 'foreign currency approach' and 'home currency approach.'

Foreign Currency Approach:

Year	Cash Inflows after Withholding Tax of 10% (in Lakh \$.)	PV of Re.1 @ 9.93%	PV of Cash Inflows (in Lakh \$)
1	27.00	0.910	24.570
2	33.75	0.827	27.911
3	40.50	0.753	30.497
4	54.00	0.685	36.990
5	67.50	0.623	42.053
			162.021
Less: Cash Outflows			<u>165.000</u>
Net Present Value			<u>(2.979)</u>

So, NPV (\$) = **(-) 2.979 Lakh USD**

NPV (INR) = (-) 2.979 Lakh USD X Rs. 72 = **Rs. (-) 214.488 Lakhs**

Home Currency Approach:

Cash Outflows: 165 Lakh \$ X Rs. 72 = **Rs. 11880 Lakhs**

Future Spot Rate per \$ in accordance with Interest Rate Parity Theory:

$$\frac{F}{S} = \frac{(1+rh)^t}{(1+rf)^t} \text{ or } F = \frac{(1+rh)^t}{(1+rf)^t} \times S$$

$$\text{Year 1: } F = \frac{(1.12)^1}{(1.08)^1} \times \text{Rs. 72.00} = \text{Rs. 74.67}$$

$$\text{Year 2: } F = \frac{(1.12)^2}{(1.08)^2} \times \text{Rs. 72.00} = \text{Rs. 77.43}$$

$$\text{Year 3: } F = \frac{(1.12)^3}{(1.08)^3} \times \text{Rs. 72.00} = \text{Rs. 80.30}$$

$$\text{Year 4: } F = \frac{(1.12)^4}{(1.08)^4} \times \text{Rs. 72.00} = \text{Rs. 83.27}$$

$$\text{Year 5: } F = \frac{(1.12)^5}{(1.08)^5} \times \text{Rs. 72.00} = \text{Rs. 86.36}$$

Year	Cash Inflows (in Lakh Rs.)	PV of Re.1 @ 14%	PV of Cash Inflows (in Lakh Rs.)
1	2016.09	0.877	1768.11
2	2613.26	0.769	2009.60
3	3252.15	0.675	2195.20
4	4496.58	0.592	2661.98
5	5829.30	0.519	3025.41
			11660.30
			<u>11880.00</u>
			(219.70)
Net Present Value			

Cash Flow (in Rs.) = Cash Flow in Lakh \$ X (1- Withholding Tax @ 10%) X Future Spot Rate per \$

Note: The difference in NPV under the two approaches is on account of 'rounding off' the cash inflows and 'rounding off' the present value numbers.

Since the NPV is negative, it is not advisable to invest in the project if there is withholding tax applicable.

Question 2(c) [4 Marks]:

“The process of securitisation can be viewed as a process of creation of additional financial product of securities in the market backed by collaterals.” What are the other features? Describe.

Answer

Following are the features of securitization:

- (i) Securitization is the process of creation of additional financial product of securities in the market backed by collaterals.
- (ii) It involves bundling (i.e., combining assets in one pool) and unbundling (i.e., breaking instruments into units of fixed denomination).
- (iii) It is a tool of risk management, since the risk of default in receivables is shifted.
- (iv) It is a case of structured finance since it involves tailor structuring of instruments to meet the risk return trade off profile of investors.
- (v) It involves ‘Trenching’ i.e., splitting portfolio of different receivable or loan or asset into several parts.
- (vi) It allows for homogeneity since under each tranche the securities are issued of homogenous nature and even meant for small investors who can afford to invest in small amounts.

Question 3(a) [8 Marks]:

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 (Rs.)	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.

Solution

Price of Nifty Futures: Rs. 9170

Contract Size: 50

Value of one Nifty Future Contract: Rs. 9170 X 50 = **Rs. 4,58,500.**

Initial Margin: Rs. 4,58,500 X 8% = Rs. 36,680

Maintenance Margin: Rs. 4,58,500 X 6% = Rs. 27,510

In Case of an Investor who has taken Long Position in Futures at Rs. 9170:

In Case of **Long Position**, Increase in Underlying is **Profit** and Fall in Underlying is **Loss**.

