

# FINAL EXAMINATION

December 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.*

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

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

*This paper contains two sections, A and B. Section A is compulsory and contains question No. 1 of 30 marks.*

*Sections 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 answer from the given four alternatives : 2×15=30

- (i) GINSP Ltd. invested ₹ 36 crore in its recent ProjectGZ. The company expects a uniform cash inflows of ₹ 12 crore for 5 years from this ProjectGZ. The cost of capital of the company is 12%. The Modified NPV (MNPV) of this ProjectGZ is ₹ 8.123 crore. **What will** be the reinvestment rate applicable to the cash inflows expected to be generated by this ProjectGZ? (Calculation to be rounded off to 3 decimals).

[Given : PVI Factor / FVI (Future Value Interest) Factors.]

Interest (r)	11 %	12 %	13 %	14 %
PVIF (5 Yrs.)	0.5934	0.5674	0.5428	0.5194
FVIFA (5 Yrs.)	6.228	6.353	6.480	6.610

- (A) 13 %  
(B) 12 %  
(C) 14 %  
(D) None of the above

- (ii) MON Ltd. is expected to grow at the rate of 8 % per annum, which currently pay ₹ 10 as dividend. For investment at the risk level, investor requires a return of 15 % a year. What is the estimated value of the stock?
- (A) ₹ 10.50  
(B) ₹ 154.29  
(C) ₹ 166.61  
(D) None of the above
- (iii) The spot and 6 months forward rates of £ in relation to the rupee (₹ /£) are ₹ 77.9542 / 78.1255 and ₹ 78.8550 / 9650 respectively. What will be annualized forward margin (Premium with respect to Ask Price)?
- (A) 2.31 %  
(B) 1.80 %  
(C) 2.15 %  
(D) None of the above
- (iv) MS RUANA, a Portfolio Manager realized an Average Annual return of 15 %. The Beta of the Portfolio is 1.2 and the Standard deviation of return is 25 %. The Average Annual return for the Market index was 11 % and the Standard deviation of the Market returns is 20 %. If the risk free rate is 4 %, the Sharpe ratio for the Portfolio will be
- (A) 0.16  
(B) 0.44  
(C) 0.55  
(D) None of the above
- (v) \_\_\_\_\_ is the study and analysis of Security Price Movements on the following assumptions.
- (1) There is a basic Trend in the Share Price Movements.  
(2) Such Trend is repetitive.  
(3) Share prices have little relationship with Intrinsic value and are based more on investor psychology and perception.
- (A) Fundamental analysis  
(B) Technical analysis  
(C) Economic analysis, Industry analysis  
(D) Company analysis.

- (vi) Which one of the following Digital Assets, is a Cryptocurrency which is pegged to any reserve asset like a fiat currency, commodity or other Cryptocurrencies ?
- (A) Non-Fungible Token (N F T)
  - (B) Electronic Mail
  - (C) Private Cryptocurrency
  - (D) Stablecoin
- (vii) In June, 2024 a Six Month Call on RITZ Ltd's Stock with an exercise price of ₹ 25 sold for ₹ 5. The Stock price was ₹ 20. The risk free interest rate was 5 % per annum. How much would you be willing to pay for a put option on RITZ LTd's stock with same maturity and exercise price ? [ Given : PVIF (5 %, ½ yr.) = 0.9756 ]
- (A) ₹ 9.39
  - (B) ₹ 6.39
  - (C) ₹ 2.39
  - (D) None of the above
- (viii) Which of the following is not a potential benefit of Central Bank Digital Currencies (CBDC) ?
- (A) Keeping track of transactions, exact location of money
  - (B) Technological efficiency in storing and transacting with reduced cost
  - (C) Scope committing illegal activities like money laundering, tax evasion, terror financing
  - (D) Providing a digital record of every transaction
- (ix) Which of the following statement is / are said to be true with respect to risk penalty ?
- (I) Higher the risk penalty, lower the utility of the return for the investor
  - (II) The risk penalty will be lower for smaller values of risk tolerance and higher values of variance of asset mix.
  - (III) For risk loving investors, risk tolerance is high and risk penalty is low resulting in high utility.
- (A) Only (I) of the above
  - (B) Only (II) of the above
  - (C) Both (I) and (II) of the above
  - (D) Both (I) and (III) of the above

