EPS (PAT/No. of Shares) (₹ 9.60 crores /150 Lakh) = ₹ 6.40 per share

P/E Ratio (₹160/ ₹6.40) = 25

(ii) No. of Bonus Shares to be issued:

Promoters holding 84%, = 126 Lakh shares

Shares remains the same, but holding % to be taken as 75%

Hence Total shares $= \frac{126 \text{ Lakh}}{75\%}$ = 168 Lakh

Shares of Minority = 168 Lakh – 126 Lakh = 42 Lakh

Bonus 18 Lakh for 24 Lakh / 3 bonus for 4 held / 0.75 shares for 1 share

(iii) Market price before & after Bonus:

Before Bonus = ₹160 per share

After Bonus

New EPS $\frac{₹ 9.60 \text{ crores}}{168 \text{ Lakh}}$ = ₹ 5.71

New Market Price (25 x ₹ 5.71) = ₹ 142.75

(iv) Free Float Capitalization is

₹ 142.75 x 42 lacs = ₹ 59.9550 crores

(c) Total Premium Paid (₹ 42 + ₹ 8) x 150 = ₹ 7,500

(i) Net Profit/ Loss under different scenarios:

- Share price remains unchanged at ₹ 550
  - ❖ None of the options will be exercised and whatever premium paid i.e. ₹ 7,500 will be net loss.
- Share price declines to ₹ 380
  - ❖ Call Option is Lapsed and Put Option is exercised. The Net Profit will be as follows:

Gain on Per Put Option (₹ 480 - ₹ 380)	₹ 100
Lot Size	150
Total Gain	₹ 15,000

Less: Premium Paid	₹ 7,500
Net Profit	₹ 7,500

- Share price appreciates to ₹ 680
  - ❖ Put Option is Lapsed and Call Option is exercised. The Net Profit will be as follows:

Gain on Per Call Option (₹ 680 - ₹ 620)	₹ 60
Lot Size	150
Total Gain	₹ 9,000
Less: Premium Paid	₹ 7,500
Net Profit	₹ 1,500

(ii) Break-even Points

Upper: ₹ 620 + ₹ 50 = ₹ 670

Lower: ₹ 480 - ₹ 50 = ₹ 430

Question 2

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

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

(2) 60 days interest free credit. However, in case of a further delay up to 30 days, interest at the rate of 8% p.a. will be charged for additional days after 60 days. XYZ Ltd. has ₹25 Lakh available and for remaining it has an offer from bank for a loan upto 90 days @ 9.0% p.a.

The quotes for foreign exchange are as follows:

Spot Rate INR/ USS (buying) ₹66.98

60 days Forward Rate INR/ US$ (buying) ₹67.16

90 days Forward Rate INR/ US$ (buying) ₹68.03

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

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

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

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

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

Note:

- *Assume year has 360 days.*
- *Ignore Taxation.*
- *Cashflows ₹ in Crore.*
- *Round off all intermediate and final calculations to four decimal places.* ***(6 Marks)***

(b) MNC Limited company's financial statements for FY 2024-25 are provided:

Income Statement	***(₹ in Cr.)***
Sales revenues	*7500*
Costs and expenses	*7300*
Income before taxes	*200*
Taxes (30%)	*60*
Net income	*140*

MNC Limited's Balance Sheet as at 31st March, 2025

Liabilities	***(₹ in Cr.)***	***Assets***	***(₹ in Cr.)***
Equity	*2000*	*Net Fixed Assets*	*4000*
Long term Debt	*2500*	*Current Assets*	*2000*
Current Liabilities	*1500*		
	6000		***6000***

Additional Information:

(i) The company expects a 40% sales growth next financial year.

(ii) The company will have a 25% dividend payout ratio next year.

(iii) All costs, current assets and current liabilities are expected to increase with sales.

(iv) Except retained earnings no new Equity is to be raised.

Required:

Compute External Funding Requirement through raising Long-term Debt:

(1) If the company is operating at 65% capacity usage for fixed assets.

(2) If the company is operating at 95% capacity usage for fixed assets.

