PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

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

*Attempt any **four** out of the remaining **five** questions.*

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

Working notes should form part of the answer.

Question 1

1. (a) *A Ltd., a listed company, is considering merger of B Ltd. which is also a listed company, with itself by means of a stock swap (exchange). B Ltd. has agreed to a plan under which A Ltd. will offer the current market value of B Ltd.'s shares.*

Additional Information:

Particulars	A Ltd.	B Ltd.
Earnings after tax (₹)	10,00,000	2,50,000
Number of shares outstanding	4,00,000	2,00,000
Current market price (₹) per share	50	20

On the basis of above information, you are required to calculate the following:

(i) *What is the pre-merger Earnings per Share (EPS) and P/E ratio of both the companies?*

(ii) *If B Ltd.'s P/E is 10, what is its current market price per share?*

What is the exchange ratio? What will A Ltd.'s post-merger EPS be?

(iii) *What must the exchange ratio be for A Ltd.'s Pre-merger and Post-merger EPS to be the same?* **(8 Marks)**

(b) *P Ltd. is contemplating to borrow an amount of ₹ 50 crores for a period of 3 months in the coming 6 months time from now. The current rate of interest is 8% per annum but it may go up in 6 months time. The company wants to hedge itself against the likely increase in interest rate.*

The Company's Bankers quoted an FRA (Forward Rate Agreement) at 8.30% per annum.

Compute the effect of FRA and actual rate of interest cost to the company, if the actual rate of interest during consideration period happens to be (i) 8.60% p.a., or (ii) 7.80% p.a.

(Show your workings on the basis of months) **(8 Marks)**

(c) *State briefly the basic characteristics of venture capital financing?* **(4 Marks)**

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Answer

(a) (i) Before Merger

	A Ltd.	B Ltd.
Earning after tax (₹)	10,00,000	2,50,000
No. of shares outstanding	4,00,000	2,00,000
EPS	₹ 2.50	₹ 1.25
Current Market Price/Share	₹ 50	₹ 20
P/E Ratio	20	16

(ii) If B Ltd.'s P/E Ratio is 10

Then, it's Current Market Price = 10 x ₹ 1.25 = ₹ 12.50

Exchange Ratio = 12.50 : 50 i.e. 1 share of A Ltd. for every 4 shares of B Ltd.

No. of shares to be issued = 50,000

A Ltd. Post-Merger EPS

Post-Merger Earning (10,00,000 + 2,50,000)	₹ 12,50,000
No. of Equity Shares after Merger (4,00,000 + 50,000)	4,50,000
EPS	₹ 2.78

(iii) Calculation of Exchange Ratio for A Ltd.'s pre-merger and post-merger EPS to be the same

= Total earnings/Pre-merger EPS of A Ltd.

= ₹12,50,000/₹ 2.50 = 5,00,000 shares

Now, number of shares to be issue to B Ltd. = 5,00,000 – 4,00,000 = 1,00,000 shares

Therefore, the share exchange ratio is 1,00,000 : 2,00,000 or 1:2. It means for every two shares in B Ltd., one share should be issued from A Ltd.

(b) Final settlement amount shall be computed by using formula:

$$= \frac{(N)(RR - FR)(dtm / DY)}{[1 + RR(dtm / DY)]}$$

Where,

N = the notional principal amount of the agreement;

RR = Reference Rate for the maturity specified by the contract prevailing on the contract settlement date;

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FR = Agreed-upon Forward Rate; and

dtm = maturity of the forward rate, specified in Months

DY = Applicable basis of months

Accordingly,

If actual rate of interest after 6 months happens to be 8.60%

$$= \frac{(₹50\text{crore})(0.086-0.083)(3/12)}{[1 + 0.086(3/12)]}$$

$$= \frac{(₹50\text{crore})(0.003)\ (0.25)}{1.0215} = \frac{3,75,000}{1.0215} = ₹3,67,107$$

Thus, ***banker will pay*** a sum of ₹ 3,67,107 to P Ltd. and actual interest rate for P Ltd. shall be as follows:

Interest on loan @ 8.60% for 3 months	₹ 1,07,50,000
Less: Amount Received from the bank	₹ 3,67,107
Net Amount	₹ 1,03,82,893
Effective Interest Rate (₹ 1,03,82,893/ ₹ 50 crore x 12/3 x 100)	8.31%