So, Marking to Market = (Value of the Underlying on the present day – Value of the underlying on the previous day) X 50

	Rs.				
	Opening Balance	Marking to Market	Balance	Variation Margin	Closing Balance
Day Zero				36,680	36,680
Day One	36,680	10,500 ¹	47,180	0	47,180
Day Two	47,180	7,000 ²	54,180	0	54,180
Day Three	54,180	(21,000) ³	33,180	0	33,180
Day Four	33,180	(7,000) ⁴	26,180	10,500	36,680
Day Five	36,680	9000 ⁵	45,680	0	45,680

1. (9380 – 9170) X 50
2. (9520 – 9380) X 50
3. (9100 – 9520) X 50
4. (8960 – 9100) X 50
5. (9140 – 8960) X 50

Note: On Day Four, the Balance after adjusting 'loss from marking to market' is less than 'maintenance margin'. Hence, additional amount (i.e., variation margin) is brought in. The variation margin must be the amount required to make the balance equal to 'initial margin.'. Hence, when the balance in the account is Rs. 26,180, the variation margin is (Rs. 36,680 – Rs. 26,180) Rs. 10,500.

Net Profit / Loss:

	Rs.
Total Deposits	47,180
Total Withdrawals and Closing Balance	<u>45,680</u>
LOSS	1,500

Alternatively,
Price at which Future Contract is entered: 9170
Position taken: Long
Price of the Future Contract on the last day: 9140
Loss per unit of underlying: Rs. 30
Loss per Contract: Rs. 30 X 50 = **Rs. 1,500**

In Case of an Investor who has taken Short Position in Futures at Rs. 9170:

In Case of **Short Position**, Increase in Underlying is **Loss** and Fall in Underlying is **Profit**.

So, Marking to Market = (Value of Underlying on the previous day – Value of underlying on the present day) X 50

	Rs.				
	Opening Balance	Marking to Market	Balance	Variation Margin	Closing Balance
Day Zero				36,680	36,680
Day One	36,680	(10,500) ¹	26,180	10,500	36,680
Day Two	36,680	(7,000) ²	29,680	0	29,680
Day Three	29,680	21,000 ³	50,680	0	50,680
Day Four	50,680	7,000 ⁴	57,680	0	57,680
Day Five	57,680	(9000) ⁵	48,680	0	48,680

1. $(9170 - 9380) \times 50$
2. $(9380 - 9520) \times 50$
3. $(9520 - 9100) \times 50$
4. $(9100 - 8960) \times 50$
5. $(8960 - 9140) \times 50$

Note: On Day Two, the Balance after adjusting 'loss from marking to market' is less than 'maintenance margin'. Hence, additional amount (i.e., variation margin) is brought in. The variation margin must be the amount required to make the balance equal to 'initial margin.'. Hence, when the balance in the account is Rs. 26,180, the variation margin is (Rs. 36,680 – Rs. 26,180) Rs. 10,500.

Net Profit / Loss:

	Rs.
Total Deposits	47,180
Total Withdrawals and Closing Balance	<u>48,680</u>
PROFIT	1,500

Alternatively,
Price at which Future Contract is entered: 9170
Position taken: Short
Price of the Future Contract on the last day: 9140
Profit per unit of underlying: Rs. 30
Profit per Contract: Rs. 30 X 50 = **Rs. 1,500**

Question 3(b) [8 Marks]:

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 Rs/USD and USD/EUR in inter-bank market are quoted as follows:

	Rs/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.

Solution

A Letter of Credit is a document sent from a bank or financial institution which guarantees that the seller will receive buyer's payment on time and for the full amount.

In this case, the exporter M/s Sky Products Ltd., has received a 60-day Letter of Credit from his customer's Bank for 500000 Euros. That is, the exporter has a guarantee of receiving

500000 Euros after 60 days. Sky Products Ltd., has submitted the bill drawn under 'Irrevocable Letter of Credit' for negotiation. This means that Sky Products Ltd., is negotiating for discounting the export bill due after 60 days.

Question (i):

The Exchange Rate at which Bank will discount the Bill is ascertained as follows:

Foreign Currency receivable: Euros.

Home currency of the exporter: INR

The Bill being 'Export Bill', the rate to be considered is 'Bid-Rate' (which is the rate for selling foreign currency)

So, the quotation required is: $(\text{INR} / \text{EUR})_{\text{Bid}}$

The problem does not give 'direct quote' for INR/EUR. Hence, it should be ascertained using 'Cross-currency rates.'

So, $(\text{INR}/\text{EUR})_{\text{Bid}} = (\text{INR}/\text{USD})_{\text{Bid}} \times (\text{USD}/\text{EUR})_{\text{Bid}}$

The Duration of the Bill is 60 days. Hence, 60-day forward rate must be considered.

However, there is a transition period of 20 days. That is, the amount is receivable by the Company from the customer after 20 days from the end of the bill duration. So, the duration for receiving the bill amount and consequently the period for discounting the bill is 80 days.

The problem provides 'swap points' for 2 months and 3 months. Hence, the forward rate for 80 days cannot be calculated. However, It is usual practice in reality that –

When the rate of foreign currency is increasing, the forward rate of the lower period must be considered, and

When the rate of foreign currency is falling, the forward rate of the higher period must be considered.