(4 Marks)

(c) Differentiate how real options are different from financial options on the basis of following four points:

(i) Underlying Asset

(ii) Pay-off

(iii) Exercise period

(iv) Approach ***(4 Marks)***

Answer

(a) (i) Pay immediately to avail the discount

Spot Rate	₹ 66.98
Payment Due	USD 79,20,000
	(₹ Crore)
Outflow in Rupees (USD 79,20,000 × ₹ 66.98)	53.0482
Less: Cash Available (a)	0.2500
Balance amount to be borrowed from bank	52.7982
Add: Interest on loan for 90 days@9% p.a.	1.1880
Add: Opportunity Cost of Surplus Cash	0.0025
(b)	53.9887
Total Outflow in ₹ Crore (a+b)	54.2387

OR

If Opportunity Cost of Surplus Cash is not considered then, the Total Outflow will be 54.2387 – 0.0025 = ₹ 54.2362 Crore

(ii) Pay the supplier in 60 days

If the payment is made to supplier in 60 days the applicable forward rate for 1 USD	₹ 67.16
Payment Due	USD 8,000,000
	(₹ Crore)
Outflow in Rupees (USD 8000000 × ₹ 67.16)	53.7280
Less: Cash Available (a)	0.2500
Interest on the same for 60 days @4% p.a.	0.0017
Balance amount to be borrowed from bank	53.4763
Add: Interest on loan for 30 days @9% p.a.	0.4011
Loan Outflow in ₹ Crore (b)	53.8774
Total Outflow in ₹ Crore (a) + (b)	54.1274

(iii) Availing supplier's offer of 90 days credit

Amount Payable	USD 8,000,000
Add: Interest on credit period for 30 days@8% p.a.	USD 53,333
Total Outflow in USD	USD 8,053,333
Applicable forward rate for 1 USD	₹ 68.03
Outflow in ₹ Crore (USD 8,053,333 ×₹ 68.03)	54.7868
Less: Interest Earned on Cash for 90 Days @ 4% in ₹ Crore	0.0025
Total Outflow in ₹ Crore	54.7843

Alternative (ii) is better as it entails lower cash outflow.

(b) (i) External Funding Requirement in case of 65% capacity utilization

With only 65% Utilization, growth by 40% can be achieved without any corresponding increase in Fixed Assets (65*1.4 times = 91%)

External Funding Requirement through Long Term Debt	**(₹ in Crore)**
Expected Sales Revenue (7500 x 1.4)	10500
Costs and Expenses (7300 x 1.4)	10220

Income before taxes	280
Taxes (30%)	84
Net Income	196
Dividend Payout@25% of ₹ 196	49
Retained Earnings/ Internal Sources of Funds	147
Additional Funds Required (2000 – 1500)*0.4	200
Balance to be met from Long Term Debt	53

(ii) External Funding Requirement in case of 95% capacity utilization

With only 95% Utilization, growth by 40% can be achieved by corresponding increase in Fixed Assets of ₹ 1320 Crore (95%*1.4 times = 1.33 times of existing Fixed Assets of ₹ 4000 Crore). Projected Fixed Assets increase to ₹ 5320 Crore.

External Funding Requirement through Long Term Debt	**(₹ in Crore)**
Expected Sales Revenue (7500 x 1.4)	10500
Costs and Expenses (7300 x 1.4)	10220
Income before taxes	280
Taxes (30%)	84
Net Income	196
Dividend Payout@25% of ₹ 196	49
Retained Earnings/ Internal Sources of Funds	147
Additional Funds Required (8120 – 2100 – 2000 – 2500)	1520
Balance to be met from Long Term Debt	1373

Alternative Solution

(i) Computation of EFR if company is operating at 65% capacity usage of Fixed Assets.

$$\text{Full Capacity Sales} = \frac{\text{Actual Sales}}{\text{\% of capacity at which fixed assets were operated}}$$

$$= \frac{₹\ 7500\,\text{crore}}{0.65}$$

= ₹ 11538.4615 Crore

Actual Fixed Asset Ratio should be = $\frac{₹\ 4000\ Crore}{₹11538.4615\ Crore}$ = 0.3467

