FINAL EXAMINATION
Syllabus 2016

Paper 14: STRATEGIC FINANCIAL MANAGEMENT (SFM)

Time Allowed: 3 Hours **Full Marks: 100**

There are Sections A, B, C and D to be answered subject to instructions given against each.

Section A **You are required to answer all the questions. Each question carries 1 mark.** **Instructions: Each question is followed by 4 Answer choices and only one is correct. You are required to select the choice which according to you represents the correct answer.**					**20 × 1 = 20 Marks**
1.	**a.**	Which of the following statements is true in the context of rupee-dollar exchange rate with ri denoting interest rate in India and ru denoting interest rate in the US?			
		(i)	Rupee will be at forward discount if $r_i > r_u$		
		(ii)	Rupee will be at forward premium if $r_u > r_i$	A	
		(iii)	Rupee will be forward premium if $r_i > r_u$		
		(iv)	Rupee will be at par with dollar if ri = r_u		
	b.	Initial investment of a project is Rs. 25 lakh. Expected annual cash flows are Rs. 6.5 lakh for 10 years Cost of capital is 15%. The annuity factor for 15% for 10 years is 5.019. What is the Profitability Index of the project?			
		(i)	1.305	A	
		(ii)	3.846		
		(iii)	0.26		
		(iv)	0.7663		
	c.	A project is expected to yield an after tax cash inflow at the end of year 2 of Rs.150 lacs and has a cost of capital of 10%. Inflation is expected at 3% p.a. While computing the NPV of the project, this cash flow will be taken as the following:			
		(i)	$150/(1.03)^3/(1.1)^3$		
		(ii)	$150/(1.1)^3$		
		(iii)	$150/(1.03)x(1.1)^3$		
		(iv)	None of the above	A	
	d.	A project has a 10% discounted pay back of 2 years with annual after tax cash inflows commencing from year end 2 to 4 of Rs. 400 lakh. How much would have been the initial cash outlay which was fully made at the beginning of year 1?			
		(i)	Rs. 400 lacs		
		(ii)	Rs. 452 lacs	A	
		(iii)	Rs. 633.80 lacs		
		(iv)	Rs. 497.20 lacs		
	e.	A company has Rs. 7 crore available for investment. It has evaluated its options and has found that only four investment projects given below have positive NPV. All these investments are divisible and get proportional NPVs.			

Project	Initial Investment (Rs. crore)	NPV (Rs. crore)	PI
W	6.00	1.80	1.30
X	3.00	0.60	1.20
Y	2.00	0.50	1.25
Z	2.50	1.50	1.60

Which investment projects should be selected?

(i)	Project W in full and X in part	
(ii)	Project Z in full and W in part	A
(iii)	Project W in full and Z in part	
(iv)	Project Z and Y in full and X in part	

f. A certain mutual fund has a return of 17% with standard deviation of 3.5% and the Sharpe Ratio is 4. Then, what is the risk free rate?

(i)	12.5%	
(ii)	4%	
(iii)	3%	A
(iv)	7.5%	

g. Which of the following is/are objective/s of Cross Border leasing?

(i)	Reduction in overall cost of financing	
(ii)	Repossession	
(iii)	Security	
(iv)	All of the above	A

h. _____ _____ are quasi debt securities (unsecured) which can be converted into Depository Receipts or local shares at a fixed price after the minimum lock-in period.

(i)	Euro Convertible Bonds	A
(ii)	Euro Commercial Papers	
(iii)	Participating Notes	
(iv)	None of the above	

i. While plotting a graph with risk on X-axis and expected return on Y-axis, a line drawn with coordinates (0, Rf) and (β, Rm) is called

(i)	Security Market Line	A
(ii)	Characteristic Line	
(iii)	Capital Market Line	
(iv)	CAPM Line	

j. Which of the following is NOT a feature of Capital Market Line?

(i)	There is no unsystematic risk.	
(ii)	The individual portfolio exactly replicates the market portfolio in terms of risk and reward.	
(iii)	Estimates portfolio return based on market return.	
(iv)	Diversification can minimize the individual portfolio risk	A

k. Assume CAPM is correct, you are holding a stock, which has a beta of 1.5 and is currently in equilibrium. The required return on stock is 12% and the expected return on the market is 10%. Suddenly due to economic conditions, the expected return on the market increases by 20%. If nothing else changes, how much will this affect your required premium?

