FINAL EXAMINATION

June 2024 *P–14(SFM)*

Syllabus 2022

STRATEGIC FINANCIAL MANAGEMENT

Time Allowed: 3 Hours Full Marks: 100

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

All Sections are compulsory. Each Section contains instructions regarding the number of questions to be answered within the Section.

All working notes must form part of the answer.

Whenever necessary, candidates may make appropriate assumptions and clearly state them in the respective answer.

No present value factor table or other statistical table will be given in additional to this question paper. Candidates may use the values tabulated at the relevant portions of this question paper.

This paper contains two Sections A and B. Section A is Compulsory and contains question 1 of 30 marks.

Section B contains questions 2 to 8 of 14 marks each.

SECTION–A

Answer all the questions. Each question carries two marks.

1. Choose the correct option from the four alternatives given: 2×15=30

(i) A Project of ZOBM Ltd. requires an initial investment of ₹ 100 Lakh and generates annual Cash inflows of ₹ 29.85 Lakh for five years. If the risk-free rate of discount is 10% and the premium for the normal risk of the Company is 3%, what is the maximum premium for abnormal risk that can be earned on this project (using IRR method) ?

[Given : PVIFA (13% 5 yrs.) = 3.52, PVIFA (14%, 5 yrs.) = 3.43 and PVIFA (15%, 5 yrs.) = 3.35]

(A) 0 %

(B) 2 %

(C) 4 %

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

(ii) EZAN Ltd. has an ROE of 18% and a ploughback ratio of 50%. The Market Capitalization rate is 13%. If the Coming year's earnings are expected to be ₹ 4 per share, at what price EZAN's share should sell in 3 years ?

(A) ₹ 75.10

(B) ₹ 64.75

(C) ₹ 60.50

(D) None of the above

(iii) The expected return of a Portfolio ZON is 15%, and Variance of return is $280(\%)^2$. If the investor's tolerance is 70, what will be the investor's utility ?

(A) 15%

(B) 11%

(C) 4%

(D) Insufficient information

(iv) SANTIKA Project has a mean value of ₹ 11,700. The Management wants to determine the Probability of the NPV of the Project under different ranges. If the Standard Deviation (SD) of the Project is ₹ 6,000, what will be the Probability of NPV between ₹ 7,200 and ₹ 13,200 ?

[Given : Area under Standard Normal Curve]

Z = O To Z =	0.10	0.25	0.50	0.60	0.75	1.00	1.25	1.50
Table Value	0.0398	0.0987	0.1915	0.2257	0.2734	0.413	0.3944	0.4332

(Calculation up to two Decimal Points)

(A) 17.47 %

(B) 22.55 %

(C) 37.21 %

(D) None of the above

(v) Ms. RUDRA on 1st August, 2023 during initial offer of AB Mutual Fund, invested in 10000 units having face value of ₹ 10 for each unit. On 31st March, 2024, dividend declared and given by AB Mutual Fund was 10%, and Ms. RUDRA found that her annualized yield was 150%. What is the NAV as on 31.03.2024 ?

(A) ₹ 21

(B) ₹ 19

(C) ₹ 15

(D) None of the above

(vi) Which one of the following Digital Financial Technologies and Technological concepts, is a type of distributed ledger which provide an order, time stamped and highly Secured record of transactions ?

(A) Peer to peer Technology

(B) Enablers

(C) Block chain

(D) Big Data Analytics

(vii) MR. KAYON a Portfolio Manager managing a Portfolio XB whose current Market value of ₹ 1,800 Lakh. It is expected that the market are likely to correct downwards and hedging needs to be adopted using NIFTY Index futures. Currently Index futures are quoted at 8000 with each contract underlines 200 units. MR. KAYON hedges 100% of his Portfolios. If the number of NIFTY Index contracts to be sold is 180, what will be the Portfolio Beta ?

(A) 1.60

(B) 1.50

(C) 1.20

(D) None of the above

(viii) The current price of BCC's Stock is ₹ 1,515 and it is expected that price of the stock may either go up to the ₹ 1,818 or go down to ₹ 1,212. If strike price of call option of BCC's Stock is ₹ 1,515 and risk-free rate is 7%, the probability of decrease in stock price is

(A) 0.4523

(B) 0.3971

(C) 0.325

(D) None of the above

(ix) If conclusion and opinions of equity analysts and other experts, based on publicly available information are reflected in stock prices, then stock market exhibits

(A) Weak form of efficiency

(B) Semi- strong form of efficiency

(C) Inefficiency

(D) Both (A) and (B) above

(x) Which one of the following Greek alphabets with respect to option measures the sensitivity of options price with respect to its time to expiry i.e. Time value of an option?