- (x) An option's theoretical value increases by 1.8 if the interest rate is decreased by 1 %. Then 1.8 is
- (A) the Rho of a Call option.
  - (B) the Rho of a Put option.
  - (C) the Theta of a Call option.
  - (D) incomplete parameters.
- (xi) Mr. KITAN, a Portfolio Manager managing a Portfolio (Beta = 1.80) whose current Market Value of ₹ 1500 Lakh. It is expected that the markets are likely to correct downwards and hedging needs to be adopted using NIFTY Index futures. Currently Index futures are quoted at 9000 with each Contract underlies 200 units. Mr. Kitan hedged 100 % of his Portfolios. What is the number of NIFTY Index Contracts to be sold ?
- (A) 200
  - (B) 180
  - (C) 160
  - (D) 150
- (xii) Consider the following parameters of JMB Mutual Fund (Income Plan):

	(₹ In Lakh)
Value of Investments	4169.04
Receivables	325.76
Accrued Income	95.48
Other Current Assets	962.68
Liabilities	977.12
Accrued Expenses	225.84
Number of units outstanding	300 Lakh
Entry Load (%)	3 %

Mr. KUAS wants to purchase units of this scheme. The per unit price he will pay would be

- (A) ₹ 15.10
- (B) ₹ 14.95
- (C) ₹ 14.50
- (D) None of the above

- (xiii) The Sharpe ratio and Treynor ratio of SONTA Equity Fund are 0.37 and 4.16 respectively. The risk premium on the Fund is 6%. Standard deviation of the Fund's return is 11.80 %. If the standard deviation of the Market Index's return is 9.56 %, the Correlation Co-efficient between return of the Fund and the Market will be
- (A) 0.90  
(B) 0.85  
(C) 0.72  
(D) None of the above
- (xiv) In a 100 days stochastic analysis, if the closing price is ₹ 160.50 and the 100 days low and high prices are ₹ 145.20 and ₹ 190 respectively, then stochastic (% K) will be equal to
- (A) 34.15 %  
(B) 30.75 %  
(C) 22.87 %  
(D) Insufficient information
- (xv) An Event Study is a test of which form of Efficient Market Hypothesis ?
- (I) Weak form of Efficient Market Hypothesis  
(II) Semi- strong form of Efficient Market Hypothesis  
(III) Strong form of Efficient Market Hypothesis
- (A) Only (I) of the above  
(B) Only (II) of the above  
(C) Both (I) and (II) of the above  
(D) Only (III) of the above.

**Section – B**

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

Each question Carries 14 Marks.

14×5=70

2. (a) SYAIN Ltd., a manufacturing company is considering the purchase of a new, fully automated machine to replace a manually operated one.

Information about the old machine is as follows :

- It originally had an expected life of 10 years and is now five years old.
- It was purchased five years back at ₹ 4,00,000.
- Depreciation is calculated on the basis of straight line method.
- Currently it has a book value of ₹ 2,00,000.
- It can now to be sold for ₹ 2,20,000.

- The difference between book value and sale value of machine will be charged to tax at 34%.
- It takes one person to operate the machine and he earns ₹ 2,90,000 per year in salary.
- The annual cost of maintenance is ₹ 1,00,000.

The replacement machine being considered has a purchase price of ₹ 7,50,000 and an expected salvage value of ₹ 1,50,000 at the end of its five year life. There will also be shipping and installation expenses of ₹ 60,000. Because the new machine would work faster, investment in net working capital would increase by a total of ₹ 30,000. The company expects that annual maintenance cost on the new machine will be ₹ 70,000.

The required rate of return for this project is 15 % and the company's marginal tax rate is 34%.

[Given : Present Value factors]

Year	1	2	3	4	5	6	7
Present Value factor at 15%	0.8696	0.7561	0.6575	0.5718	0.4972	0.4323	0.3759
PVIFA (15 %)					3.3522		

**Required :**

- Analyse the annual Cash Saving and Net Present Value of Cash inflows.
  - Advise SYAIN Ltd., whether they should replace the existing machine with a new replacement. (New machine) 7
- (b) COMPUTECH Ltd. is considering to acquire an additional computer to supplement its time-share computer services to its clients. It has two options :
- To purchase the computer for ₹ 22 lakhs.
  - To lease the computer for three years from a leasing company for ₹ 5 lakhs as annual lease rent plus 10% of gross time-share service revenue. The agreement also requires an additional payment of ₹ 6 lakhs at the end of the third year. Lease rents are payable at the year-end, and the computer reverts to the lessor after the contract period.