In this case, the swap points of both (INR/USD) and (USD/EUR) are ascending, which indicates that the rate of EUR is increasing. Hence, the forward rate for 2 months (i.e., 60 days) must be considered for the purpose of ascertaining the Exchange Rate for discounting the export bill.

So, the Quotation required is:

$(\text{INR}/\text{EUR})_{\text{Bid-2months}} = (\text{INR}/\text{USD})_{\text{Bid-2months}} \times (\text{USD}/\text{EUR})_{\text{Bid-2months}}$

	INR/USD	USD/EUR
Spot Rate	67.8000 – 67.8100	1.0775 – 1.8000
Add: 2-months Swap Points	00.2100 – 00.2200	0.0040 – 0.0045
	68.0100 – 68.0300	1.0815 – 1.8045

Notes:

1. The swap points are ascending. Hence, they are added to the Spot Rate for ascertaining the Forward Rate.
2. The Swap Points are given in paise and cents, while the Spot Rate is given in INR and USD. Hence, they the swap is converted into INR and USD for adjusting with the Spot.

So, $(\text{INR}/\text{EUR})_{\text{Bid-2months}} = 68.01 \times 1.0815 = \mathbf{73.5528}$

Exchange margins 0.1%

So, the Exchange Rate quoted to the Company = Rs. 73.5528 – (0.1% of 73.5528) = **73.4792**

Rounded off to nearest multiple of 0.0025, the Exchange Rate will be **73.4800 INR / EUR**

Question (iii):

The Bill amount is 500000 Euros.

However, the company desires to keep 50% of the bill amount under the Exchange Earners Foreign Currency Account. That is, the company wishes to have 50% of 500000 Euros (i.e., 2,50,000 Euros) in Foreign Currency without conversion to INR.

Hence, the discounting of the bill is only for the balance of 2,50,000 Euros.

So,

Amount of Loan (i.e., amount of bill to be discounted): 2,50,000 Euros

Rate at which discounting is to be done: 73.4800 INR / EUR

Period of discounting: 80 days

Rate of Interest applicable: 8% p.a.

Hence, Interest amount payable by the company to the Bank upfront =

$$2,50,000 \text{ Euros} \times \text{Rs. } 73.4800 / \text{EUR} \times 8\% \times 80/365 = \text{Rs. } 3,22,104$$

Question (ii):

Cash Inflow to the Company =

$$(2,50,000 \text{ Euros} \times \text{Rs. } 73.4800 / \text{EUR}) - \text{Rs. } 3,22,104$$

$$= \text{Rs. } 1,83,70,000 - \text{Rs. } 3,22,104 = \text{Rs. } 1,80,47,896$$

Question 3(c) [4 Marks]:

Following are the yields on Zero Coupon Bonds (ACB) having face value of Rs. 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:

- Calculate the implied one year forward rates
- Expected Yield to Maturity and prices of one year and two-year Zero-Coupon Bonds at the end of first year.

Solution

Question (i):

Implied Forward Rate for Year 2:

$$(1+r_1)(1+r_2) = (1+0.11)^2$$

$$\text{That is, } (1+0.10)(1+r_2) = 1.2321$$

$$\text{So, } r_2 = \frac{1.2321}{1.10} - 1 = 12.01\%$$

Implied Forward Rate for Year 3:

$$(1+r_1)(1+r_2)(1+r_3) = (1+0.12)^3$$

$$\text{That is, } (1+0.10)(1+0.1201)(1+r_3) = 1.404928$$

$$1.23211(1+r_3) = 1.404928$$

$$\text{So, } r_3 = \frac{1.404928}{1.23211} - 1 = \mathbf{14.03\%}$$

Question (ii):

Price of One-year Zero-Coupon Bond at the end of First Year and Expected YTM

The maturity period of zero-coupon Bond is 1 year.

At the time of maturity, the price (or value) of a zero-coupon Bond will be its face value.

Assuming Face Value of Rs. 1000, the price of 1-year Zero-Coupon Bond will be **Rs. 1000**

Since the price of the bond and the maturity value is the same, the YTM is **zero**.

Price of Two-Year Zero-Coupon Bond at the end of First Year and Expected YTM

At the end of 1st year, a two-year zero-coupon Bond will have a maturity period of 1 year.

Coupon rate of two-year bond is 11%. (assumed to be same as YTM)

Assuming face value of Rs. 1,000, the value at the Bond at the end of maturity period (i.e., 2 years) is Rs. 1,000.