(A) Delta

(B) Theta

(C) Rho

(D) Vega

(xi) DAZON Ltd. an export customer who relied on the Inter-bank rate of ₹ / US $ 82.45 / 10 requested his banker to purchase a bill US $ 90,000. What is the rate to be quoted to DAZON Ltd., if the banker wants a margin of 0.20%? (Calculation up to 2 decimal points)

(A) ₹ 81.90

(B) ₹ 82.15

(C) ₹ 82.29

(D) ₹ 82.80

(xii) Which of the following statement(s) is / are True ?

(I) For a Characteristics line, the Y-axis represents the returns for a particular security and the X-axis represents the returns for the Market Index.

(II) The SML Line is the same as the Characteristics line for an individual Security.

(III) The Slope of the SML is the Beta for the particular Security.

(A) Only (I) above

(B) Only (II) above

(C) Only (III) above

(D) Only (I) and (II) above

(xiii) The concept of securitization is associated with _____.

(A) Capital Market

(B) Money Market

(C) Debt Market

(D) Foreign Exchange Market

(xiv) Which of the following is/are the Component(s) of Digital Finance Ecosystem?

(A) Digital Money

(B) Digital Assets

(C) Digital Liabilities

(D) (A) and (B) of the above.

(xv) MR. KKM, an investor buys a call option contract for a premium of ₹ 150. The exercise price is ₹ 45 and the current market price of the share is ₹ 42. If the share price after three months reaches ₹ 50, what is the profit made by the option holder on exercising the option ? Contract is for 100 shares. Ignore the transaction charges.

(A) ₹ 450

(B) ₹ 350

(C) ₹ 375

(D) ₹ 400

SECTION–B

Answer *any five* questions from Question No. 2 to Question No. 8.

Each question carries 14 marks. 14×5=70

2. (a) BATECH Ltd., is a manufacturer of computers. It wants to introduce Artificial Intelligence (AI) while manufacturing computers. The estimated annual saving from introduction of the Artificial Intelligence is as follows:

(i) Reduction of five employees with annual salaries of ₹ 1,50,000 each

(ii) Reduction of ₹ 1,50,000 in production delays caused by inventory problems

(iii) Reduction in lost sales ₹ 1,25,000 p.a.

(iv) Gain due to timely billing ₹ 1,00,000 p.a.

The purchase price of the system for installation of Artificial Intelligence is ₹ 10,00,000 and installation cost is ₹ 50,000. 80% of the purchase price will be paid in the year of purchase and remaining will be paid in next year.

The estimated life of the system is 5 years and it will be depreciated for Income Tax purposes on a straight line basis. However, the operation of the new system requires two computer specialists with annual salaries of ₹ 2,50,000 per person.

In addition to above, annual maintenance and operating cost for five years are as below :

(Amount in ₹)

Year	1	2	3	4	5
Maintenance & Operating Cost	1,00,000	90,000	80,000	70,000	60,000

Maintenance and operating cost are payable in advance.

The Company's tax rate is 30% and its required rate of return is 15%.

Given : PV Factor :

Year	1	2	3	4	5
$PVIF_{(15\%)}$	0.870	0.756	0.658	0.572	0.497

***Required*:**

(i) **Assess** the Net Present Value (NPV) of the Project.

(ii) **Advise** whether the Company should introduce Artificial Intelligence (AI) or not. 7

(b) FONTS (LS) Ltd., is in the business of providing automobiles on wet lease to Corporate Clients. The company is considering a new model of battery run Tesla car for which a good number of enquiries is received. The cost of the vehicle is ₹ 25 Lakh. Its operating, maintenance and insurance costs are expected to be ₹ 5 Lakh in the first year. Thereafter it will be subject to inflation annually @ 6 per cent in the second

and third year and @ 4 per cent during fourth to sixth year. The useful life of the vehicle is six years. The net salvage value of the vehicle at the end of sixth year will be ₹ 10 Lakh. Depreciation for Tax purposes will be 40 per cent under Written Down Value (WDV) method. Marginal tax rate applicable is 35 per cent. Its cost of capital is 8 per cent. Assume that the cost of negotiation and lease administration is NIL.

[Given: PVIF (8%, 1 to 6 yrs) = 0.926, 0.857, 0.794, 0.735, 0.681, 0.630 and PVIFA (8%, 6 yrs) = 4.623].