The company estimates that the computer under review will be worth ₹ 10 lakhs at the end of third year.

Revenue forecasts are as follows :

Year	1	2	3
Amount (₹ in lakhs)	22.5	25	27.5

Annual operating cost excluding depreciation / lease rent of computer are estimated at ₹ 9 lakhs with an additional ₹ 1 lakh for startup and training costs at the beginning of

the first year. These costs are to be borne by the lessee. Your company will borrow at 16% interest to finance the acquisition of the computer. Repayments are to be made according to the following schedule :

Year	1	2	3
Principal (₹ in lakhs)	5 lakhs	8.5 lakhs	8.5 lakhs
Interest (₹ in lakhs)	3.52 lakhs	2.72 lakhs	1.36 lakhs

The company uses straight line method (SLM) to depreciate its assets and pays 50% tax on its income.

The PV factor at 8% and 16% rates of discount are given below :

Year	1	2	3
8%	0.926	0.857	0.794
16%	0.862	0.743	0.641

**Required :**

- (i) **Assess** the Net Present Value of cash outflows of the two alternative options.
- (ii) **Advice** Computech Ltd. whether they should go ahead with leasing or purchasing of computer.

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3. (a) STUNCO (Z) Ltd., is considering an investment proposal in Specialized Moulds which has uncertainty associated with the three important aspects : original cost, useful life and annual net cash inflows. The three probability distributions for these variables are as follows :

Original Cost		Useful Life		Annual Net Cash Inflows	
Value (₹ in Lakh)	Probability	Period (Years)	Probability	Value (₹ in Lakh)	Probability
60	0.30	5	0.40	10	0.10
70	0.60	6	0.40	15	0.30
90	0.10	7	0.20	25	0.40
				30	0.20

The company's cost of capital is 15 % and the risk free rate is 12 %, for simplicity, it is assumed that these two values are known with certainty and will remain unchanged over the life of the project, but the risk-free rate will be preferable to the Manager (Finance) of the company. The company wants to perform the five simulation runs of this project's life.

To simulate the Probability distribution of the variables the following are sets of random numbers.

Original Cost	52	37	82	69	98
Useful Life	94	52	69	33	32
Annual Net Cash Inflows	90	62	27	50	36

(Calculation to be rounded off to 3 decimals)

Given PVI Factors :

Year	5	6	7
PVIFA (15 %)	3.3522	3.7845	4.1604
PVIFA (12 %)	3.6048	4.1114	4.5638

**Required :**

- (i) **Analyze** and assess the Net Present Value (NPV) conducting the Simulation Trails.
  - (ii) **Assess** the average Net Present Value (NPV) of the Cash Flows.
  - (iii) **Advise** on the acceptability of the project to the Company. 7
- (b) TEXTON Ltd. is a major player in the textile industry of the country. The industry is expected to maintain high growth for a period of 5 years after which it is expected to drop down. Currently the company is distributing 40% of its profit as dividend to Shareholders. The dividend payout ratio of the company is expected to remain at the current level for a period of next 5 years after which it is expected to increase to 55%. The net profit margin of the company is currently 8 % and is expected to remain at the same level for next 5 years, after which it is expected to decrease to 5.7%. Currently the company is able to generate sales of ₹ 2.50 for every 1 rupee of assets employed and it is expected to remain the same for the next 5 years, and after that the company is expected to generate sales of ₹ 3.50 for every 1 rupee of assets employed. 50% of the assets of the company are financed with equity capital, and it is expected to remain same in the future. At present the risk free rate of return is 7% and market risk premium is 15.5%. The Beta of the company is currently 1.2. Current net worth of the company is ₹ 250 lakhs and numbers of shares outstanding is 2 Lakhs. Assuming that the market is in equilibrium.