Hence, the price (or value) of the Bond at the end of first year is-

$$\frac{\text{Rs. } 1,000}{(1.11)^1} = \mathbf{\text{Rs. } 900.90}$$

$$\text{Expected Yield to Maturity (YTM)} = \text{Rs. } 900.90(1+r)^1 = \text{Rs. } 1000$$

$$\text{So, } r = \frac{\text{Rs. } 1000}{\text{Rs. } 900.90} - 1 = \mathbf{11\%}$$

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Notes:

1. Each course contains well-researched and compiled study material. Problems have been compiled from the Study Material of the Institute, Revision Test Papers and Past Examination Question Papers.
2. Each Lecture session is for a duration of around 90 minutes.
3. Course Number 9 has all the above contents other than Recorded Lectures. Solutions for around 700 problems have been provided under this course.
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Question 4(a) [12 Marks]:

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 Sheet (Rs.)

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 Rs. 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
	27,00,000	18,00,000

Income Statement (Rs.)

	A Ltd., (Rs.)	B Ltd., (Rs.)
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:

	A Ltd.	B Ltd.
Dividend Pay-out Ratio	40%	60%
Market price per share	Rs. 40	Rs. 15

You are required to calculate:

- Earnings per share (EPS), Profit-Earning Ratio (PER), Return on Equity (ROE) and Book Value per Share (BVPS) for both the firms.
- Estimate future EPS growth rate for both the firms.
- If on acquisition of B Ltd., by A Ltd., intrinsic value of B Ltd., will be Rs. 20 per share, develop range of justifiable Exchange Ratio (ER) that can be offered by A Ltd., to shareholders of B Ltd.
- Post-merger EPS on an ER of 0.4:1. What will be the immediate accretion or dilution to EPS to the shareholders of both the firms?
- Post-merger MPS on the basis of ER of 0.4:1.

Solution

Question (i):

	A Ltd.	B Ltd.
Market Price per Share	Rs. 40.00	Rs. 15.00
Profits After Tax	Rs. 2,74,400	Rs. 1,19,000
Number of Equity Shares (Equity Capital / Face Value per Share)	100000	80000
Earnings per Share (Rs.)	Rs. 2.744	Rs. 1.4875
Price-Earnings Ratio (MPS / EPS)	14.58	10.08

	A Ltd.	B Ltd.
Equity Share Capital (Rs.)	1000000	800000
Retained Earnings	300000	0
Net Worth	1300000	800000
Profits After Tax (Rs.)	2,74,400	1,19,000
Return on Equity (PAT / Net-worth) X 100	21.11%	14.875%
Number of Equity Shares	100000	80000
Book Value per Share (Net Worth / N)	13.00	10.00
Earnings per Share (ROE X Book Value/Share)	2.744	1.4875

Question (ii):

	A Ltd.	B Ltd.
Growth Rate (g) = br		
Retained Earnings (b) = 1- Dividend Pay-out Ratio	0.60	0.40
Return on Equity (r)	21.11%	14.875%
So, Growth Rate is	12.67%	5.95%

Question (iii):

Exchange Ratio = Value per Share of S Ltd., / Value per Share of R Ltd.,

On the basis of current market prices,
Exchange Ratio = Rs. 15 / Rs. 40 = **0.375:1**

On the basis of estimated intrinsic value of S Ltd., Shares:
Exchange Ratio = Rs. 20 / Rs. 40 = **0.50:1**

Question (iv):

All the performance parameters are better in case of the acquiring Company A Ltd. For acquiring company, a lower exchange ratio is beneficial. Since, the acquiring company is in a better position for negotiation due to its superior performance, the exchange ratio can be expected to be lower of the above two.

Question (v):

Exchange Ratio = 0.4:1 (given)

Post-merger EPS

$$EPS_{AT} = E_{AT} / N_{AT}$$

In this case,

$$E_{AT} = \text{Rs. } 2,74,400 + \text{Rs. } 1,19,000 = \text{Rs. } 3,93,400$$

$$N_{AT} = N_A + (ER \times N_T) = 1,00,000 + (0.4 \times 80,000) = 1,32,000 \text{ Shares}$$

$$\text{So, } EPS_{AT} = \text{Rs. } 3,93,400 / 1,32,000 \text{ Shares} = \text{Rs. } 2.98$$

Impact on EPS:

	A Ltd.	B Ltd.
Pre-merger EPS per share of A Ltd.	2.744	3.719*
Post-merger EPS	2.980	2.980
Impact on EPS	Increase by Rs. 0.236	Decrease by Rs. 0.739

* Equivalent EPS for B Ltd. = Pre-merger EPS / Exchange Ratio
= Rs. 1.4875 / 0.40
= Rs. 3.719

Question (vi):

$$MPS_{AT} = EPS_{AT} \times PE_{AT}$$

When Exchange Ratio is 0.4:1, Post-merger EPS is Rs. 2.980
Post-merger PE Ratio is assumed to be same as pre-merger PE Ratio of acquiring company, which is 14.58

So, $MPS_{AT} = Rs. 2.98 \times 14.58 = \text{Rs. 43.45}$

Question 4(b) [4 Marks]:

Shyam buys 10000 shares of X Ltd., @ Rs. 25 per share and obtains a complete hedge of shorting 400 Nifty at Rs. 1100 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?