***Required*:**

Analyse and assess the minimum annual lease rental that the company should quote. 7

3. (a) SAZIC Ltd., is a company that specializes in building plant and machinery for the Chemical Industry. The company is in the process of bidding for a new Chemical Project (BICHEM Ltd.). The Chief bidding Engineer has come up with a Net Present Value (NPV) estimate of ₹ 8365.90 Lakh. His inputs include the company's Weighted Average Cost of Capital (WACC) of 9%, Cash inflows of ₹ 21,000 Lakh which are expected at the end of 3rd year, annual expenditures for the year 1 , 2 and 3 of ₹ 3,100 Lakh per year. The Chief Investment Analyst (CIA) of the company has made the following predictions :

For the Best-Case Scenario, the CIA predicted a WACC of 7.5%, Cash inflows of ₹ 22,000 Lakh at the end of 2nd year and Cash outflows of ₹ 4,200 Lakh at the end of 1st year and ₹ 5,200 Lakh at end of 2nd year.

For the Worst-Case Scenario, he predicted a WACC of 10% , Cash inflows of ₹ 12,600 Lakh at the end of 4th year and Cash outflows of ₹ 2,100 Lakh at the end of each year for 4 years.

The initial investment is 0 (NIL) in all Cases.

[Given: PVIF (7.5%, 1 to 2 yrs) = 0.930, 0.865, PVIF (9%, 3 yrs) = 0.772 and PVIFA (9%, 3 yrs) = 2.531, PVIF (10%, 4yrs) = 0.683 and PVIFA (10%, 4 yrs) = 3.170.]

***Required*:**

(i) **Analyse** the Best-Case Scenario and Worst-Case Scenario.

(ii) **Suggest** and comment on the finding of (i). 7

(b) The earnings and dividend on equity share of RAXON Ltd., have been growing at a rate of 10% per annum for 4 years. After four years the growing rate of dividend is expected to decline linearly to 7%. After six years, the growing rate will fall and stabilize at 7% forever (infinitely). The last dividend per share was ₹ 3 and the investors' required rate of return on the stock of RAXON Ltd. is 16%.

***Required*:**

Analyze and assess how much the value per share of RAXON Ltd.'s equity stock should be. (using Three-Phase Model)

P.V. Factor :

Year	1	2	3	4	5	6	7	8	9	10
PVIF (16%, Yrs.)	0.862	0.743	0.641	0.552	0.476	0.410	0.354	0.305	0.263	0.227

7

4. (a) The following is the parameter pertaining to 8% fully convertible (into equity shares) debentures issued by DAZIN Ltd. at ₹ 1,000:

Market Price of 8% Debenture (₹)	1,200
Conversion Ratio (No. of shares)	25
Straight Value of 8% Debentures (₹)	1,000
Market Price of equity shares on the date of conversion (₹)	40
Expected Dividend per share (₹)	1

***Required*:**

Analyse and **assess** the following:

(i) Conversion Value of Debenture
(ii) Market Conversion Price
(iii) Conversion Premium per share
(iv) Ratio of Conversion Premium
(v) Premium over Straight Value of Debenture
(vi) Favourable Income Differential per share 7

(b) MS AYARA, an investor is trying to analyse the performance of the four Funds. The relevant data about the Fund is given as under:

Fund	Return (%)	Variance $(\%)^2$	Unsystematic Risk $(\%)^2$
RE Fund	16	215	21
HE Fund	21	304	18
AE Fund	16	104	16
TE Fund	14	126	17

The variance on the returns from the Market Portfolio is $360(\%)^2$. The risk-free rate of return is 7%.

[Given: $\beta = \sqrt{\text{Systematic Risk / Market Risk (Variance)}}$]

Required :

Analyse and assess the Rewards to Volatility Ratio and Rank these Portfolios using

(i) Sharpe Measure and
(ii) Treynor's Method.

(Calculation upto 3 decimal points) 7

5. (a) MR. SANUM is advisor of MAX Mutual Fund. A study by MAX Mutual Fund has revealed the parameter in respect of three Securities as given below :

Security	Standard Deviation (%)	Correlation with Index, (ρ_m)
AB Ltd.	25	0.60
BM Ltd.	20	0.95
CX Ltd.	15	0.75

The standard deviation of Market Portfolio (BSE Sensex) is observed to be 15 %.

***Required*:**

(i) **Analyze** the Sensitivity of returns of each stock with respect to the Market.

(ii) **Assess** the Co-variances among the various stocks.

(iii) **Calculate** the Total risk of Portfolio consisting of all the three stocks equally.

(iv) **Assess** the Systematic Risk of the Portfolio in (iii).

(Calculation upto 2 decimal points) 7

(b) MR. RAUN an investor, owns a portfolio with the following characteristics and it is assumed that the security returns are generated by a two-factor model. With the information of MR. RAUN, the newly inducted trainee MS. AYANA has been asked to analyse with comments, if any.