If actual rate of interest after 6 months happens to be 7.80%

$$= \frac{(₹50\text{crore})(0.0780-0.0830)(3/12)}{[1 + 0.0780(3/12)]}$$

$$= \frac{(₹50\text{crore})(-0.005)(0.25)}{1.0195} = \frac{-6,25,000}{1.0195} = -₹\ 6,13,046$$

Thus ***P Ltd. will pay*** banker a sum of ₹ 6,13,046 and actual interest rate for P Ltd. shall be as follows:

Interest on loan @7.80% for 3 months	₹ 97,50,000
Add: Amount paid to bank	₹ 6,13,046
Net Amount	₹ 1,03,63,046
Effective Interest Rate (₹ 1,03,63,046/50 crore x 12/3 x 100)	8.29%

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(c) Basic characteristics of Venture Capital Financing:

(i) **Long time horizon**: The fund would invest with a long time horizon in mind. Minimum period of investment would be 3 years and maximum period can be 10 years.

(ii) **Lack of liquidity**: When VC invests, it takes into account the liquidity factor. It assumes that there would be less liquidity on the equity it gets and accordingly it would be investing in that format. They adjust this liquidity premium against the price and required return.

(iii) **High Risk**: VC would not hesitate to take risk. It works on principle of high risk and high return. So, high risk would not eliminate the investment choice for a venture capital.

(iv) **Equity Participation**: Most of the time, VC would be investing in the form of equity of a company. This would help the VC participate in the management and help the company grow. Besides, a lot of board decisions can be supervised by the VC if they participate in the equity of a company.

Question 2

(a) Cinderella Mutual Fund, an approved mutual fund, sponsored open-ended equity oriented scheme "Rudolf Opportunity Fund". There are three plans under the scheme viz. 'A' - Dividend Re-investment plan, 'B' - Bonus plan and 'C' - Growth plan.

At the time of initial public offer on 1-4-2009, Mr. Amit, Mr. Ashish and Mr. Arun, three investors invested ₹ 2,00,000 each at face value of ₹ 10 per unit and chosen plan 'B', 'C' and 'A' respectively.

The particulars of the fund over the period are as follows:

Date	Dividend %	Bonus Ratio	Net Asset Value per unit (₹)		
			Plan A	Plan B	Plan C
31.07.2013	10	-	30.70	31.20	35.40
31.03.2014	35	5:4	58.42	31.05	58.25
30.10.2017	20	-	42.18	26.45	56.45
15.03.2018	12.50	-	46.45	27.72	62.78
31.03.2018	-	1:3	45.20	20.05	67.12
25.03.2019	20	1:4	48.10	19.95	71.42
31.07.2019	-	-	53.75	22.98	82.07

On 31st July, 2019, all the three investors redeemed all the balance units.

1. Consider the following:

(a) Long-term capital gain is exempt from Income-tax.

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(b) Short-term capital gain is subject to 10% Income-tax.

(c) Security Transaction Tax is 0.2% only on sale/ redemption of units.

(d) Ignore Education Cess.

2. You are required:

(i) To calculate the Effective Yield per annum (annual rate of return) of each of the investors.

(ii) To suggest the name of investor with the highest Effective Yield per annum with the difference to his nearest investor.

(Show your calculations up to two decimal points) ***(10 Marks)***

(b) A future contract is available on R Ltd. that pays an annual dividend of ₹ 4 and whose stock is currently priced at ₹ 125. Each future contract calls for delivery of 1,000 shares to stock in one year, daily marking to market. The corporate treasury bill rate is 8%.

Required:

(i) Given the above information, what should the price of one future contract be ?

(ii) If the company stock price decreases by 6%, what will be the price of one futures contract ?

(iii) As a result of the company stock price decrease, will an investor that has a long position in one futures contract of R Ltd. realizes a gain or loss ? What will be the amount of his gain or loss ?