Solution

Asset	Position Taken	Change in the Price of Asset / Underlying	Outcome
Shares of X Ltd.,	Long	Fall	Loss
NIFTY Futures	Short	Fall	Profit

Loss on Shares: Rs. 25 X 4% X 10000 Units = (-) Rs. 10,000.
Profit on Futures: Rs. 1100 X 2.5% X 400 Units = Rs. 11,000.

Net Profit: Rs. 1,000

Question 4(c) [4 Marks]:

Venture Capital Funding passes through different stages. Discuss.

Solution

Following are the various stages of funding by Venture Capital:

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 products, but not yet turning in a profit.
5. **Third-Round:** Also called Mezzanine Financing. This is expansion money only for a newly profitable company.
6. **Fourth-Round:** Also called Bridge Financing. It is intended to finance the “going Public” Process.

Question 5(a) [10 Marks]:

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 Rs.)	B (Market Price per share in Rs.)
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.

Solution

Year	A (Market price per share in Rs.)	B (Market Price per share in Rs.)							
			Returns on Stock A (X)	Returns on Stock B (Y)	x (X- $\bar{X}$)	y (Y- $\bar{Y}$)	x ²	y ²	xy
2013	19.6	8.7							
2014	18.75	12.8	-4.34	47.13	-18.33	30.94	335.98	957.10	-567.07
2015	33.42	16.2	78.24	26.56	64.25	10.37	4127.67	107.60	666.44
2016	42.64	18.25	27.59	12.65	13.60	-3.54	184.83	12.50	-48.06
2017	43.25	15.6	1.43	-14.52	-12.56	-30.71	157.82	943.10	385.79
2018	44.6	13.25	3.12	-15.06	-10.87	-31.25	118.19	976.78	339.78
2019	34.75	18.6	-22.09	40.38	-36.08	24.19	1301.64	585.06	-872.66
			83.96	97.14			6226.13	3582.14	-95.78

$$\bar{X} = \frac{\sum X}{n} = \frac{83.96}{6} = 13.99\%$$

$$\bar{Y} = \frac{\sum Y}{n} = \frac{97.14}{6} = 16.19\%$$

$$\text{VAR}_x = \frac{\sum x^2}{n-1} = \frac{6226.13}{6-1} = 1245.23\%^2$$

$$\text{VAR}_y = \frac{\sum y^2}{n-1} = \frac{3582.14}{6-1} = 716.43\%^2$$

$$\sigma_x = \sqrt{\frac{\sum x^2}{n-1}} = \sqrt{1245.23} = 35.29\%$$

$$\sigma_y = \sqrt{\frac{\sum y^2}{n-1}} = \sqrt{716.43} = 26.77\%$$

$$\text{COV}_{xy} = \frac{\sum xy}{n-1} = \frac{-95.78}{6-1} = -19.16\%^2$$

Question (i):

	<u>A</u>	<u>B</u>
Expected Return	13.99%	16.19%
Standard Deviation	35.29%	26.77%
Co-efficient of Variation	252.25%	165.35%

Question (ii):

$$\text{Portfolio Return} = \sum W_i \bar{R}_i = (0.6 \times 13.99\%) + (0.4 \times 16.19\%) = \mathbf{14.87\%}$$

$$\begin{aligned} \text{Portfolio Variance } (\sigma_p^2) &= \sum W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{COV}_{AB} \\ &= (0.6^2 \times 35.29^2) + (0.4^2 \times 26.77^2) + (2 \times 0.6 \times 0.4 \times -19.16) \\ &= 448.34 + 114.66 - 9.20 = \mathbf{553.80} \end{aligned}$$

$$\text{Portfolio Standard Deviation } (\sigma_p) = \sqrt{\text{Portfolio Variance}} = \sqrt{553.80} = \mathbf{23.53\%}$$

	<u>PORTFOLIO</u>
Expected Return	14.87%
Standard Deviation	23.53%
Co-efficient of Variation	158.24%

Question (iii):

It is risky to invest in either of the securities or in the portfolio since the Co-efficient of Variation is high in all the cases.

However, on a relative basis, it is advisable to invest in Portfolio of A and B in the proportion of 0.60 and 0.40, than investing in either Stock A or Stock B.