		(i)	20%		
		(ii)	-25%		
		(iii)	25%	A	
		(iv)	30%		
	l.	Rate of inflation = 5.1%, β = 0.85, Risk premium = 2.295%, Market return = 12%. What will be the real rate of return?			
		(i)	4.2%	A	
		(ii)	11.70%		
		(iii)	6%		
		(iv)	5.95%		
	m.	The value of beta of a security does not depend on			
		(i)	Risk free rate	A	
		(ii)	standard deviation of the market		
		(iii)	standard deviation of the security		
		(iv)	correlation between the security and the market		
	n.	A project has an equity Beta of 1.2 and debt Beta zero. It is going to be financed by a combination of 40% debt and 60% equity. What is the required rate of return on the project, if risk free rate is 8% and the market rate of return is 16%?			
		(i)	13.26%		
		(ii)	13.76%	A	
		(iii)	12.76%		
		(iv)	15.26%		
	o.	On March 1 a commodity's spot price is $60 and its August futures price is $59. On July 1 the spot price is $64 and the August futures price is $63.50. A company entered into futures contract on March 1 to hedge its purchase of the commodity on July 1. It closed out its position on July 1. What is the effective price (after taking account of hedging) paid by the company ?			
		(i)	59.50	A	
		(ii)	58.70		
		(iii)	60		
		(iv)	65.50		
	p.	What is the name of such a negotiable certificate issued by a company or the Government, entitles the holder to repayment of principal and interest where interest is paid periodically at predetermined intervals and the principal is repaid at a specified maturity date.			
		(i)	ADR		
		(ii)	GDR		
		(iii)	Bond	A	
		(iv)	Deep Discount Bond		
	q.	A wants to hedge its portfolio of shares worth Rs. 150 million using the Index futures. The contract size is 100 times the index. The index is currently quoted at 7500. The beta of the portfolio is 0.9. Consider the beta of the index as 1. The number of contracts to be traded is			
		(i)	18,000		
		(ii)	180	A	
		(iii)	22		
		(iv)	200		

	r.	The spot and 6 months forward rates of US dollar in relation to the rupee (Rs./$) are Rs. 74.532/75.4143 and Rs. 75.1278/76.2538 respectively. What will be the annualized forward margin (with respect to Ask price)?			
		(i)	2.23%	A	
		(ii)	2.25%		
		(iii)	3%		
		(iv)	3.5%		
	s.	From the following quotes of a bank, determine the rate at which Yen can be purchased with Rupees. Rs./£ Sterling: 75.31 – 33 £ Sterling/Dollar ($): 1.563 – 65 Dollar ($)/Yen (¥): 1.048/52 [per 100 Yen]			
		(i)	124.02	A	
		(ii)	142.02		
		(iii)	412.02		
		(iv)	214.02		
	t.	X is a negotiable instrument issued in US $ and issued by a US Depository Bank for the benefit of a non US company that wishes to raise money in the US. X is listed on NYSE and NASDAQ. Issue of X offers access to both institutional and retail markets in the US. Identify the following financial instruments.			
		(i)	GDR		
		(ii)	ADR	A	
		(iii)	Cryptocurrency		
		(iv)	bonds		
	Section B **You are required to answer all the questions. Each question carries 2 marks.** **Instructions: Each question is followed by a space where you are required to type your answer.**				**10 × 2 = 20 Marks**
2.	a.	D Ltd. intends to buy equipment. Quotes are obtained for two different makes A and B as given below: Equipment A: Cost (Rs. Million) 4.5; Estimate life (years) 10 Equipment B: Cost (Rs. Million) 6.00; Estimate life (years) 15 Ignoring the operations and maintenance costs which will be almost the same for A and B, which one would be cheaper? The company's cost of capital is 10% Given: PVIFA (10%, 10 yrs.) = 6.1446 and PVIFA (10%, 15 years) = 7.6061			
		Type your answer here Equipment A will be cheaper as the equivalent annual cost for equipment A is Rs.7,32,350 compared to the equipment B that cost Rs.7,88,841. **ROUGH WORK** Equivalent annual cost of Make – A = 45,00,000 ÷ 6.1446 = Rs.7,32,350 Equivalent annual cost of Make – B = 60,00,000 ÷ 7.6061 = Rs.7,88,841			
	b.	Annual Cost Savings Rs.4,00,000 Useful life 4 years Cost of the Project Rs.11,42,000			