(Ignore margin and taxation, if any) ***(6 Marks)***

(c) Identify the benefits of Securitization from the angle of Originator. ***(4 Marks)***

Answer

(a) (i) Calculation of effective yield per annum of each of the investors

Mr. Arun Plan A Dividend Reinvestment

(Amount in ₹)

Date	Investment	Dividend payout (%)	Dividend Re-invested (Closing Units X Face value of '10 X Dividend Payout %)	NAV	Units	Closing Unit Balance
01.04.2009	2,00,000.00			10.00	20,000.00	20,000.00
31.07.2013		10	20,000.00	30.70	651.47	20,651.47

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31.03.2014		35	72,280.15	58.42	1,237.25	21,888.72
30.10.2017		20	43,777.44	42.18	1,037.87	22,926.59
15.03.2018		12.5	28,658.24	46.45	616.97	23,543.56
25.03.2019		20	47,087.12	48.10	978.94	24,522.50

Redemption value 24522.5 × 53.75	13,18,084.38
Less: Security Transaction Tax (STT) is 0.2%	2636.17
Net amount received	13,15,448.21
Less: Short term capital gain tax @ 10% on 978.94 (53.64* – 48.10≈) = 5423.33	542.33
Net of tax	13,14,905.88
Less: Investment	2,00,000.00
	11,14,905.88

*(53.75 – STT @ 0.2%) ≈ This value can also be taken as zero

Annual average return (%) $\frac{11,14,905.88}{2,00,000} \times \frac{12}{124} \times 100 = 53.95\%$

Mr. Amit Plan B – Bonus

(Amount in ₹)

Date	Units	Bonus units	Total Balance	NAV per unit
01.04.2009	20,000		20,000	10
31.03.2014		25,000	45,000	31.05
31.03.2018		15,000	60,000	20.05
25.03.2019		15,000	75,000	19.95

Redemption value 75,000 × 22.98	17,23,500
Less: Security Transaction Tax (STT) is 0.2%	3447
Net amount received	17,20,053
Less: Short term capital gain tax @ 10%	
15,000 × (22.93† – 19.95) = 44,700	4470
Net of tax	17,15,583
Less: Investment	2,00,000
Net gain	15,15,583

†(22.98 – STT @ 0.2%)

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Annual average return (%) = $\frac{15,15,583}{2,00,000} \times \frac{12}{124} \times 100 = 73.33\ \%$

Mr. Ashish Plan C – Growth

Particulars	(Amount in ₹)
Redemption value 20,000 × 82.07	16,41,400.00
Less: Security Transaction Tax (S.T.T) is 0.2%	3282.80
Net amount received	16,38,117.20
Less: Short term capital gain tax @ 10%	0.00
Net of tax	16,38,117.20
Less: Investment	2,00,000.00
Net gain	14,38,117.20

Annual average return (%) $\frac{14,38,117.20}{2,00,000} \times \frac{12}{124} \times 100 = 69.59\ \%$

(ii) Mr. ***Amit*** (Bonus Plan) earns the highest effective yield per annum of 73.33% and the difference to his nearest investor Mr. Ashish is ***3.74*** (73.33 – 69.59%).

Note: Alternatively, figure of * and † can be taken as without net of Tax because, as per Proviso 5 of Section 48 of IT Act, no deduction of STT shall be allowed in computation of Capital Gain.

In such case:

Mr. Arun Plan A – Short term capital gains tax would be Rs 553.10. Accordingly Net of tax will be ₹ 13,14,895.10 and the net gain would be Rs 11,14,895.10.

Mr. Amit Plan B – Bonus Plan – Short term capital gains tax would be Rs 4,545. Accordingly Net of tax will be ₹17,15,508 and the net gain would be Rs 15,15,508.

(b) (i) Future Price = Spot + Cost of Carry – Dividend

= ₹ 125 + (₹ 125 x 0.08) – 4 = ₹ 131

Price of one future contract = 1000 share x ₹ 131 = ₹ 1,31,000

(ii) Price decrease by 6 %

Market Price = 125 x 94% = 117.50

Then, price of one future contract

= ₹ 117.50 + (₹ 117.50 x 0.08) – 4 = ₹ 122.90

= ₹ 122.90 x 1000 = ₹ 1,22,900

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(iii) If the investor has taken a long position, decrease in price will result in ***loss*** for the investor.

Amount of loss will be:

₹ 1, 31,000 - ₹ 1,22,900 = ₹ 8,100

(c) Originator (entity which sells assets collectively to Special Purpose Vehicle) achieves the following benefits from securitization:

(i) **Off – Balance Sheet Financing**: When loan/receivables are securitized, it releases a portion of capital tied up in these assets resulting in off Balance Sheet financing leading to improved liquidity position which helps expanding the business of the company.

(ii) **More specialization in main business**: By transferring the assets, the entity could concentrate more on core business as servicing of loan is transferred to SPV. Further, in case of non-recourse arrangement even the burden of default is shifted.