Revised Fixed Assets = ₹ 10,500 x 0.3467 = ₹ 3640.35 crore

Proforma Income Statement

	₹ in Crore
Sales Revenue	10,500
Less: Cost and Expenses	10,220
Income Before Tax	280
Tax @ 30%	84
Profit after Tax	196
Less: Dividend Paid	49
Retained Earning	147

Proforma Balance Sheet

	₹ in Crore		₹ in Crore
Equity	2000.00	Fixed Assets	3640.35
Retained Earnings	147.00	Current Assets	2800.00
Long Term Debt (Bal. Figure)	2193.35		
Current Liabilities	2100.00		
	6440.35		6440.35

EFR = ₹ 2193.35 Crore - ₹ 2500 Crore = - ₹ 306.65 Crore

Alternatively, it can also be computed using the Formula as follows:

$$= \left(\frac{F_0}{S_0} \times \text{Revised Sales} - F_0\right) + \left(\frac{CA}{S} - \frac{CL}{S}\right) \times \Delta S - \text{Net Profit } (1 - d)$$

$$= (3640.35 - 4000) + \left(\frac{2000}{7500} - \frac{1500}{7500}\right) \times 3000 - (196 - 49)$$

= - 359.65 + 200 – 147 = - ₹ 306.65 Crore

(ii) Computation of EFR if company is operating at 95% capacity usage of Fixed Assets.

$$\text{Full Capacity Sales} = \frac{\text{Actual Sales}}{\text{\% of capacity at which fixed assets were operated}}$$

$$= \frac{₹\,7500\,\text{crore}}{0.95} = ₹\ 7894.7368\ \text{Crore}$$

$$\text{Actual Fixed Asset Ratio should be} = \frac{₹\,4000\,\text{Crore}}{₹\,7894.7368\,\text{Crore}} = 0.5067$$

Revised Fixed Assets = ₹ 10,500 x 0.5067 = ₹ 5320.35 crore

Proforma Income Statement

	₹ in Crore
Sales Revenue	10,500
Less: Cost and Expenses	10,220
Income Before Tax	280
Tax @ 30%	84
Profit after Tax	196
Less: Dividend Paid	49
Retained Earning	147

Proforma Balance Sheet

	₹ in Crore		₹ in Crore
Equity	2000.00	Fixed Assets	5320.35
Retained Earnings	147.00	Current Assets	2800.00
Long Term Debt (Bal. Figure)	3873.35		
Current Liabilities	2100.00		
	8120.35		8120.35

EFR = ₹ 3873.35 Crore - ₹ 2500 Crore = ₹ 1373.35 Crore

Alternatively, it can also be computed using the Formula as follows:

$$= \left(\frac{F_0}{S_0} \times \text{Revised Sales} - F_0\right) + \left(\frac{CA}{S} - \frac{CL}{S}\right) \times \Delta S - \text{Net Profit}\,(1 - d)$$

$$= (5320.35 - 4000) + \left(\frac{2000}{7500} - \frac{1500}{7500}\right) \times 3000 - (196 - 49)$$

$$= 1320.35 + 200 - 147 = ₹\ 1373.35 \text{ Core}$$

(c)

Basis	Financial Options	Real Options
Underlying	Have underlying assets that are normally traded in the market i.e. shares, stocks, bonds, commodity etc.	Have underlying the projects that are not traded in the market.
Pay-off	In most of the cases it is specified in the contracts and hence is fixed.	It is estimated from the project cash flows and hence can be varied.
Exercise Period	Mostly the period of these options is short and can go maximum upto 1 year.	The period of these options mostly starts from the end of 1st year and higher than the Financial Options.
Approach	Since these options are normally traded in the market they are "Priced".	Since these options are used to make decisions, they are "Valued".

Question 3

(a) A speculator purchases BFL Ltd. May Futures (lot of 125 shares) at 7750 and chooses to Write BFL 7790 May call option with a premium of ₹ 30 (lot of 125 shares). As on May 18, spot prices rise and so the futures price and call premium. Futures price rise to 7780. Call premium also rises to ₹ 36. Brokerage for the transaction is 0.02% for the transaction value of futures and strike price net of call premium for options.

You are required to calculate:

(i) Profit/Loss on Futures net of transaction costs.