For reducing the portfolio risk, the ideal combination of A and B should be-

$$W_A = \frac{\sigma_B^2 - \text{COVAB}}{\sigma_A^2 + \sigma_B^2 - 2\text{COVAB}}$$

$$\sigma_A^2 = 1245.23$$

$$\sigma_B^2 = 716.43$$

$$\text{COV}_{AB} = -19.16$$

So,

$$W_A = \frac{714.43 - (-19.16)}{1245.23 + 714.43 - 2(-19.16)} = \frac{733.59}{1997.98} = 0.3672 = \mathbf{36.72\%}$$

$$W_B = 1 - W_A = 1 - 0.3672 = 0.6328 = \mathbf{63.28\%}$$

Question 5(b) [6 Marks]:

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	RS.	ASSETS	RS.
Equity Capital (Rs. 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 liabilities	3,20,000	Plant and equipment	16,50,000
	19,20,000		19,20,000

Shareholders of Poly Ltd., will get one share of Roly Ltd., at current market price of Rs 20 for every two shares. External liabilities are expected to be settled at a discount of Rs. 20,000. Sundry debtors and inventories are expected to realize Rs. 2,00,000. Poly Ltd., will run as an independent cash unit. Cash Flow After Tax is expected to be Rs. 4,00,000 per annum for next 6 years. Assume the disposal value of the plant after 6 years will be Rs. 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.

Solution

Value created on account of Merger =

(Rs. 4,00,000 X PV of Annuity of Re. 1 @ 14% for 6 years) + (Rs. 1,50,000 X PV of Re. 1 at the end of 6th Year, @ 14%)

So, Value created = (Rs. 4,00,000 X 3.888) + (Rs. 1,50,000 X 0.456) = **Rs. 16,23,600**

Cost of Acquisition:

	Rs.	Rs.
<u>Payment to Equity Shareholders of Poly Ltd.,</u> (50000 Shares of Smart Ltd., @ Rs. 20 each)		10,00,000
<u>Payment to Debenture Holders of Poly Ltd.,</u> (assumed to be settled completely at book value, in the absence of information)		3,00,000
<u>Payment towards External Liabilities of Poly Ltd.,</u>		<u>3,00,000</u>
		16,00,000
Less:		
Cash Balance of Poly Ltd.,	20,000	
Amount realisable on Debtors and Inventory	<u>2,00,000</u>	<u>2,20,000</u>
Cost of Acquisition		<u>13,80,000</u>

Calculation of Net Present Value

	Rs.
Value from Acquisition	16,23,600
Cost of Acquisition	<u>13,80,000</u>
Net Present Value	2,43,600

The NPV is positive. Hence, the merger deal is feasible for Roly Ltd.,

Question 5(c) [4 Marks]:

Non-bank Financial sources are becoming popular to finance start-up. Discuss.

Solution

Financial assistance in India for Start-ups, particularly, MSME units is available from a variety of institutions. The important ones are:

- Commercial / Regional / Rural / Co-operative Banks.
- SIDBI: Small Industries Development Bank of India (refinance and direct lending)
- SFCs / SIDCs: State Financial Corporations / State Industrial Development Corporations

Long and medium term loans are provided by SFCs, SIDBI, and SIDCs. Banks also provide term loans. This type of financing is needed to fund purchase of land, construction of factory building / shed and for purchase of machinery and equipment. The short-term loans are required for working capital requirements, which fund the purchase of raw materials and consumables, payment of wages and other immediate manufacturing and administrative expenses. Such loans are generally available from commercial banks. The commercial banks also sanction composite loan comprising of working capital and term loan up to a loan limit of Rs. 1 crore.

For loans from financial institutions and commercial banks a formal application needs to be made. The details of documentation that need to be provided with the loan application are indicated below:

- Balance Sheet and Income Statement for last three consecutive years of firms owned by promoters.
- Income Tax Assessment Certificates of Partners / Directors.
- Proof of possession of Land / Building.
- Architect's estimate for construction cost.
- Partnership deed / Memorandum and Articles of Association of Company.
- Project Report
- Budgetary Quotations of Plant and Machinery.

A sanction or rejection letter is issued by bank after its assessment of the application. After receiving a sanction letter, applicants need to indicate in writing their acceptance of terms and conditions laid down by Financial Institutions / Banks.

Subsequently, loan is disbursed according to the phased implementation of the project. In today's environment there are other choices apart from commercial banks and Government owned financial institutions. These options include venture capital funds and non-government finance companies.