(iii) **Helps to improve financial ratios**: Especially in case of Financial Institutions and Banks, it helps to manage Capital –To-Weighted Asset Ratio effectively.

(iv) **Reduced borrowing Cost:** Since securitized papers are rated due to credit enhancement even they can also be issued at reduced rate in case of debts and, hence, the originator earns a spread, resulting in reduced cost of borrowings.

Question 3

(a) AB Ltd.'s equity shares are presently selling at a price of ₹ 500 each. An investor is interested in purchasing AB Ltd.'s shares. The investor expects that there is a 70% chance that the price will go up to ₹ 650 or a 30% chance that it will go down to ₹ 450, three months from now. There is a call option on the shares of the firm that can be exercised only at the end of three months at an exercise price of ₹ 550.

Calculate the following:

(i) If the investor wants a perfect hedge, what combination of the share and option should he select ?

(ii) Explain how the investor will be able to maintain identical position regardless of the share price.

(iii) If the risk-free rate of return is 5% for the three months period, what is the value of the option at the beginning of the period ?

(iv) What is the expected return on the option? ***(8 Marks)***

(b) Closing values of BSE Sensex from 6th to 17th day of the month of January of the year 20xx were as follows:

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Days	*Date*	*Day*	*Sensex*
1	*6*	*THU*	*34522*
2	*7*	*FRI*	*34925*
3	*8*	*SAT*	*No Trading*
4	*9*	*SUN*	*No Trading*
5	*10*	*MON*	*35222*
6	*11*	*TUE*	*36000*
7	*12*	*WED*	*36400*
8	*13*	*THU*	*37000*
9	*14*	*FRI*	*No Trading*
10	*15*	*SAT*	*No Trading*
11	*16*	*SUN*	*No Trading*
12	*17*	*MON*	*38,000*

Calculate Exponential Moving Average (EMA) of Sensex during the above period. The 30 days simple moving average of Sensex can be assumed as 35,000. The value of exponent for 30 days EMA is 0.064. Provide analyzed conclusion on the basis of your calculations.

(Calculations should be up to three decimal points.) ***(8 Marks)***

(c) What is a startup to avail the benefits of government scheme ? ***(4 Marks)***

Answer

(a) (i) To compute perfect hedge we shall compute Hedge Ratio (Δ) as follows:

$$\Delta = \frac{C_1 - C_2}{S_1 - S_2} = \frac{100-0}{650-450} = \frac{100}{200} = 0.50$$

The investor should purchase 0.50 share for every 1 call option

Or, the investor should purchase 1 share for every 2 Call Option.

(ii) How the investor will be able to maintain his position if he purchase 0.50 share for 1 call option written.

(a) If price of share goes upto ₹ 650 then value of purchased share will be:

Sale Proceeds of Investment (0.50 x ₹ 650)	₹ 325
Loss on account of Short Position (₹ 650 – ₹ 550)	₹ 100
	₹ 225

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(b) If price of share comes down to ₹ 450 then value of purchased share will be:

Sale Proceeds of Investment (0.50 x ₹ 450) ₹ 225

(iii) The Value of Option, say, P at the beginning of the period shall be computed as follows:

(₹ 250 – P) 1.05 = ₹ 225

₹ 262.50 – 1.05P = ₹ 225

₹ 37.5 = 1.05P

P = ₹ 35.71

(iv) Expected Return on the Option

Expected Option Value = (₹ 650 – ₹ 550) × 0.70 + ₹ 0 × 0.30 = ₹70

Expected Rate of Return = $\frac{70-35.71}{35.71} \times 100 = 96.02\%$

(b)

Date	1 Sensex	2 EMA for Previous day	3 1-2	4 3×0.064	5 EMA 2 ± 4
6	34522	35000	(478)	(30.592)	34969.408
7	34925	34,969.408	(44.408)	(2.842)	34966.566
10	35222	34966.566	255.434	16.348	34982.914
11	36000	34982.914	1017.086	65.094	35048.008
12	36400	35048.008	1351.992	86.527	35134.535
13	37000	35134.535	1865.465	119.390	35253.925
17	38000	35253.925	2746.075	175.749	35429.674

Conclusion – The market is bullish. The market is likely to remain bullish for short term to medium term if other factors remain the same. On the basis of this indicator (EMA) the investors/brokers can take long position.

(c) Startup India scheme was initiated by the Government of India on 16th of January, 2016. The definition of startup was provided which is applicable only in case of Government Schemes.

