FINAL EXAMINATION

December 2023

P-14(SFM)
Syllabus 2016

STRATEGIC FINANCIAL MANAGEMENT

Time Allowed: 3 Hours

Full Marks: 100

The figures in the margin on the right side indicate full marks.

All working must form part of the answer.

Wherever necessary, suitable assumptions may be made and clearly stated in the answer.

No present value or other statistical table will be provided in additional to this question paper. Candidates may use the values tabulated at the relevant portion of this question paper for computation of answers where required.

This Paper contains two sections, A & B. Section A is compulsory and contain questions 1 of 20 Marks.

Section B contains question 2 to 8, each carrying 16 marks.

Answer any five questions from Section B.

Section – A

Answer all the questions. Each question carries two marks.

1. (a) Choose the correct option from the four alternatives given (1 mark is for the correct choice and 1 mark for justification/workings.) (You may present only the Roman Numeral, your choice and the reason/workings, without copying the question.)

2×10=20

(i) MS. RATRI, a prospective investor has collected the following information pertaining to two securities A and B.

Particulars	Security A	Security B
Expected Return %	15	18
Standard Deviation of return %	18	22
Beta	0.90	1.40

Variance of returns on the Market Index is 225(%)^2. The correlation co-efficient between the returns on securities A and B is 0.75. The systematic Risk of a portfolio consisting of these two securities in equal proportions is

(A) 24.63 (%)^2

(B) 125.78 (%)^2

(C) 297.56 (%)^2

(D) None of (A) , (B) and (C)

(ii) The current market price of an equity share of THOMAS LTD., is ₹ 500. Within a period of 3 months, the maximum and minimum price of it is expected to be ₹ 600 and ₹ 300 respectively. What should be the value of a 3 months call option under "Risk Neutral" method at the strike rate of ₹ 550 if the risk free rate of interest to 8% p.a.? [Given $e^{0.02} = 1.0202$]

(A) ₹ 23.34

(B) ₹ 34.31

(C) ₹ 43.21

(D) None of the above

(iii) MS. MOU invested ₹ 50,000 in a mutual fund scheme – SX on 01.04.2022. The capital gain and dividend for the year ₹ 3 per unit which were reinvested at the year end (31.03.2023) NAV of ₹ 25. Mou had total units of 2,800 as on 31.03.2023. What was the NAV as on 01.04.2022?

(A) ₹ 10

(B) ₹ 15

(C) ₹ 20

(D) None of the above

(iv) MR. BUA is a forex dealer in India. Rates of Rupee and Euro in the International Market rate are US $ 0.0124688 and US $ 1.092694 respectively. What will be his direct quote of (€) euro to his customer?

(A) ₹ 88.91

(B) ₹ 88.32

(C) ₹ 87.63

(D) ₹ 80.90

(v) NOBON Ltd., has been evaluating investment in a project which will require ₹ 40 lakh capital expenditure on a new machinery. The Company expects the capital investment to provide annual Cash flows of ₹ 9 lakh per year after taxes indefinitely. The business risk of the investment decision requires a 15 per cent discount rate. The base case NPV for NOBON Ltd's project will be

(A) ₹ 25 lakh

(B) ₹ 20 lakh

(C) ₹ 18.50 lakh

(D) None of the above

(vi) The Stock of ANOS Ltd. (FV ₹ 10) quotes ₹ 500 on NSE and the 3 months future price quotes at ₹ 510. The borrowing rate is given as 15% p.a. What would be the theoretical price of 3 months ANOS Ltd. future if the expected annual dividend yield is 25% p.a. payable before expiry?

(A) ₹ 540.50

(B) ₹ 516.25

(C) ₹ 510.50

(D) Insufficient data

(vii) The Portfolio composition of Mr. SANU is given below:

	(Amount in ₹ lakh)
Equity	120
Cash/Cash equivalents	40
Total	**160**

The beta of the equity portion of the Portfolio is 0.85 and the current NIFTY future is at 4261.5. The multiple attached to NIFTY future is 100. If Mr. SANU purchases 23 future contracts, his Portfolio Beta will be

(A) 1.05

(B) 1.12

(C) 1.20

(D) 1.25

(viii) Buying a call and put with the same expiry date, on the same stock with a different strike price is a

(A) Strangle

(B) Straddle

(C) Strap

(D) Strip

(ix) P and Q are two mutually exclusive projects. P has a higher initial fixed cost and will make a profit of ₹ 10,000 for a high sales volume and a loss of ₹ 4,000 for a low sales volume. For Q, the corresponding amounts would be a profit of ₹ 7,000 or a profit of ₹ 2,000. The probability of high sales volume is 60%. The expected value of perfect information is

(A) ₹ 9,000

(B) ₹ 6,800

(C) ₹ 12,600

(D) ₹ 10,200

(x) Which one of the following is true?

(A) Systematic risk can be minimized by investing in many sectors like banking, real estate and food products.

(B) Government securities are free from interest rate risk.

(C) The market rewards an investor in proportion to the unsystematic risk that he is willing to take.