(Calculation to be rounded off to 3 decimals)

Given PVI Factors :

Year	1	2	3	4	5
PVIF (20 %)	0.833	0.694	0.579	0.482	0.402
PVIF (24 %)	0.806	0.650	0.524	0.423	0.341
PVIF (25 %)	0.800	0.640	0.512	0.410	0.328
PVIF (25.6 %)	0.796	0.634	0.505	0.402	0.320

**Required :**

**Analyze** and assess the price per share of Texton Ltd., using Dividend Discount Model (DDM).



4. (a) PALSON Ltd. has issued a convertible bond with a face value of ₹ 1,00,000. The bond pays a coupon rate of 6% per annum, with interest payments made semi-annually. The bond has a term of 3 years and will be redeemed at ₹ 1,10,000 at maturity. Alternatively, the bondholder has the option to convert the bond into 50 shares at the end of the 3-year term. The required rate of return for the bond is 12% per annum.

Currently, the share price of PALSON Ltd is ₹ 2,000, and the shares are expected to grow at an annual rate of 8%. The shares also pay an annual dividend of ₹ 50 each.

Given : PV Factor :

Year	1	2	3	4	5	6
PVIF (3%)	0.971	0.943	0.915	0.888	0.863	0.837
PVIF (6%)	0.943	0.89	0.84	0.792	0.747	0.705
PVIF (8%)	0.926	0.857	0.794	0.735	0.681	0.630
PVIF (12%)	0.893	0.797	0.712	0.636	0.567	0.507

**Required :**

- (i) **Analyze** the value of the bond if it redeems at maturity.
- (ii) **Assess** the value of share at conversion.
- (iii) **Assess** the value of conversion option.
- (iv) **Advise** which option is more advantageous for the bondholder. 7
- (b) There are two mutual funds viz. AB mutual fund and YZ mutual fund. Each having closed-ended equity schemes. NAV as on 31-03-2024 of equity schemes of AB mutual fund is ₹ 81.63 (consisting 98% equity and remaining cash balance) and that of YZ mutual fund is ₹ 68.42 (consisting 95% equity and balance in cash).

There is no change in portfolios during the next months. For calculation, consider 12 months in a year and ignore number of days for particular month. The market is expected to decline by 10% over the next month.

Following is the other information :

Particulars	Equity Schemes	
	AB Mutual Fund	YZ Mutual Fund
Sharpe ratio	3.5	5.0
Treynor ratio	21	25
Variance	144	49
Annual Average Cost on NAV	3 %	3.5 %

**Required :**

- (i) **Analyze** the Beta of both mutual funds.
- (ii) **Assess** the NAV for both mutual fund after 1 month. 7

5. (a) Ms. SRITANA an investor is evaluating the prospects of investing in two companies SN Ltd., and GB Ltd. The projections of returns for the stocks of the two companies along with their probabilities are as follows :

Probabilities	Return Associated with		
	SN Ltd.	GB Ltd.	Market Index
0.32	46 %	33 %	25 %
0.26	38 %	27 %	18 %
0.24	25 %	14 %	11 %
0.18	15 %	9 %	7 %

The risk free rate of return is 6.5 %

The following additional information is shown :

	SN Ltd.	GB Ltd.	Market Index
Variance (%) <sup>2</sup>	134.16	90.69	47.20
Covariance with the Market (%) <sup>2</sup>	78.64	64.61	—

**Required :**

- (i) Analyze expected returns on SN Ltd's Stock and GB Ltd's Stock and the Market Index using probability distribution.
  - (ii) Assess the Beta of SN Ltd's Stock and GB Ltd's Stock.
  - (iii) Assess the expected returns of SN Ltd's Stock and GB Ltd's Stock under CAPM.
  - (iv) Justify whether the Stocks of SN Ltd. and GB Ltd. is underpriced or overpriced.
- 7
- (b) A study by Mr. PISUM an analyst of VKC Securities Ltd. has revealed the following parameters of two Securities and Sensex as given below :

Company /Market	Beta	Variance (%)	Covariance with Sensex (%)
Excel Ltd.	0.56	12.25	2.25
Delux Ltd.	1.30	16.00	5.20
Sensex	1.0	4.00	4.00

The coefficient of Correlation between Portfolio and Sensex is 0.50 and Covariance (E, D) is 2.912%.