❖ **Startup means an entity, incorporated or registered in India (at the date of initiation of the scheme):**

- Not prior to five years,

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- With annual turnover not exceeding ₹25 crore in any preceding financial year, and
- Working towards innovation, development, deployment or commercialization of new products, processes or services driven by technology or intellectual property.

Provided that such entity is not formed by splitting up, or reconstruction, of a business already in existence. Provided also that an entity shall cease to be a Startup if its turnover for the previous financial years has exceeded ₹ 25 crore or it has completed 5 years from the date of incorporation/ registration. Provided further that a Startup shall be eligible for tax benefits only after it has obtained certification from the Inter-Ministerial Board, setup for such purpose.

Question 4

(a) Following information is available of M/s. TS Ltd.

	(₹ in crores)
PBIT	*5.00*
Less : Interest on Debt (10%)	*1.00*
PBT	*4.00*
Less: Tax @ 25%	*1.00*
PAT	*3.00*
No. of outstanding shares of ₹ 10 each	*40 lakh*
EPS (₹)	*7.5*
Market price of share (₹)	*75*
P/E ratio	*10 Times*

TS Ltd. has an undistributed reserves of ₹ 8 crores. The company requires ₹ 3 crores for the purpose of expansion which is expected to earn the same rate of return on capital employed as present. However, if the debt to capital employed ratio is higher than 35%, then P/E ratio is expected to decline to 8 Times and rise in the cost of additional debt to 14%. Given this data which of the following options the company would prefer, and why?

Option (i) : If the required amount is raised through debt, and

Option (ii) : If the required amount is raised through equity and the new shares will be issued at a price of ₹ 25 each. ***(8 Marks)***

(b) Following information relates to M/s A Lt d. which is a manufacturing-cum-exporting unit. It is exporting some electronic components to Japan, USA and Europe on 90 days credit terms:

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Cost and Sales Information:

	Japan	USA	Europe
Variable cost per unit	₹ 225	₹ 395	₹ 510
Export sale price per unit	Yen 650	$ 10.23	Euro 11.99
Receipts from sale due in 90 days	Yen 78,00,000	$ 1,02,300	Euro 95920
Foreign exchange rate information			
	Japan Yen/Re	**USA** $/Re	**Europe** Euro/Re
Spot market	2.417-2.437	0.0214-0.0217	0.0177-0.0180
3 months forward	2.397-2.427	0.0213-0.0216	0.0176-0.0178
3 months spot	2.423-2.459	0.02144-0.02156	0.0177-0.0179

Advice the company by calculating average contribution to sales ratio whether it should hedge its currency risk or not. ***(8 Marks)***

(c) *Following is the information about Mr. J's portfolio:*

Investment in shares of ABC Ltd.	*₹ 200 lakh*
Investment in shares of XYZ Ltd.	*₹ 200 lakh*
Daily standard deviation of both shares	*1%*
Co-efficient of correlation between both shares	*0.3*

Required:

Determine the 10 days 99% Value At Risk (VAR) for Mr. J' s portfolio. Given : The Z score from the Normal Table at 99% confidence level is 2.33. (Show your calculations up to four decimal points). ***(4 Marks)***

Answer

(a) Working Notes

(1) Calculation of Return on Capital Employed (ROCE)

	(₹ in crores)
Capital Employed:	
Share Capital (₹ 10 x 40 lakhs)	4
Reserves	8
Debt (₹ 1 cr. x 100/10)	10
	22

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PBIT	5
ROCE	22.73%

(2) Revised PBIT

Existing Capital Employed	22
Additional	3
ROI	22.73%
Revised PBIT	5.6825

(3) New Debt/Equity

Existing Debt	10
Additional Under Option (i)	3
Total Debt	13
Total Equity	12

New Debt to Capital Employed Ratio = $\frac{13}{25}$ = 0.52

So, P/E Ratio to be reduced to 8 times

(4) Debt to Capital Employed Ratio in Option (ii)

= $\frac{10}{25}$ = 0.40

So, P/E Ratio to be reduced to 8 times in this case also

(5) Number of additional shares to be issued in case of Option (ii)

Funds to be raised ₹ 3 crore

Price per share ₹ 25

No. of additional shares to be issued ₹ 3 crore/ ₹ 25 = 12 lakhs

Particulars	Option (i)	Option (ii)
PBIT (Revised) (₹ Crore)	5.6825	5.6825
Less: Interest on Debt	1.42	1.00
PBT (₹ Crore)	4.2625	4.6825
Tax @ 25% (₹ Crore)	1.0656	1.1706
PAT (₹ Crore)	3.1969	3.5119
No. of shares outstanding	40 lakhs	52 lakhs

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EPS	₹ 7.99	₹ 6.75
P/E Ratio	8	8
New Share Price	₹ 63.92	₹ 54.00

Decision:

Since the MPS is expected to be more in the case of additional financing done through debt (Option – I) Option – I is preferred.