(ii) Profit/Loss on options net of transaction costs.

(iii) Overall profit from both the positions net of costs.

(iv) Total Brokerage cost. ***(6 Marks)***

(b) Following are the direct quotes available in the international market:

GBP1 = EURO 1.2950/65 (Direct rate)

GBP1 = USD 1.6025/6000

EURO1 = USD 1.2375/9000

You are required to:

(i) Calculate Bid & Ask Cross Rates for Euro per Pound (Euro/Pound)

(ii) Prove that arbitrage gains are not possible if-

(a) You buy Pounds against Euro under direct route and sell through cross rate route.

(b) You sell Pounds against Euro under direct route and buy through cross rate route. ***(4 Marks)***

(c) A large Indian multinational corporation, "Global Ventures Ltd.", is planning to set up a manufacturing plant in a developing foreign country. As part of its due diligence, the board is concerned about the potential impact of Political Risk on its investment.

In the context of international operations, you are required to:

(i) Identify four specific actions by a host country's government that can signal the presence of Political Risk.

(ii) Recommend practical techniques to mitigate political risk exposure in foreign operations. ***(4 Marks)***

Answer

(a) Working Notes:

(1) Brokerage Payable on Initial Position

On Futures (7750 x 125 x 0.02%)	₹ 193.75
On Options (₹ 7790 – ₹ 30) x 0.02% x 125	₹ 194.00
Total	₹ 387.75

(2) Brokerage Payable on Closing Position

On Futures (7780 x 125 x 0.02%)	₹ 194.50
On Options (₹ 7790 – ₹ 36) x 0.02% x 125	₹ 193.85
Total	₹ 388.35

(i) Profit/ Loss on Futures (₹)

Selling Futures	7,780
Buying Futures	7,750
Profit per share	30
Total Profit 125 x ₹ 30	3,750.00
Less: Brokerage on Initial Position	193.75
Brokerage on Closing Position	194.50
Net Profit	3,361.75

(ii) Profit/ Loss on Options (₹)

Loss on writing Call Option (₹ 36 - ₹ 30)	6
Loss on Call Option (125 x ₹ 6)	750.00
Add: Brokerage Paid on Initial Position	194.00
Brokerage on Closing Position	193.85
Net Loss	1,137.85

(iii) Overall profit: (₹)

Profit/ Loss on Futures (Net Profit)	3,361.75
Less: Profit/Loss on Options (Net Loss)	1,137.85
Overall Profit	2,223.90

(iv) Total Broking Cost (₹)

On Initial Position	387.75
On Options	388.35
Total	776.10

(b) (i) Ask Cross Rate for Euro Per Pound

$$= \frac{USD/GBP_{Ask}}{USD/Euro_{Bid}} = \frac{1.6025}{1.2375}$$

= Euro 1.2950/ GBP

Bid Cross Rate for Euro Per Pound

$$= \frac{USD/GBP_{Bid}}{USD/Euro_{Ask}} = \frac{1.6000}{1.9000}$$

= Euro 0.8421/ GBP

Final Quote: GBP 1 = EUR 0.8421 / 1.2950

(ii) Calculation of Arbitrage Gain/ Loss

(1)

Buying Pound against Euro under direct route	Euro 1.2965
Selling Pound against Euro through Cross Route	Euro 0.8421
Loss per Pound	Euro 0.4544

(2)

Buying Pound against Euro through Cross Route	Euro 1.2950
Selling Pound against Euro under direct route	Euro 1.2950
Loss per Pound	Nil

Arbitrage is not possible – Proof

(1) If you want to buy Pounds against Euro, under the direct route, you can acquire Pound at the quoting bank's selling rate of Euro 1.2965/Pound. If you sell Pounds under cross rate route, you can sell Pound at the Cross-rate Bid price calculated in (i) above i.e. 08421/ Pound resulting in a loss of 0.4544 Euros. Hence arbitrage is not possible.

(2) If you want to sell Pounds against Euro, under the direct route, you can sell Pounds at the quoting bank's buying rate of Euro 1.2950/ Pound. If you buy Pounds under cross rate route, you can get Pounds at the Cross rate Ask price calculated in (i) above i.e.