Particulars	Security MB	Security KN	Risk-Free Security
Factor – 1 Sensitivity	0.80	1.50	0
Factor – 2 Sensitivity	0.60	1.10	0
Expected Return	15%	20%	10%

***Required*:**

(i) If MR. RAUN invests ₹ 1,80,000 and sells short ₹ 90,000 of Security KN and purchases ₹ 2,70,000 of Security MB, **analyse** Sensitivity of MR. RAUN's portfolio to the two factors.

(ii) If MR. RAUN borrows ₹ 1,80,000 at the Risk-Free rate and invests the amount, he borrows along with the original amount of ₹ 1,80,000 in Security MB and Security KN in the same proportion as described in Part (i), **analyze** the Sensitivity of the portfolio to the two factors.

(iii) Assess the expected Return premium of Factor-2. 7

6. (a) MR. HISAN is an investor, made the following long-term investments consist of three shares and the details of his portfolio of shares are as below :

Shares	No. of Shares (Lakh)	Market Price per Share	Beta
P. Ltd.	6	250	1.4
Q. Ltd.	8	375	1.2
R. Ltd.	4	125	1.6

MR. HISAN thinks that the risk of portfolio is very high and he wants to reduce the portfolio beta to 0.91.

He is considering below-mentioned alternative strategies :

Dispose a part of his existing portfolio to acquire risk-free Securities.

or

Take appropriate position on Nifty Futures which are currently traded at ₹ 16,250 and each Nifty point is worth 100 units.

***Required*:**

(i) **Analyse** and assess portfolio beta.

(ii) **Assess** the value of risk-free securities to be acquired.

(iii) **Determine** the number of shares of each company to be disposed off.

(iv) If MR. HISAN seeks to increase the Portfolio Beta to 2.275, **analyse** the proportion of market value of investments of Q. Ltd. to the Value of Total Investments plus 10% Margin on Futures. 7

(b) The information pertaining to the Shares of MACHON Ltd. is available below :

Current Market Price (₹)	432
Strike Price (₹)	462
Maximum Price (₹) expected in next 3 months' time	537
Minimum Price (₹) expected in next 3 months' time	390
Continuously Compounded Rate of Interest (p.a.) (%)	9%
e^{rt}	1.0228

***Required*:**

(i) **Assess** the 3 months call option by using Binomial Method and Risk Neutral Method.

(ii) **Justify** that the Calculated value under both the models are same. 7

7. (a) SONTEX Ltd. an Indian firm needs to pay JAPANESE YEN (JY) 1 Crore on 31st August. In order to hedge the risk involved in foreign currency transaction, the firm is considering two alternative methods i.e. Forward Market Cover and Currency Option Contract.

On 1st June, the following quotations (JY / INR) are made available:

Spot : 1.5225 / 1.5345

3 months forward : 1.5726 / 1.5923

The price of forex currency option on purchase are as follows :

Strike Price : JY 1.5855

Call option (August) : JY 0.047

Put option (August) : JY 0.098

For excess or balance of JY covered, the firm would use forward rate as future spot rate.

Note **:** Except rates, round off other calculation to nearest rupees.

***Required*:**

Analyse and **infer** on which of the following methods would be most advantageous to SONTEX Ltd.:

(i) Forward Market Cover

(ii) Currency Option Contract 7

(b) AJANTHA Pharma Ltd. (APL) has acquired an export order for ₹ 10 million for formulation to TANP (P) Ltd. a European Company. The APL has also planned to import bulk drug worth ₹ 5 million from GODON Ltd., a company in U.K. The proceeds of export will be realized in 3 months from now and the payment for import will be due after six months from now. The invoicing of these exports and imports can be done in any currency i.e. Dollar, Euro or Pounds sterling at Company's choice. The following market quotes are available :

	Spot Rate	**Annualized Premium**
₹ / $	82.10 / 82.20	$ = 7%
₹ / Euro	77.15 / 77.20	Euro = 6%
₹ / Pounds	100.65 / 100.75	Pounds = 5%

***Required*:**

As a financial consultant what recommendation would you make to the AJANTHA Pharma Ltd. about invoicing in which currency for proceeds of export and in which currency for payment of import ?

(Calculation should be up to 3 decimal points.) 7

8. (a) Briefly **append** the advantage of Digital Financial Services. 5

(b) **Align** the features of Global Depository Receipt (GDR). 5

(c) "There are different types of Securities issued by the Special Purpose vehicle (SPV) in Securitization Transactions." — **In this context**, **append** any four Securities issued by SPV. 4