(D) Systematic risk is independent of the industry to which a security belongs.

Section-B

Answer *any five* questions.

Each question carries 16 marks. 16×5=80

2. (a) Soneta Engineering Ltd. is considering to replace or repair a particular machine due to broken down. Last year the company incurred costing ₹ 2,00,000 to run and maintain. These costs have been increasing in real terms in recent years with the age of the machine. A further useful life of 5 years is expected, if immediate repairs of ₹ 1,90,000 are carried out. If the machine is not repaired it can be sold immediately to realize about ₹ 50,000 (Ignore loss/gain on such disposal).

Alternatively, the company can buy a new machine for ₹ 4,90,000 with an expected life of 10 years with no salvage value after providing depreciation on straight line basis. In this case, running and maintenance costs will reduce to ₹ 1,40,000 each year and are not expected to increase much in real term for a few years at least.

Soneta Engineering Ltd. expects a normal return of 10% per annum after tax as a minimum requirement on any new investment. Corporate tax rate is 50% and the company follows straight line depreciation method on fixed assets for tax purposes also.

(Given cumulative present value of ₹ 1 p.a. at 10 % for 5 years ₹ 3.791, 10 years ₹ 6.145)

***Required*:**

(i) **Evaluate** the existing proposal of repairing of the machine.

(ii) **Assess** the alternative proposal to buy the new machine.

(iii) **Which** alternative should the company choose? 8

(b) **Shivam Limited** is considering two mutually exclusive projects A and B. Project A costs ₹ 36,000 and project B cost ₹ 30,000. You have been given below the net present value probability distribution for each project.

Project A		**Project B**	
NPV estimates (₹)	**Probability**	**NPV estimates (₹)**	**Probability**
15,000	0.2	15,000	0.1
12,000	0.3	12,000	0.4
6,000	0.3	6,000	0.4
3,000	0.2	3,000	0.1

***Required* :**

(i) **Compute** the expected net present value of projects A and B.

(ii) **Assess** the risk attached to each project, i.e. standard deviation of each probability distribution.

(iii) **Identify** the profitability index of each projects.

(iv) **Which** project do you recommend? State with reasons. 8

3. (a) MR. KARUN has invested in three Mutual Fund schemes as per details below:

	Scheme A	Scheme B	Scheme C
Date of Investment	**01-12-2022**	**01-01-2023**	**01-03-2023**
Amount of Investment	₹ 5,00,000	₹10,00,000	₹ 5,00,000
Net Asest Value at entry date	₹ 10.50	₹ 10.00	₹ 10.00
Dividend received up to 31-03-2023	₹ 10,000	₹ 16,000	₹ 8,000
NAV as at 31.3.2023	₹ 10.40	₹ 10.10	₹ 9.80

***Required*:**

(i) **Assess** the effective yield on per annum basis in respect of the three Schemes to Mr. Karun upto 31.03.2023 taking the year consisting of 365 days.

(ii) **Provide** a brief comment on the course of action he should take for further period. (Calculation should be upto three decimal points.) 8

(b) The following are the details of three Mutual Funds of ABOX.M Ltd.

	Growth Fund	Balanced Fund	Regular Fund	Market
Average Return (%)	7	6	5	9
Variance	92.16	54.76	40.96	57.76
Coefficient of Determination	0.3025	0.6561	0.9604	

The yield on 182 days Treasury Bill is 9 per cent per annum

***Required*:**

(i) **Rank** the funds as per Sharp's measure.

(ii) **Rank** the funds as per Treynor's measure.

(iii) **Compare** the performance with the market. 8

4. (a) Mr. Rudson, a manager has a portfolio (with beta value 1) of ₹ 50 lacs consisting of 80 % in stocks and the rest in cash. He wishes to use index futures to alter his beta. Assuming that the current index is 4,700 and the index futures (lot of 200) is quoted at ₹ 4,800.

***Required*:**

Explain his strategy if he wishes to

(i) Increase the portfolio beta to 1.60.

(ii) Decrease the portfolio beta to 0.8.

If he desired the above beta values, what should he do if he may include G-sec in his portfolio to alter that beta instead of futures? 8

(b) **Ms. Darna** an analyst of VKC Securities Ltd., is evaluating the prospects of investing in two companies Sontex Ltd. and Dentex Ltd. The distribution of Conditional Return and explicit probability distribution of Stocks of Sontex Ltd. and Dentex Ltd. are as follows :

Probability	Conditional Returns (in %)	
	Sontex Ltd.	Dentex Ltd.
0.10	60	5
0.20	50	15
0.40	40	25
0.20	30	35
0.10	20	50

Required:

(i) **Analyze** the expected returns, standard deviations of returns for both the stocks and correlation co-efficient between these two stocks.

(ii) **Compare** the risks and returns of these two stocks with a portfolio of these stocks in equal proportions and **comment** thereon. 8

5. (a) **Max Ltd.**, a manufacturing company has the following information about two types of raw materials used for manufacturing of its products.