1.2950/ Pound resulting in no profit no loss hence arbitrage is not possible.

(c) (i) From the following actions by the Governments of the host country this risk can be identified:

1. Insistence on resident investors or labour.
2. Restriction on conversion of currency.
3. Expropriation of foreign assets by the local govt.
4. Price fixation of the products.

(ii) Following techniques can be used to mitigate this risk.

(1) Local sourcing of raw materials and labour.

(2) Entering into joint ventures

(3) Local financing

(4) Prior negotiations

Question 4

(a)

Name	***Status***	***Principal Amount (₹ in millions)***	***Duration of loan/ deposit (time)***	***Interest rates of Borrowing/ Lending***	***Strike Rate (PLR) (K)***	***Premium (%) (lumpsum) (P)***	***If PLR rate at the end of first 6-months (Reset Period)***
AB Ltd.	*Borrower*	*₹ 5.00*	*5 Year*	*PLR+0.5*	*8% p.a.*	*0.4%*	*10% p.a.*
XY Ltd.	*Depositor*	*₹ 2.00*	*3 Year*	*PLR-0.5*	*8% p.a.*	*0.5%*	*6% p.a.*

You are required to:

(i) Elaborate the strategy to be adopted by both the companies to hedge against the risk of interest rate fluctuations.

(ii) Premium paid/received based on the strategy to be adopted in (i) using 8% p.a. as the reference rate.

(iii) Net Gain/loss due to hedging to both the companies. ***(6 Marks)***

(b) CE Ltd. has earned a net profit of ₹ 84 lakhs after tax at 30%. CE Ltd. has developed a high tech product which is in high demand. The product has been patented and has a market value of ₹ 100 Lakhs, which is not recorded in the books. The Net Worth of CE Ltd. is ₹ 200 Lakhs. Long Term Debt is ₹ 400 Lakhs. The rate on 365 days Government bond is 10% p.a. Market portfolio generates a return of 14% p.a. The stock of the company moves in tandem with the market.

Required:

(i) Compute the operating income

(ii) Compute EVA

(iii) CE Ltd. has 7 lakh equity shares outstanding. Based on the EVA computed in (ii), how much dividend per share can CE Ltd. pay before the value of the company starts to decline? ***(4 Marks)***

(c) A technical analyst at a portfolio management firm is tracking the stock price movements of five different companies. The analyst has described the observed chart patterns as follows:

- *Scenario 1: The stock of "Dynamic IT Ltd." shows a series of uniformly rising peaks and troughs, indicating a consistent upward price movement.*
- *Scenario 2: "Momentum Motors Ltd." experienced a strong upward price trend. This was followed by a brief period of consolidation, after which the original upward trend resumed with significant volume.*
- *Scenario 3: "Pioneer Pharma Ltd." shows three peaks, with the middle one highest. The price then broke below the line connecting the troughs, signaling a major downturn.*
- *Scenario 4: "Global Steel Inc." shows a period of contracting range, with lower highs and higher lows. The direction of the eventual price break is currently unclear.*
- *Scenario 5: "Sunrise FMCG Ltd." exhibits a pattern where the price highs are consistently falling while the price lows are consistently rising, causing the trading range to narrow over time.*

Required:

From the five scenarios described above, identify and name the specific technical price pattern being formed for ***any four****.* ***(4 Marks)***

Answer

(a) (i) Strategy to be adopted by both the companies:

- AB Ltd. – Buying Cap Option
- XY Ltd. – Buying Floor Option

(ii) Premium paid by both companies

First of all we shall calculate premium payable to bank as follows:

$$P = \frac{rp}{\left[(1 \div i) - \frac{1}{i \times (1+i)^t}\right]} X\ A \text{ or } \frac{rp}{PVAF(4.00\%,10)} \times A$$

Where

P = Premium

A = Principal Amount

rp = Rate of Premium

i = Fixed Rate of Interest

t = Time

For AB Ltd.

$$= \frac{0.004}{\left[(1/0.04) - \frac{1}{0.04 \times 1.04^{10}}\right]} \times 5{,}000{,}000 \text{ or } \frac{1}{8.1108} \times 5{,}000{,}000 \times 0.4\%$$

= ₹ 2465.85 or ₹ 2,466

For XY Ltd.

$$= \frac{0.005}{\left[(1/0.04) - \frac{1}{0.04 \times 1.04^{6}}\right]} \times 20{,}000{,}000 \text{ or } \frac{1}{5.2421} \times 2{,}000{,}000 \times 0.5\%$$

= ₹ 1907.63 or ₹ 1,908

(iii) Net Gain/ Loss due to hedging to both the companies

AB Ltd.