(b) If foreign exchange risk is hedged

				Total (₹)
Sum due	Yen 78,00,000	US$1,02,300	Euro 95,920	
Unit input price	Yen 650	US$10.23	Euro 11.99	
Unit sold	12000	10000	8000	
Variable cost per unit	₹ 225/-	₹ 395	₹ 510	
Variable cost	₹ 27,00,000	₹ 39,50,000	₹ 40,80,000	1,07,30,000
Three months forward rate for selling	2.427	0.0216	0.0178	
Rupee value of receipts	₹ 32,13,844	₹ 47,36,111	₹ 53,88,764	**1,33,38,719**
Contribution	₹ 5,13,844	₹ 7,86,111	₹ 13,08,764	**26,08,719**
Average contribution to sale ratio				19.56%
If risk is not hedged				
Rupee value of receipt	₹ 31,72,021	₹ 47,44,898	₹ 53,58,659	**1,32,75,578**
Variable cost				1,07,30,000
Total contribution				25,45,578
Average contribution to sale ratio				19.17%

Decision : A Ltd. is advised to hedge its foreign currency exchange risk.

(c) Volatility (standard deviation) of the daily change in the investment in each share in terms of rupees-

1% of ₹ 200 lakh = ₹ 2 lakh

The variance of the portfolio's daily change -

$V = 2^2 + 2^2 + 2 \times 0.3 \times 2 \times 2 = 10.4$ lakh

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Standard Deviation of the portfolio's daily change = $\sqrt{10.4}$ = ₹ 3.2249 lakhs

The standard deviation of the 10-day change

= ₹ 3.2249 lakhs x $\sqrt{10}$ = ₹ 10.1981 lakhs

Therefore, the 10-days 99% VAR = 2.33 × ₹ 10.1981 lakhs = ₹ 23.7616 lakhs

Question 5

(a) Mr. X holds the following portfolio:

Securities	***Cost (₹)***	***Dividends (₹)***	***Market Price (₹)***	***Beta***
Equity shares:				
A Ltd.	*16,000*	*1,600*	*16,400*	*0.9*
B Ltd.	*20,000*	*1,600*	*21,000*	*0.8*
C Ltd.	*32,000*	*1,600*	*44,000*	*0.6*
PSU Bonds	*68,000*	*6,800*	*64,600*	*0.4*

The risk-free rate of return is 12%.

Calculate the following:

(i) The expected rate of return on his portfolio using Capital Asset Pricing Model (CAPM).

(ii) The average return on his portfolio. (Calculate up to two decimal points) ***(8 Marks)***

(b) TG Ltd., a multinational company is planning to set up a subsidiary company in India (where hitherto it was exporting) in view of growing demand for its product and competition from other MNCs. The initial project cost (consisting of plant and machinery including installation) is estimated to be US $ 500 million. The net working capital requirements are estimated at US $ 100 million. The company follows straight line method of depreciation. Presently, the company is exporting 2 million units every year at a unit price of US $ 100, its variable cost per unit being US $ 50.

The Chief Financial Officer has estimated the following operating cost and other data in respect of the proposed project:

(a) Variable operating cost will be US $ 25 per unit of production.

(b) Additional cash fixed cost will be US $ 40 million per annum.

(c) Production and Sales capacity of the proposed project in India will be 5 million units.

(d) Expected useful life of the proposed plant is 5 years with no salvage value.

(e) Existing working capital investment for production and sale of 2 million units through exports was US $ 20 million.

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(f) Export of the product in the coming year will decrease to 1.5 million units in case the company does not open subsidiary company in India, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in India.

(g) Applicable Corporate Income Tax rate is 30%.

(h) Required rate of return for such project is 12%.

Assume that there will be no variation in the exchange rate of two countries, all profits will be repatriated and there will be no withholding tax.

Estimate the Net Present Value (NPV) of the proposed project in India.