		Calculate the Payback Period.	
		Type your answer here Payback Period = 2 years 11months	
	c.	A certain project is expected to generate annual and annual net cash inflows of Rs. 5,00,000 for four years. The cost of capital (real discount rate is 10%). Inflation rate is 5% p.a. What are the nominal cash flows and real cash flows of the second year's inflows which occur at the end of year 2?	
		Type your answer here Nominal cash flow: Rs. 5,00,000 Real cash flow at year end 2: (Rs5,00,000)/(1.05) = Rs. 4,76,190.47	
	d.	The following information is available for a mutual fund: Return 13% Risk (σ) 16% Beta (β)0.90 Risk Free Rate (f)10% Calculate Treynor's Ratio of the mutual fund.	
		Type your answer here 3.33	
	e.	**What is** Statutory Liquidity Ratio (SLR)?	
		Type your answer here Statutory Liquidity Ratio (SLR) is the share of net demand and time liabilities that banks must maintain in safe and liquid assets, such as government securities, cash and gold.	
	f.	If the covariance between the returns on a portfolio BC and returns on the market index is 25 and the variance of returns on the market index is 20, what will be the systematic risk of BC under the variance approach?	
		Type your answer here 31.25	
	g.	A portfolio contains three securities A, B and C Correlation coefficients (ρ) are ρAB = + 0.4, ρAC = + 0.75 and ρBC = - 0.4 Standard deviation are σA = 9, σB = 11 and σC = 6 Weights assigned are ωA = 0.2, ωB = 0.5 and ωC = 0.3 Find out the covariance of securities A and B.	
		Type your answer here 39.6	
	h.	You are given the following information of a stock: Strike Price 400 Current stock price Rs. 370 Risk free rate of interest 5% What is the Theoretical minimum price of a European 6 months' put option after six months?	
		Type your answer here 20.12%	
	i.	An Indian Company is planning to invest in the US. The annual rates of inflation are 8% in India and 3% in the USA. If the spot rate is currently Rs. 60.50/$, what spot rate can you expect after 5 years, assuming the inflation rates will remain the same over 5 years?	
		Type your answer here 76.68	
	j.	A call option at a strike price of Rs. 200 is selling at a premium of Rs. 24. At what share price on maturity will it break-even for the buyer of the option?	
		Type your answer here Rs. 224	

Section C
You are required to answer any 4 out of 6 questions in this section
Instructions: Each question is followed by a space where you are required to type your answer.

12 X 4 = 48 Marks

3. a. A firm has an investment proposal, requiring an outlay of Rs. 40,000. The investment proposal is expected to have 2 years' economic life with no salvage value. In year 1, there is a 0.4 probability that cash inflow after tax will be Rs. 25,000 and 0.6 probability that cash inflow after tax will be Rs. 30,000. The probabilities assigned to cash inflows after tax for the year 2 are as follows: 4+2+2

The Cash inflow year 1	Rs. 25,000		Rs. 30,000	
The Cash inflow year 2		Probability		Probability
	Rs. 12,000	0.2	Rs. 20,000	0.4
	Rs. 16,000	0.3	Rs. 25,000	0.5
	Rs. 25,000	0.5	Rs. 30,000	0.1

The Firm uses a 12% discount rate for this type of investment.

12% Discount factor: 1 year=0.8929 2 year = 0.7972

Compute the following:

(i) Joint probability and the expected NPV for the different paths
(ii) NPV for the best outcome and the probability of such occurrence
(iii) NPV for the worst outcome and the probability of such occurrence

Type your Answer Here

(i) Path 1= 0.08,648.88
Path 2=0.12, -590.64
Path 3=0.20, 450.60
Path 4=0.24, 655.44
Path 5=0.30, 2015.1
Path 6=0.06, 642.18

(ii) Best outcome: The best outcome will be path 6 when NPV is higher i.e. Rs.10,703(positive).
Probability of such occurrence: The probability of occurrence of this NPV is 6%

(iii) Net Present Value of the project if the worst outcome is realized: If the worst outcome is realized, the Net Present Value which the project will yield is Rs. 8,111(negative).
Probability of occurrence of such NPV: The probability of occurrence of such NPV is 8%

ROUGH WORK

Path	Cash inflow year 1*discount factor year 1 (Rs.)	Cash inflow year 2*discount factor year 2 (Rs.)	Total inflow	Cash outflow	NPV	Joint probability	Expected NPV
1	25000*.8929 =22323	12000*.7972 =9566	31889	40000	-8111	0.08	-648.88
2	25000*.8929 =22323	16000*.7972 =12755	35078	40000	-4922	0.12	-590.64
3	25000*.8929 =22323	25000*.7972 =19930	42253	40000	2253	0.20	450.60
4	30000*.8929 =26787	20000*.7972 =15944	42731	40000	2731	0.24	655.44
5	30000*.8929 =26787	25000*.7972 =19930	46717	40000	6717	0.30	2015.1
6	30000*.8929 =26787	30000*.7972 =23916	50703	40000	10703	0.06	642.18
						NPV	2523.8

b. A company is trying to choose between two investment proposals A and B. Project A has a standard deviation of Rs. 6,500 while Project B has a standard deviation of Rs. 7,200. The finance manager wishes to know which investment to choose, given each of the following combinations of the expected values: (2+2)

(i) Project A and Project B both have expected net present value of Rs. 15,000.