Gain on Interest for Cap Option	2%
Amount of Gain ₹ 5 millions x 2% x (1/2)	₹ 50,000
Less: Premium Paid	₹ 2,466
Net Gain	₹ 47,534

XY Ltd.

Gain on Interest for Cap Option	2%
Amount of Gain ₹ 2 millions x 2% x (1/2)	₹ 20,000
Less: Premium Paid	₹ 1,908
Net Gain	₹ 18,092

Alternative Solution if students have considered reset period (n-1)

(i) Strategy to be adopted by both the companies

- AB Ltd. – Buying Cap Option
- XY Ltd. – Buying Floor Option

(ii) Premium paid by both companies

First of all we shall calculate premium payable to bank as follows:

$$P = \frac{rp}{\left[(1 \div i) - \frac{1}{i \times (1+i)^t}\right]} \text{ X A or } \frac{rp}{PVAF(4.00\%, 9)} \times A$$

Where

P = Premium

A = Principal Amount

rp = Rate of Premium

i = Fixed Rate of Interest

t = Time

For AB Ltd.

$$= \frac{0.004}{\left[(1/0.04) - \frac{1}{0.04 \times 1.04^{9}}\right]} \times 5{,}000{,}000 \text{ or } \frac{1}{7.4353} \times 5{,}000{,}000 \times 0.4\%$$

= ₹ 2689.87 or ₹ 2,690

For XY Ltd.

$$= \frac{0.005}{\left[(1/0.04) - \frac{1}{0.04 \times 1.04^{5}}\right]} \times 20{,}000{,}000 \text{ or } \frac{1}{4.4518} \times 2{,}000{,}000 \times 0.5\%$$

= ₹ 2246.28 or ₹ 2246

(iii) Net Gain/ Loss due to hedging to both the companies

AB Ltd.

Gain on Interest for Cap Option	2%
Amount of Gain ₹ 5 millions x 2% x (1/2)	₹ 50,000
Less: Premium Paid	₹ 2,690
Net Gain	₹ 47,310

XY Ltd.

Gain on Interest for Cap Option	2%
Amount of Gain ₹ 2 millions x 2% x (1/2)	₹ 20,000
Less: Premium Paid	₹ 2,246
Net Gain	₹ 17,754

(b) EVA = Operating Income – (Cost of Capital x Total Investment)

Total Investments

	Amount (₹ Lakhs)
Net Worth	200.00
Long Term Debts	400.00
Patent Rights	100.00
Total	700.00

WACC = $14\% \times \frac{300}{700} + 10\% (1\text{-}0.30) \times \frac{400}{700}$

= 6% + 4% = 10%

EVA = Operating Income – WACC x Invested Capital

Taxable Income = ₹ 84 Lakhs/ (1 – 0.30) = ₹ 120 lakhs

Operating Income = Taxable Income + Interest

= ₹ 120 Lakhs + (₹ 400 Lakhs x 10%)

= ₹ 120 Lakhs + ₹ 40 Lakhs = ₹ 160 Lakhs

EVA = ₹ 160 Lakhs (1 – 0.30) – 10% x ₹ 700 Lakhs

= ₹ 42 Lakhs

Maximum Dividend = ₹ 42 Lakhs/7,00,000 = ₹ 6.00

(c)

- Scenario 1 - Channel
- Scenario 2 – Flag
- Scenario 3 – Head & Shoulders
- Scenario 4 – Triangle or Coil
- Scenario 5 – Wedge

Question 5

(a) Mrs. SRS is your HNI Client and wants to invest in stock market. She has got the following information about individual securities and wants to select the securities to form an optimal portfolio from amongst these securities:

(b)

Security	***Expected Return (%)***	***Unsystematic Risk (%)***	***Beta***
A	*5*	*25*	*0.5*
B	*25*	*20*	*2.5*
C	*15*	*10*	*1.0*
D	*10*	*10*	*1.5*
E	*20*	*18*	*1.8*

Market Index Variance is 25% and the Risk Free Rate of Return is 7%.