Present Value Interest Factors (PVIF) @ 12% for 5 years are as under:

Year:	*1*	*2*	*3*	*4*	*5*
PVIF:	*0.8929*	*0.7972*	*0.7118*	*0.6355*	*0.5674*

(Compute your workings to 4 decimals) ***(8 Marks)***

(c) Discuss briefly the key decisions which fall within the scope of financial strategy.

(4 Marks)

Answer

(a) Calculation of expected return on market portfolio (R_m)

Investment	Cost (₹)	Dividends (₹)	Capital Gains (₹)
Shares A	16,000	1600	400
Shares B	20,000	1600	1000
Shares C	32,000	1600	12,000
PSU Bonds	68,000	6800	–3,400
	1,36,000	11,600	10,000

$$R_m = \frac{11,600 + 10,000}{1,36,000} \times 100 = 15.88\%$$

Calculation of expected rate of return on individual security:

Security		
Shares A	12 + 0.9 (15.88 – 12.0)	= 15.49%
Shares B	12 + 0.8 (15.88 – 12.0)	= 15.10%
Shares C	12 + 0.6 (15.88 – 12.0)	= 14.33%
PSU Bonds	12 + 0.4 (15.88 – 12.0)	= 13.55%

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Calculation of the Average Return of the Portfolio:

$$= \frac{15.49 + 15.10 + 14.33 + 13.55}{4} = 14.62\%.$$

(b) Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

I. Incremental Cash Outflows

	$ Million
Cost of Plant and Machinery	500.00
Working Capital	100.00
Saving of existing Working Capital employed in Export Business	(20.00)
	580.00

II. Incremental Cash Inflow after Tax (CFAT)

(a) Generated by investment in India for 5 years

	$ Million
Sales Revenue (5 Million x $100)	500.00
Less: Costs	
Variable Cost (5 Million x $25)	125.00
Fixed Cost	40.00
Depreciation ($500Million/5)	100.00
EBIT	235.00
Taxes@30%	70.50
EAT	164.50
Add: Depreciation	100.00
CFAT (1-5 years)	264.50
Cash flow at the end of the 5 years (Release of Working Capital)	80.00

(b) Cash generation by exports

	$ Million
Sales Revenue (1.5 Million x $100)	150.00
Less: Variable Cost (1.5 Million x $50)	75.00
Contribution before tax	75.00
Tax @ 30%	22.50
CFAT (1-5 years)	52.50

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(c) Additional CFAT attributable to Foreign Investment

	$ Million
Through setting up subsidiary in India	264.50
Through Exports in India	52.50
CFAT (1-5 years)	212.00

III. Determination of NPV

Year	CFAT ($ Million)	PVF@12%	PV ($ Million)
1-5	212	3.6048	764.2176
5	80	0.5674	45.3920
			809.6096
Less: Initial Outflow			580.0000
			229.6096

Decision: Since NPV is positive the proposal should be accepted

(c) The key decisions falling within the scope of financial strategy include 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 6

(a) Following are risk and return estimates for two stocks

Stock	*Expected returns (%)*	*Beta*	*Specific SD of expected return (%)*
A	*14*	*0.8*	*35*
B	*18*	*1.2*	*45*

The market index has a Standard Deviation (SD) of 25% and risk free rate on Treasury Bills is 6%.

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You are required to calculate :

(i) The standard deviation of expected returns on A and B.

(ii) Suppose a portfolio is to be constructed with the proportions of 25%, 40% and 35% in stock A, B and Treasury Bills respectively, what would be the expected return, standard deviation of expected return of the portfolio? ***(8 Marks)***

(b) Mr. X, a financial analyst, intends to value the business of PQR Ltd. in terms of the future cash generating capacity. He has projected the following after tax cash flows :

Year :	*1*	*2*	*3*	*4*	*5*
Cash flows (₹ in lakh)	*1,760*	*480*	*640*	*860*	*1,170*

It is further estimated that beyond 5th year, cash flows will perpetuate at a constant growth rate of 8% per annum, mainly on account of inflation. The perpetual cash flow is estimated to be ₹ 10,260 lakh at the end of the 5th year.

Required:

(i) What is the value of the firm in terms of expected future cash flows, if the cost of capital of the firm is 20%.

(ii) The firm has outstanding debts of ₹ 3,620 lakh and cash/bank balance of ₹ 2,710 lakh. Calculate the shareholder value per share if the number of outstanding shares is 151.50 lakh.

(iii) The firm has received a takeover bid from XYZ ltd. of ₹ 225 per share. Is it a good offer?