(ii) Project A has expected NPV of Rs. 18,000 while for Project B it is Rs. 22,000.

Type your Answer Here

Coefficient of Variation OF Project A = 0.361

Coefficient of Variation OF Project B = 0.327

Analysis - Investment in Project B should be chosen, since its Coefficient of Variation is lower.

ROUGH WORK

(i) If Project A and Project B both have expected net present value of Rs. 15,000, the Finance Manager should select Project A since its Standard Deviation is lesser than that of Project B. The lesser Standard Deviation represents lesser risk.

(ii) If Project A has expected NPV of Rs. 18,000 while for Project B is Rs. 22,000, then selection of Project will be done with the help of Coefficient of Variation. Coefficient of Variation = Standard Deviation/ Expected NPV Project A = 6500/18000 = 0.361 Project B = 7200/22000 = 0.327.

4. a. The NAV of a mutual fund having 4,00,000 units are Rs. 9.25 and 9.95 per unit at the beginning and end of the year respectively. (4+4)

(i) If the fund has to pay a dividend of Rs. 0.85 per unit and Rs. 0.70 as capital gain per unit what would be the annual returns expressed as a percentage?

(ii) If instead of paying dividend and capital gain, the scheme decided to reinvest the distributable amounts at an average NAV of Rs. 9.15 per unit, compute the revised returns and show how the balance sheet would appear after the reinvestment.

Type your answer here

(i) 24.32%

(ii) 24.32%

ROUGH WORK

Formula for computing Annual Returns:

Annual Return = (Closing Fund Assets – [Opening Assets Value) / Opening Asset Value] X 100

Value of Annual Returns:

= [(46,00,000 – 37,00,000) / 37,00,000] X 100

= 9,00,000 / 37,000,00] X 100 = 24.32%

Working Notes:

Computation of Values

Particulars	Computation	Rs.	Rs.
NAV on Closing Date	4,00,000 x 9.95		39,80,000
Dividend Payable	4,00,000 x 0.85	3,40,000	
Capital Gain to be distributed		2,80,000	
Total Distribution			6,20,000
Closing Fund Assets			46,00,000

(iii) Opening No. of Units:

Units added by reinvestment:

= Amount Reinvested / Re-investment Rate

= Rs. 6,20,000 / Rs. 9.15 = 67,759.56

Balance Sheet (After Reinvestment)

Liabilities	Rs.	Assets	Rs.
NAV on closing date		Fund Assets (Balancing Figure)	46,00,000
4,00,000 units @ 9.95	39,80,000		
67,759.56 units @ 9.15 per unit	6,20,000		
Total	46,00,000	Total	46,00,000

Revised Return:

Annual Return = (Closing Fund Assets – [Opening Assets Value) / Opening Asset Value] X 100

= [(46,00,000 – 37,00,000) / 37,00,000] X 100

= 9,00,000 / 37,000,00] X 100 = 24.32%

The return is same.

b. List four benefits of commodity futures markets. 4

Type your Answer Here

(i) Price Discovery: Based on inputs regarding specific market information, the demand and supply equilibrium, weather forecasts, expert views and comments, inflation rates, Government policies, market dynamics, hopes and fears, buyers and sellers conduct trading at futures exchanges. This transforms into continuous price discovery mechanism. The execution of trade between buyers and sellers leads to assessment of fair value of a particular commodity that is immediately disseminated on the trading terminal.

(ii) Price Risk Management: Hedging is the most common method of price risk management. It is strategy of offering price risk that is inherent in spot market by taking an equal but opposite

position in the futures market. Futures markets are used as a mode by hedgers to protect their business from adverse price change. Hedging benefits who are involved in trading of commodities like farmers, processors, merchandisers, manufacturers, exporters, importers etc.

(iii) Improved product quality: The existence of warehouses for facilitating delivery with grading facilities along with other related benefits provides a very strong reason to upgrade and enhance the quality of the commodity to grade that is acceptable by the exchange. It ensures uniform standardization of commodity trade, including the terms of quality standard: the quality certificates that are issued by the exchange certified warehouses have the potential to become the norm for physical trade.

(iv) Import- Export competitiveness: The exporters can hedge their price risk and improve their competitiveness by making use of futures market. A majority of traders which are involved in physical trade internationally intend to buy forwards. The purchases made from the physical market might expose them to the risk of price risk resulting to losses. The existence of futures market would allow the exporters to hedge their proposed purchase by temporarily substituting for actual purchase till the time is ripe to buy in physical market. In the absence of futures market it will be meticulous, time consuming and costly physical transactions.