Required:

Based on this information help Mrs. SRS to:

(i) Prepare ranked table using Treynor's Ratio.

(ii) Calculate Cut-off Point.

(iii) Identify the securities to be included in optimal portfolio. ***(8 Marks)***

(b) MITU Ltd. wants to expand business outside India. For the project installation US funds $ 14.775 Million are required. Company wants to raise money by issue of GDRs.

Following information is available:

(1) 7 shares shall underly each GDR.

(2) GDR shall be priced at 7% discount to market price.

(3) Market Price of share is ₹ 500 (Face Value ₹ 100) per share.

(4) Expected exchange rate is $1= ₹ 81.3750.

(5) Dividend expected to be paid is 15% with growth rate 10%.

(6) Flotation Cost of GDR is 1.5%.

Required:

Compute the number of GDRs to be issued and cost of the GDR to the company.

*(**Note:** Calculate in lacs with four decimals).* ***(6 Marks)***

Answer

(a) (i) Ranked table using Treynor's Ratio

Security	R_i	β_i	$R_i - R_f$	$\frac{R_i - R_f}{\beta_i}$	**Ranking**
A	5	0.5	-2	-4	5
B	25	2.50	18	7.20	3
C	15	1.00	8	8.00	1
D	10	1.50	3	2.00	4
E	20	1.80	13	7.22	2

(ii) Calculation of Cut-off Point

Security	$R_i - R_f$	β_i	σ^2_{ei}	$\frac{(R_i - R_f) \times \beta_i}{\sigma^2_{ei}}$	$\sum_{e=i}^{N} \frac{(R_i - R_f) \times \beta_i}{\sigma^2_{ei}}$	$\frac{\beta_i^2}{\sigma^2_{ei}}$	$\sum_{e=i}^{N} \frac{\beta_i^2}{\sigma^2_{ei}}$	C_i
C	8	1.0	10	0.80	0.80	0.10	0.10	5.71
E	13	1.80	18	1.30	2.10	0.18	0.28	6.56
B	18	2.50	20	2.25	4.35	0.313	0.593	6.87
D	3	1.50	10	0.45	4.80	0.225	0.818	5.59
A	-2	0.50	25	-0.04	4.76	0.01	0.828	5.48

CC = 25 x 0.80 / [1 + (25 x 0.10)] = 5.71

CE = 25 x 2.10 / [1 + (25 x 0.28)] = 6.56

CB = 25 x 4.35 / [1 + (25 x 0.593)] = 6.87

CD = 25 x 4.80 / [1 + (25 x 0.818)] = 5.59

CA = 25 x 4.76 / [1 + (25 x 0.828)] = 5.48

Cut-off Point: 6.87

(iii) The stock whose excess-return to risk ratio (Treynor ratio in (i) above) is above the cut-off point of 6.87 are selected and whose ratios are below are rejected. Hence Security C, E & B are selected in the optimal portfolio while remaining securities i.e D & A are rejected as they are placed below the cut-off point.

(b) Net Issue Size = $14.775 million

Gross Issue = $\frac{\$14.775 \text{ million}}{0.985}$ = $ 15 million

Issue Price per GDR in ₹ (500 x 7 x 93%)	₹ 3255
Issue Price per GDR in $ (₹ 3255/ ₹ 81.3750)	$ 40
Dividend Per GDR (D_1) (₹ 15 x 7)	₹ 105
Net Proceeds Per GDR (₹ 3255 x 0.985)	₹ 3206.18

(a) Number of GDR to be issued = $\frac{\$15 \text{ million}}{\$40}$

= 0.375 million/3.75 Lakhs /3,75,000

(b) Cost of GDR to X Ltd. $k_e = \frac{105.00}{3206.18} + 0.10 = 13.27\%$