[Given: PVIF at 20% for year 1 to Year 5: 0.833, 0.694, 0.579, 0.482, 0.402]

(8 Marks)

(c) State the main problems faced in Securitization in India?

OR

List the main objectives of International Cash Management. ***(4 Marks)***

Answer

(a) (i) Total Risk = Systematic Risk + Unsystematic Risk

Stock A

Systematic Risk = $\beta^2 \sigma_m^2$ = $(0.8)^2 \times (25)^2 = 400$

Unsystematic Risk = 35^2

Total Risk = $\sigma = \sqrt{400+(35)^2} = \sqrt{1625}$ = 40.31%

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Stock B

Systematic Risk = $\beta^2 \sigma_m^2 = (1.2)^2 \times (25)^2 = 900$

Unsystematic Risk = 45^2

Total risk = $\sigma = \sqrt{900+(45)^2} = \sqrt{2925} = 54.08\%$

(ii) Expected return of the portfolio

(0.25 x 14) + (0.40 x 18) + (0.35 x 6) = 12.8%

Total Risk = Systematic Risk + Unsystematic Risk

Systematic Risk $\beta p^2 \sigma_m^2$

βp = 0.25 (0.8) + 0.4 (1.2) + 0.35 (0) = 0.2 + 0.48 + 0 = 0.68

Systematic Risk of Portfolio = $\sqrt{(0.68)^2 \times (25)^2} = \sqrt{289}$

Non-systematic Risk of Portfolio

= $(0.25)^2 (35)^2 + (0.40)^2 (45)^2 + 0 = 76.56 + 324 = \sqrt{400.56}$

Total Risk = $\sqrt{289+400.56} = 26.26$

(b) (i) Value of Firm

Year	Cash Flow (₹ in lakhs)	PVF	PV (₹ in lakhs)
1	1760	0.833	1466.08
2	480	0.694	333.12
3	640	0.579	370.56
4	860	0.482	414.52
5	1170	0.402	470.34
PV of Cash flows upto year 5			3054.62

If PV of Terminal Value is considered with the growth rate (at the end of 5th year)

$= \frac{10,260(1+0.08)}{0.20-0.08} = \frac{11,080,80}{0.12}$ = ₹92,340 lakh

Now, PV (at the beginning of the year)

= ₹92,340 x 0.402 = ₹37,120.68 Lakhs

So, Present Value of the firm = ₹3054.62 + ₹37120.68 = ₹40175.30 Lakhs

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(ii) Value per share

= Value of Firm – Value of Debt / No of shares

= (40175.30 – 3620)/151.50 = ₹ 241.29

(iii) Takeover bid of ₹ 225 per share seems to be not a good offer as it is lesser than the intrinsic value i.e. value per share of ₹ 241.29.

(c) Following are main problems faced in growth of Securitization of instruments especially in Indian context:

Stamp Duty: Stamp Duty is one of the obstacles in India. Under Transfer of Property Act, 1882, a mortgage debt stamp duty which even goes upto 12% in some states of India and this impeded the growth of securitization in India. It should be noted that since pass through certificate does not evidence any debt only able to receivable, they are exempted from stamp duty.

Moreover, in India, recognizing the special nature of securitized instruments in some states has reduced the stamp duty on them.

Taxation: Taxation is another area of concern in India. In the absence of any specific provision relating to securitized instruments in Income Tax Act, experts' opinion differs a lot. Some are of opinion that SPV as a trustee is liable to be taxed in a representative capacity. While, others are of view that instead of SPV, investors will be taxed on their share of income. Clarity is also required on the issues of capital gain implications on passing payments to the investors.

Accounting: Accounting and reporting of securitized assets in the books of originator is another area of concern. Although securitization is slated to an off-balance sheet instrument but in true sense receivables are removed from originator's balance sheet. Problem arises especially when assets are transferred without recourse.

Lack of standardization: Every originator following his own format for documentation and administration having lack of standardization is another obstacle in the growth of securitization.

Inadequate Debt Market: Lack of existence of a well-developed debt market in India is another obstacle that hinders the growth of secondary market of securitized or asset backed securities.

Ineffective Foreclosure laws: For many years efforts are on for effective foreclosure but still foreclosure laws are not supportive to lending institutions and this makes securitized instruments especially mortgaged backed securities less attractive as lenders face difficulty in transfer of property in event of default by the borrower.

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