5. a. Anil is interested to construct a portfolio of Securities A and B. He has collected the following information about the proposed investment. — 4 +4

Particulars	A	B
Expected Return	15%	20%
σ	10%	12%

Coefficient of correlation (r) between A and B is 9

Anil wants to constitute only 2 portfolios of A and B as follows:

(i) 50% funds invested in A and 50% in B and

(ii) 25% funds invested in A and 75% funds invested in B

Estimate the following:

(i) Expected Return under Case (i)

(ii) Expected Return under Case (ii)

(iii) Risk factor associated with portfolio (i)

(iv) Risk factor associated with portfolio (ii)

Type your answer here:

(i) Expected Return under Case (i)-17.5

(ii) Expected Return under Case (ii)=18.75

(iii) Risk factor associated with portfolio (i) 8.14

(iv) Risk factor associated with portfolio (ii)9.56

ROUGH WORK

Probability of A	Return of A	Probability of B	Return of B	Expected return of portfolio
0.50	0.15	0.50	0.20	0.50 x 0.15 + 0.50 x 0.20 =17.5%

Probability of A	Return of A	Probability of B	Return of B	Expected return of portfolio
0.25	0.15	0.75	0.20	0.25 x 0.15 + 0.75 x 0.20 =18.75%

(iii) Risk factor associated with portfolio (i)

$\sqrt{(\sigma A^2 \times wA^2)+(\sigma B^2 \times WB^2)+2(\sigma A \times Wa \times \sigma B \times wB \times r)}$

$= \sqrt{(10^2 \times 0.50^2) + (12^2 \times 0.50^2)+2(10 \times 0.50 \times 12 \times 0.50 \times 0.09)}$

$= \sqrt{25+36+5.4}$

$= 8.14\%$

(iv) Risk factor associated with portfolio (ii)

$\sqrt{(\sigma A^2 \times wA^2)+(\sigma B^2 \times WB^2)+2(\sigma A \times Wa \times \sigma B \times wB \times r)}$

$= \sqrt{(10^2 \times 0.25^2) + (12^2 \times 0.75^2)+2(10 \times 0.25 \times 12 \times 0.75 \times 0.09)}$

$= \sqrt{6.25+81+4.05}$

$= 9.56\%$

b. As an investment manager, you are given the following information: 2+2

Investment	Initial price (Rs.)	Dividend	Market price	Beta
Equity shares of:				
A Ltd.	70	5	140	0.8
B Ltd.	80	5	150	0.7
C Ltd.	90	5	270	0.5
Govt. of India Bonds	1000	160	1010	0.95

Risk free return may be taken at 16%.

You are required to calculate:

(a) Expected rate of return of portfolio using CAPM.

(b) Average return of Portfolio.

Type your answer here

(a) Expected rate of return on portfolio=40.73%

(b) Simple average return of portfolio =34.24%

ROUGH WORK

Investment	Amount	Market price	Capital Gain	Dividend	Total
Equity shares of:					
A Ltd.	70	140	70	5	75
B Ltd.	80	150	70	5	75
C Ltd.	90	270	180	5	185
Govt. of India Bonds	1000	1010	10	160	170
Total	1,240	1,570	330	175	505

(a) Expected rate of return on portfolio = (505/1240) × 100 = 40.73%

CAPM Model E[RP]

= RM + β(RM-RF)

A Ltd. =16 + 0.8 (40.73-16) = 35.78%

B Ltd. = 16 + 0.7 (40.73-16) = 33.31%

C Ltd. = 16 + 0.5 (40.73-16) = 28.37%

Govt. of India Bonds = 16+0.95(40.73-16) = 39.49%

(b) Simple average return of portfolio

= 935.78 + 33.31 + 28.37 + 39.49)/4 = 34.24%

Average of Beta = (0.80 + 0.70 + 0.50 + 0.95)/4 = 0.7375

6. a. The following information is given: 4+4

Current Stock Price	Rs. 190
Strike Price	Rs. 210
Price of 6 months' European Put Option	Rs. 10
Risk free interest rate p.a.	5%

(i) Calculate the theoretical minimum price of the put option at the end of 6 months.

(ii) Find out the gain if the price on the expiration day is:

A. Rs. 200

B. Rs. 220.

Type your answer here

(i) 14.83

(ii) 4.94, 14.94

ROUGH WORK

Formula: Theoretical Minimum Price: Present value of Exercise price - Current stock price

Computation:

= 210 × e^-rt - 190

= 210 × e^-0.05×0.5 - 190

= 210 × e^-0.025 – 190

= 210 × 0.9753 - 190

= 204.813 - 190

= 14.813

Recommended Strategy:

Since the value of the put option is more than the price of the put option, the recommended action is buy put option.