Particulars	Material X	Material Y
Current market price (i.e. spot price)	₹ 75 per kg	₹ 85 per kg
3 months Futures Contract price	₹ 38.50	₹ 44.60
Carrying cost	4% p.a. continuous compounding	₹ 100 per quintal per quarter payable after 2 months
Contract size	500 kgs. per contact	500 kgs. per contract

Risk free interest rate is at 12% per annum.

***Required*:**

Evaluate the course of action if the company enters into futures contract for Material X and Y.

[Given, $e^{0.04} = 1.0408$; $e^{0.02} = 1.0202$; $e^{0.03} = 1.03045$] 8

(b) MR. BISAN had purchased a 3 month call option on the equity shares of Sont Ltd. for a premium of ₹ 30 each, the current market of the share is ₹ 500 and the exercise price is ₹ 530. He expects the price range between ₹ 480 to 580.

The expected share price of Sont Ltd. and related probability is given below:

Expected Price (₹)	480	500	520	540	560	580
	0.10	0.15	0.05	0.35	0.20	0.15

***Required*:**

Analyze the following:

(i) Expected share price at the end of 3 months.

(ii) Value of call option at the end of 3 months, if the exercise price prevails.

(iii) In case the option is held to its maturity, what will be the expected value of the call option?

(iv) **Assess** the price of the shares quoted at the stock exchange to get the value of the call option as competed in (iii) above. 8

6. (a) ZNB Ltd. has taken a six month loan from its foreign Collaborator for USD 3 millions. Interest is payable on maturity @ LIBOR Plus 1 %. The following information is available.

Spot Rate	INR / USD	80.5275
6 months Forward Rate	INR / USD	80.4575
6 months LIBOR for USD	2% (p.a.)	
6 months LIBOR for INR	6% (p.a.)	

***Required*:**

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

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

(iii) **Mention** your opinion if spot rate of INR / USD is 80.4275. 8

(b) **Rongal Ltd.** an Indian Company exports cotton garments to U.S. during the year 2022-23. It has exported 120000 pieces of garments at an average price of $ 20 per piece. Average cost of producing each piece is ₹ 550 for the company. The elasticity of demand for the company's product in the U.S market is 1.5.

Prevailing Rupee-Dollar exchange rate during the last year was ₹ 80. In the current year Rupee-Dollar exchange rate is expected to depreciate to ₹ 81.

***Required*:**

(i) **Assess** the change in profit due to the transaction exposure.

(ii) **Assess** the change in profit due to economic exposure, if the company passes the benefit of depreciation on to buyer. 4+4=8

7. (a) RONB, a Company is considering an option to purchase a certain machine versus leasing it. The cost of the machine is ₹ 21,20,000 with a useful life of 5 years after which it will fetch a scrap value of ₹ 1,20,000. Depreciation will be the purchase value less scrap, written off uniformly each year. Maintenance expenses will be ₹ 40,000 every year. If leased, the lessor will maintain the machine and collect annual year end lease rents of ₹ 7,20,000. Assume that corporate tax is 25% for business and long term gains. The capital of the company consist of 80% equity (with cost 11%) and 20% debt (borrowed at an interest rate of 8% p.a). Assume cash flows occur at year ends.

***Required*:**

Analyze the purchase Vs lease option to evaluate the proposal. Show calculations to the nearest rupee.

Given:	P.V. Factor		Annuity Factor	
Find of YR Rate	4	5	4	5
10 %	0.683	0.621	3.170	3.791
10.8 %	0.664	0.599	3.116	3.715
11.20 %	0.654	0.588	3.089	3.677
12 %	0.636	0.567	3.037	3.605

8

(b) MR. RAJON, an investor is interested to construct a portfolio of securities ALFA and GAMA. He has collected the following information about the proposed investment.

	ALFA	GAMA
Expected return	20%	25%
σ (Risk)	12%	16%

Co-efficient of Correlation (r) between ALFA and GAMA is 0.16. He wants to constitute only 3 portfolios of ALFA and GAMA as follows:

(1) All funds invested in ALFA

(2) 50 % of funds in ALFA and 50% in GAMA

(3) 75% of funds in ALFA and 25% in GAMA

***Required*:**

Analyze the following:

(i) Expected return under different portfolios

(ii) Risk factor associated with these portfolios

(iii) Which portfolio is the best from the view – point of risk?

(iv) Which portfolio is the best from the view – point of return? 2×4=8

8. Answer *any four* out of the following five questions: 4×4=16

(a) **State** the features of the call money market on the following aspects :

(i) Purpose

(ii) Security

(iii) Call rate

(iv) Lending (Name four lenders)

(b) **Distinguish** between commodity futures and financial futures with respect to the following aspects:

(i) Valuation

(ii) Delivery and Settlement

(c) **Illustrate** the types of Liquidity Risk.

(d) **Enumerate** four features of Foreign Currency Convertible Bonds. (FCCB)

(e) **Write down** the main activities of Reserve Bank of India (RBI).

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