Question 6(a) [8 Marks]:

The Balance Sheet of M/s Sundry Ltd., as on 31.03.2020 is follows:

		(Rs. in Lakhs)	
LIABILITIES	RS.	ASSETS	RS.
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		
	1400		1400

Sales for the year was Rs. 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

Solution

Last year Sales: Rs. 600 Lakhs

Existing Fixed Assets: Rs. 600 Lakhs

Existing Working Capital:

	Rs. in Lakhs
<u>Current Assets:</u>	
Inventory	500
Receivables	240
Cash	60
	800

Less: Current Liabilities (Payables and Provisions)	200
	600

Expected Growth in Sales: 20%

Sales for current year: Rs. 600 Lakhs + (20% of Rs. 600 Lakhs) = Rs. 720 Lakhs

Investment required in Fixed Assets: Rs. 600 Lakhs + (20% of Rs. 600 Lakhs) = Rs. 720 Lakhs

Investment required in Working Capital: Rs. 600 Lakhs + (20% of Rs. 600 Lakhs) = Rs. 720 Lakhs

Total Assets when sales grow by 20% = Rs. 720 Lakhs + Rs. 720 Lakhs = Rs. 1440 Lakhs

Total Assets at present = Rs. 600 Lakhs + Rs. 600 Lakhs = Rs. 1200 Lakhs

Additional Investment or Funding required: **Rs. 240 Lakhs** [Rs. 1440 Lakhs – Rs. 1200 Lakhs]

[Note: It is assumed that 'Assets' will grow in proportionate with 'growth in sales']

Question (i):

Additional Funds required: Rs. 240 Lakhs

Retained Earnings for the year:

Estimated Sales	Rs. 720 Lakhs
Net Profit Margin	4%
Amount of Net Profits [Sales X Net Profit Margin]	Rs. 28.80 Lakhs
Dividend pay-out Ratio	50%
Retention Ratio [1-Dividend Pay-out Ratio]	50%
Retained Earnings [Net Profits X Retention Ratio]	Rs. 14.40 Lakhs

Amount of External Fund Requirement = Funds Required – Retained Earnings
= Rs. 240 Lakhs – Rs. 14.40 Lakhs = **Rs. 225.60 Lakhs**

Question (ii):

Ratio of Fixed Assets to Long-term Loan should be 1.5

That is,

$$\frac{\text{Fixed Assets}}{\text{Long-term Loans}} = 1.5$$

$$\text{So, } \frac{\text{Rs. 720 Lakhs}}{\text{Long-term Loans}} = 1.5$$

$$\text{Therefore, Long-term Loans} = \frac{\text{Rs. 720 Lakhs}}{1.5} = \text{Rs. 480 Lakhs}$$

Long-term Loans at present: Rs. 400 Lakhs

Hence, additional funds to be mobilised through Long-term Loans is **Rs. 80 Lakhs**.

'Sales' to 'Short-term Loans and Payables and Provisions' must be in the ratio of 4:3

That is, $\frac{\text{Sales}}{\text{Short-term Loans} + \text{Payables and Provisions}} = \frac{4}{3}$

Sales are expected to be Rs. 720 Lakhs

Hence, Short-term Loans + Payables and Provisions = Sales $\times \frac{3}{4}$ = Rs. 720 Lakhs $\times \frac{3}{4}$
= **Rs. 540 Lakhs**

Payables and Provisions after sales growth will be: Rs. 200 Lakhs + (20% of Rs. 200 Lakhs)
= Rs. 240 Lakhs

So, Short-term Loans should be = Rs. 540 Lakhs – Rs. 240 Lakhs = Rs. 300 Lakhs

Short-term Loans at present: Rs. 300 Lakhs

Therefore, no further funding must be made through short-term Loans.

Total External Funding required is Rs. 225.60 Lakhs

Additional Long-term Loans: Rs. 80 Lakhs

So, Amount to be raised through issue of Equity = Rs. 225.60 Lakhs – Rs. 80 Lakhs
= **Rs. 145.50 Lakhs.**

Verification:

Debt-Equity Ratio should not exceed 1.5

That is,

$$\frac{\text{Long-term Debt}}{\text{Equity}} \leq 1.5$$

Long-term Debt = **Rs. 480 Lakhs**

Equity = Existing Share Capital (Rs. 300 Lakhs) + Existing Reserves (Rs. 200 Lakhs) + Retained Earnings of the current year (Rs. 14.40 Lakhs) + Additional Equity Capital (Rs. 145.60 Lakhs) = **Rs. 660 Lakhs**

$$\text{So, } \frac{\text{Long-term Debt}}{\text{Equity}} = \frac{\text{Rs. 480 Lakhs}}{\text{Rs. 660 Lakhs}} = 0.73$$

The Debt-Equity Ratio has not exceeded 1.5.

Question 6(b) [8 Marks]:

XYZ has taken a six-month loan from its foreign collaborator for USD 2 million. 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:

- Calculate the Rupee requirements if forward cover is taken.
- Advise the company on the forward cover.

What will be your opinion if spot rate of INR/USD is 68.4275?