Arbitrage Process:

Particulars	Workings	Rs.
Borrow for spot purchase of stock and the put option	190 + 10	200
Amount including interest (continuous compounding)	200 x e^0.025 = 200 x 1.02532	205.06
(1) Price on exercise day is 200 Action : Exercise put option, sell for 210		210
Gain after repayment of borrowal	210-205.06	4.94
(2) Price on exercise day is 220 Action: Let the put lapse. Sell in spot market and get 220		220
Gain after repayment of borrowal	220-205.06	14.94

Expected Result:

		Thus the minimum gain is 4.94 even if the spot price on exercise day falls below the strike price. If the price rises, the gain would be 4.94 + (difference between the spot price on exercise day and 210).	
	b.	Mr. B decides to purchase Two Infosys call options which have a delta of 0.75 each. He also plans to simultaneously hedge by buying Four Infosys Put Options which has a positive delta of 0.375. What is the net delta of each position? What is the net delta of overall position? Is he fully hedged?	4
		Type your answer here Delta of Infosys for Call Position = +1.5 Delta of Infosys for Put Position = -1.5 Net Delta of entire position = 0 Since net delta of the entire position is zero, Mr. B is perfectly hedged. This means that whatever losses he might incur the call position/put position would be compensated exactly in the put/call position. **ROUGH WORK** Delta of long calls and short puts are positive and that of short calls and long puts are negative. Deltas for call options are always positive, which means that a long call should be hedged with a short call position in the underlying asset and vice-versa. Deltas for put options are always negative which means that a long put should be hedged with a long position in the underlying asset and vice-versa. Delta is between 0 and +1 for calls and between 0 and -1 for puts. Delta of Infosys for Call Position: (+2) x (+0.75)=+1.5 Delta of Infosys for Put Position: (+4) x (-0.375)=−1.5 Net Delta of entire position : +1.5 − 1.5 =0	
7.	a.-	A company has estimated the following demand level of its product: Sales volume (units) | 10000 | 12000 | 14000 | 16000 | 18000 Probability | 0.10 | 0.15 | 0.25 | 0.30 | 0.20 It has assumed that the sales price of Rs.6 per unit, marginal cost Rs.3.50 per unit, and fixed costs Rs. 34,000. What is the probability the at which company will break-even in the period?	3
		Type your answer here The probability that sales will equal or exceed 13,600 units is 0.75 or 75%. **ROUGH WORK** To break-even, the company must earn enough total contribution to cover its fixed costs. The contribution to fixed costs and profit is Rs.2.50 per unit (i.e. 6 - 3.5). To break-even, sales must be as follows: Contribution required/ Contribution per unit = Rs. 34,000/Rs. 2.50 = 13600 units The probability that sales will equal or exceed 13,600 units is the probability that sales will be 14,000, 16,000 or 18,000 units, which is (0.25 - 0.30 + 0.20) = 0.75 or 75%	
	b.	X Ltd., an Indian Exporter has an ongoing order from USA for 2000 pieces per month at a price of $100 per piece. To execute the order, the exporter has to import Yen 6000 worth of material per piece. Labour costs are Rs.350 per piece while other variable overheads add upto Rs. 700 per piece. The exchange rates are currently Rs.35/$ and Yen 120/$. Assuming that the order will be executed after 3 months and payment is obtained immediately on shipment of goods, calculate the loss/gain due to transaction exposure if the exchange rates change to Rs.36/$ and Yen 110/$.	9

Type your answer here

(a) Profit at the existing level of exchange rates=Rs. 14,00,000

(b) After the exchange rate change Rs. Rs.1281,818

(c) Loss due to transaction exposure = Rs.1400,000 – Rs.1281,818 = Rs.118,818

ROUGH WORK

Revenues	(2000 x 100x35)	= Rs. 70,00,000	
Less: Costs			
Material:	(2000)x [(6000)x(35/120)]	Rs. 35,00,000	
Labour	(2000)x(350)	Rs. 7,00,000	
Overhead	(2000)x(700)	= Rs.14,00,000	= Rs.56,00,000
Profit			= Rs.14,00,000

(b) After the exchange rate changes

Revenues	= (2000 x 100 x 36)	= Rs.7200,000	
Less: Costs			
Material:	(2000)x[(6000) x (35/110)]	Rs.3818,182	
Labour	(2000) x (350)	= Rs.700,000	
Overhead	(2000) x (700) =	= Rs.1400,000	Rs.5918,182
Profit			Rs.1281,818

8. **You are required write Short Notes on any 4 out of 5 questions.** **4 × 3 = 12 Marks**

a. Need for social cost benefit analysis

Type your answer here

(i) Monetary cost benefit analysis fails to consider the external effects of a project, which may be positive like development of infrastructure or negative.