Solution

Question (i):

Loan Amount: 20,00,000 USD

Interest payable on maturity @ LIBOR + 1%

Loan period: 6 months

6-month LIBOR for USD: 2%

So, Rate at which interest is payable on the loan = 2% + 1% = 3% p.a.

Amount repayable after 6 months = 20,00,000USD + (20,00,000USD X 3% X 6/12)
= **20,30,000USD**

If Forward Cover is entered, Rupee requirement for payment of 20,30,000USD after 6 months will be-

20,30,000USD X Rs. 68.4575 per USD = **Rs. 13,89,68,725**

Question (ii):

The quotation is given for USD in INR.

So, INR is home-currency and USD is foreign currency.

The interest rates are higher in Home Country.

According to IRP Theory, if R_h is higher than R_f , the foreign currency can be expected to be at premium.

So, USD can be expected to be at premium after 6-months. Hence, the Rate of USD after 6 months will be higher than the spot-rate, which is a loss to the importer. Hence, it is **advisable to go for forward cover**.

If Spot-rate of INR/USD is Rs. 68.4275

This has to be read as 'Future Spot Rate' (i.e., Expected Spot-rate of USD after 6 months).

Since, the rate of USD is expected to be lower than the Spot Rate (i.e., since the rate of USD is expected to fall), it is **not advisable to take forward cover**.

Question 6(c) [4 Marks] – Option Question 1:

Participants are required for the success of the securitisation process. Discuss their roles.

Answer

Broadly, the participants in the process of securitisation can be classified into two categories viz., Primary Participants and Secondary Participants.

Primary Participants

Primary participants are the main parties to the process of securitisation. This category includes:

1. **Originator:** Originator is the entity which sells the assets lying in its books and receives the funds generated through the sale of such assets. Originator is also called as 'securitizer.'
2. **Special Purpose Vehicle:** Special Purpose Vehicle (SPV) is an entity created for the purpose of executing the deal. The Originator transfers both legal and beneficial interest of the assets to SPV which makes upfront payment to the Originator. It further issues Securities which are called 'Asset Based Securities' or 'Mortgage Based Securities.' SPV is created only for the purpose of securitisation and it could be in the form of a firm, company, a society or a trust.
3. **Investors:** Investors are the buyers of securitised papers or securities. The investors in Asset-backed Securities may be individuals, institutions, mutual fund companies, insurance companies, financial institutions etc.

Secondary Participants

The other parties involved in the process of securitisation are:

1. **Obligors:** Obligors are Debtors of the Originator Company. They are the main source for the securitisation process. The Debt due from these Obligors are transferred to SPV by the Originator which in turn issues securities to the public. The success of the securitisation process depends on the strength of the credit standing of the Obligors.
2. **Rating Agency:** Credit Rating Agencies play a vital role in the process of securitisation. The rating of the assets by these agencies helps an entity decide regarding the possibility or feasibility of initiating securitisation process.
3. **Receiving and Paying Agent:** These are agents who collect the dues from Obligors and transfer the collections to the SPV. They are also called Servicers or Administrators. They follow up with defaulting borrower and take all action, including legal action, for recovery of the dues.
4. **Trustees:** For overseeing the entire process of securitisation and particularly for protection of the interest of investors, Trustees will be appointed. They ensure that all the parties to the deal perform in the true spirit of the agreement.
5. **Structurer:** These are investment bankers who guide and implement the entire process of securitisation. They bring together all the parties of Securitisation and ensure that the deal meets all legal, regulatory, accounting and tax law requirements.

Question 6(c) [4 Marks] – Option Question 2:

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

Answer

'Risk' in the context of 'market' refers to the risk associated with stocks and securities. 'Risk' for a 'stock' refers to the volatility (i.e., fluctuations) in the prices leading to attractive gains or loss of investment.

The risk (i.e., volatility) of a stock is on account of various reasons, which are broadly classified into two categories viz.,

1. Systematic Risk.
2. Unsystematic Risk.

Systematic Risk refers to the volatility in the stock price on account of volatility in the market. Volatility in the market, usually happens, on account of-

- (a) Changes in Interest Rates which lead to varying expectations of the investors (this is called Interest Rate Risk)
- (b) Changes in supply and demand (this is called Purchasing Power Risk), and
- (c) Changes in market trend (this is called Market Risk).

Unsystematic Risk refers to the volatility in the stock price on account of factors associated with the company or for unknown reasons. This risk is also called 'residual risk' since this risk is on account of all other reasons other than 'volatility in the market.' When the volatility in the stock prices is due to factors relating to the company, then the risk could be 'business risk' (i.e., risk on account of changes in business model and process) or 'financial risk' (i.e., risk on account of changes in capital structure of the company).