(ii) Taxes and subsidies are monetary costs and gains, but these are only transfer payments from social point of view and therefore irrelevant.

(iii) SCBA benefits the poorer sections by the re distribution effect of benefits of a project.

b. Any three limitations of credit rating

Type your answer here

Credit rating is a very important indicator for prudence but it suffers from certain limitations. Some of the limitations are:

(i) Conflict of Interest – The rating agency collects fees from the entity it rates leading to a conflict of interest. Since the rating market is very competitive, there is a distant possibility of such conflict entering into the rating system.

(ii) Industry Specific rather than Company Specific –Downgrades are linked to industry rather than company performance. Agencies give importance to macro aspects and not to micro ones; overreact to existing conditions which come from optimistic / pessimistic views arising out of up / down turns. At times, value judgments are not ruled out.

(iii) Rating Changes – Ratings given to instruments can change over a period of time. They have to be kept under constant watch. Downgrading of an instrument may not be timely enough to keep investors educated over such matters.

(iv) Corporate Governance Issues – Special attention is paid to:

- Rating agencies getting more of their revenues from a single service or group.
- Rating agencies enjoying a dominant market position. They may engage in aggressive competitive practices by refusing to rate a collateralized / securitized instrument or compel an issuer to pay for services rendered.

		• Greater transparency in the rating process viz. in the disclosure of assumptions leading to a specific public rating. (v) Basis of Rating – Ratings are based on 'point of time' concept rather than on 'period of time' concept and thus do not provide a dynamic assessment. (vi) Cost Benefit Analysis – Since rating is mandatory, it becomes essential for entities to get themselves rated without carrying out cost benefit analysis.	
	c.	Price based auction in the securities market.	
		Type your answer here In this type of auction, RBI announces the issue size or notified amount and the tenor of the paper to be auctioned, as well as the coupon rate. The bidders submit bids in terms of the price. This method of auction is normally used in case of reissue of existing Government Securities. Bids at price lower than the cut off price are rejected and bids higher than the cut off price are accepted. Price Based auction leads to a better price discovery then the Yield based auction.	
	d.	Any three participants in Foreign Exchange Market	
		Type your answer here (i) Commercial companies: An important part of this market comes from the financial activities of companies seeking foreign exchange to pay for goods or services. (ii) Central banks: National central banks play an important role in the foreign exchange markets. They try to control the money supply, inflation, and/or interest rates and often have official or unofficial target rates for their currencies. (iii) Hedge funds as speculators: About 70% to 90%of the foreign exchange transactions are speculative. In other words, the person or institution that buys or sells the currency has no plan to actually take delivery of the currency in the end; rather, they are solely speculating on the movement of that particular currency. They control billions of dollars of equity and may borrow billions more, and thus may overwhelm intervention by central banks to support almost any currency, if the economic fundamentals are in the hedge funds' favor.	
	e.	Prepayment Risk	
		Type your answer here Prepayment is the event that a borrower prepays the loan prior to the scheduled repayment date. Prepayment takes place when the borrowers can benefit from it, for example, when the borrowers can refinance the loan at a lower interest rate from another lender. Prepayments result in loss of future interest collections because the loan is paid back pre-maturely and can be harmful to the loan-backed securities, especially for long term securities. A second, and maybe more important consequence of prepayments, is the impudence of un-scheduled prepayment of principal that will be distributed among the securities according to the priority of payments, reducing the outstanding principal amount, and thereby affecting their weighted average life.	
Section D **You are required to answer all the questions in this section** **Instructions: Each question is followed by a space where you are required to type your answer.**			**1 x 12 =12 Marks**
9.		Mr. A got a job in the year 1996 in a MNC, just after the market liberalization took place in India. As a result there are many job opportunities, he was a young, dynamic person who had done his graduation from Delhi University in the year 1992, thereafter done his Masters from the same university in Economics in the year 1994. Thereafter he was doing some freelancing jobs before getting this job in the MNC. He is the only child of their parents, so he is also responsible for their needs and wellbeing. He married in 2005 and his wife is a working lady in a hospital as an	

administrative staff. Whatever the financial literacy they have and with the options that are available in the market they have invested mostly in the secured funds like bank deposits, gold, insurance etc.

As they are getting old along with their parents and increased expenses of the household and their daughter's education they are looking for somewhere else to invest where from they can earn more income. Usually they invest in safe assets like fixed deposit and some amount in recurring deposit. Although these are safe, they do not generate a good return. Being senior citizens they maximum get a benefit of 0.5% extra. Yet it percentage never computes to 10% also in the long run.

To avail tax benefit they have been investing every year to the tune of 20% of their income in Public Provident Fund. This gives them tax exemption on investment, interest and redemption. They have not closed it yet and continue to keep investing.

With medical emergencies, rising livelihood expenses and inflation, it is hard to keep it when the money is not working as hard you are. He recently started devoting a major part of his time to read and understand about the share market. He wants to make an informed investment rather than a rash whim.

They got to know about the investment in share markets but they fear to lose their principal investment when markets crash, as investment in securities are subject to market risk and it also requires a lump sum amount to invest. For these reasons they could not invest in securities.

Soon after he put in certain fund in infrastructure bonds. But with time he has been steady in understanding the stock market and has been regularly checking the Sensex and following the stocks he understood and read about.

Later in the 2010, they purchased some shares from the stock market. Since these were large cap securities, they have been giving them a good return. After experiencing this they purchased more shares from different companies for the investment purpose. This confidence led to further investments with the hope of more returns in the future.

With those accumulated profits they wanted to make a portfolio which will reduce the risk and maximize the return in the best possible way. So over the years, he withdrew certain sum of money from various investments and also accumulated sums from the matured fixed deposits. Instead of putting them back in such traditional forms of investment, this time he accumulated a sum of Rs. 13 lakhs. He carefully studied the fundamentals of these companies and constructed a portfolio.

Following is his portfolio with Beta (β)

Security	No. of shares	Market price per share (Rs.)	Beta (β)
ADU	12,000	40	0.9
DVU	6,000	20	1.0
NDU	10,000	25	1.5
SVU	2,000	225	1.2

You are required to answer the following questions:

	a.	What is the Beta of the portfolio?	3

Type your Answer here

Beta of the portfolio = 1.13

Security	No. of Shares	Market Price/share (Rs.)	Beta (*B*)	Market Value (Rs.)	Product (Rs.)
ADU	12,000	40	0.9	4,80,000	4,32,000
DVU	6,000	20	1.0	1,20,000	1,20,000
NDU	10,000	25	1.5	2,50,000	3,75,000
SVU	2,000	225	1.2	4,50,000	5,40,000
				13,00,000	14,67,000

ROUGH WORK

Formula of Beta (β):

=Sum of Product of Individual Market Value and Individual Beta / Total Market Value

= Rs. 14,67,000 / 13,00,000 = 1.13

b. If the Portfolio Manager seeks to reduce the portfolio Beta to 0.8, how much risk- free investment should he bring in? Consider that he disposes the riskier securities first and replaces them with risk free investment. 4

Type your Answer here

Total value of risk free investment to be brought in = Rs. 2,93,425

ROUGH WORK

Objective: Reduce *B* to 0.8

Method to be adopted:

Required Value = 0.8 × Rs. 13,00,000 = Rs. 10,40,000

Difference in value = Rs. 14,67,000 – Rs. 10,40,000 = Rs. 4,27,000

Rs. 4,27,000 should be eliminated from product column (Value).

NDU with market value of Rs. 3,75,000 has highest *B* should to be replaced first.

Remaining value Rs. 52,000 (i.e. Rs. 4,27,000 – Rs. 3,75,000)

SVU with next highest *B* should be considered for the amount of Rs. 52,000 (Product)

Value of shares of SVU to be replaced = Remaining Product Value / *B* of SVU

= 52,000/1.2 = Rs. 43,334

No. of Share of SVU to be replaced = 43,334/225 = 192.5 or 193.

Total value of risk free investment to be brought in = Rs. [2,50,000 + (193 shares × 225)]

= Rs. 2,50,000 + 43,425) = Rs. 2,93,425

c. What will be the total Market Value of the Revised Portfolio? 2

Type your Answer here

Total Market Value of the revised portfolio=Rs.13,00,000

ROUGH WORK

Security	No. of Shares	MPS	MV
ADU	12,000	40	4,80,000
DVU	6,000	20	1,20,000
SVU	1,807	225	4,06,575
Risk free securities			2,93,425
Total Market Value			13,00,000

	d.	Calculate the Beta (β) of the revised portfolio.	3

Type your answer here

Beta of the Revised Portfolio: 0.8

ROUGH WORK

Computation of Beta (β) of the Revised Portfolio

Security	MV	Beta	Product
ADU	4,80,000	0.9	4,32,000
DVU	1,20,000	1.0	1,20,000
SVU	4,06,575	1.2	4,87,890
Risk free securities	2,93,425	0	0
	13,00,000		10,39,890

Beta (β)=Sum of Product of Individual Market Value and Individual Beta / Total Market Value
= 10,39,890 / 13,00,000 = 0.8

END