**Required :**

- (i) Analyze the coefficient of Correlation between
    - a. return on Excel Ltd. and the return on Sensex.
    - b. return on Delux Ltd. and the return on Sensex.
  - (ii) Assess the variance of Portfolio formed using Excel Ltd. and Delux Ltd. in the proportion of  $\frac{3}{4}$  and  $\frac{1}{4}$  respectively.
  - (iii) Analyze whether unsystematic Risk of the Portfolio is less than individual companies' stocks.
- 7

6. (a) Mr. KAYUN an investor has a portfolio consisting of five securities on September 2024 as shown below :

Security	Market Price (₹)	No. of Shares	Beta
A	260.00	450	0.90
B	520.00	850	1.30
C	840.00	200	0.95
D	430.00	500	0.70
E	780.00	600	1.50

The cost of capital for the investor is 20% p.a. compounded. The current NIFTY value is 18200-NIFTY futures are available with expiry for 3 months (NOV' 2024) and 4 months (DEC' 2024) and are currently quoted at 18500 and 18700 respectively. Each NIFTY futures can be traded in units of 25 only.

**Required :**

- (i) **Assess** the Beta of his Portfolio.
  - (ii) **Analyze** theoretical value of futures contract for contracts expiring in NOV and DEC. [Given :  $e^{0.05} = 1.05127$ ,  $e^{0.067} = 1.06930$ ,  $e^{0.070} = 1.07251$ ]
  - (iii) **Identify** the number of contracts the NIFTY, the investor needs to sell to get a full hedge until December for his portfolio.
  - (iv) **Identify** the number of future contracts the investor should trade if he desires to reduce the beta of his portfolio to 0.50. 7
- (b). The market received some information about ZINTON Ltd. tie up with MNOZ Ltd. a multinational company. This has induced the market price to move up. If the information is false, the ZINTON Ltd's stock price will probably fall dramatically. To protect from this Mr. Johan, an investor has bought the call and put options.

He purchased one 3 month's call with a striking price of ₹ 150 for ₹ 10 premium and paid ₹ 6 per share premium for a 3 month's put with a striking price of ₹ 140.

**Assume** that Mr. Johan purchased 100 Shares for call and put option each.

**Required :**

- (i) **Assess** the investor's position if the tie up offer bids the price of ZINTON Ltd's stock up to ₹ 145 in 3 months.
  - (ii) **Analyze** the investor's position if the tie up offer program fails and the price of the stocks falls to ₹ 110 in 3 months.
  - (iii) **Analyze** the investor's position if the tie up offer program is successful and the price of the stocks rise up to ₹ 153 in 3 months. 7
7. (a) ATONEX Ltd., an Indian company that exports precision equipment, has a foreign receivable of EUR 25 million due in 6 months from a client in Italy. Simultaneously, the company has an upcoming payable of EUR 10 million in 6 months for importing specialized machinery from Germany.

The company is evaluating three hedging strategies to manage its net transaction exposure:

**Forward Contracts :** Forward rates of ₹ 97 / EUR for both the receivable and payable.

**Money Market Hedge :**

Currency	Borrow (%) P.A.	Deposit (%) P.A.
EUR	3.5 %	3.5 %
INR	9.0 %	7.0 %

**Currency Option Hedge :**

Purchase a EUR call option with a strike price of ₹ 98 / EUR for the receivable (6 months) with a premium of ₹ 2 per EUR.

Purchase a EUR put option with a strike price of ₹ 95 / EUR for the payable (6 months) with a premium of ₹ 1.5 per EUR.

**Current Spot Rate (EUR / INR) :** ₹ 95 / EUR. Expected Spot Rate after 6 months (EUR / INR) : ₹ 99 / EUR.

**Required :**

- (i) **Analyze** the forward contract hedge strategy for both the receivable and payable.
  - (ii) **Analyze** and infer the money market hedge strategy for both the receivable and payable.
  - (iii) **Assess** the outcomes using a currency option hedge.
  - (iv) **Synthesize** the results from all three hedging strategies and propose a well-justified recommendation for the best strategy to minimize the net transaction exposure. 7
- (b) The following two way quotes appear in the Foreign Exchange Market.

	Spot	Three Month's Forward
₹ / US \$	₹ 82.25 / 82.50	₹ 83 / 83.50

**Required :**

- (i) By what % has the Dollar currency changed ? **Analyze** the nature of change. (Answer with reference to the ask rate)
  - (ii) By what % has the Rupee changed ? **Analyze** the nature of change. (Answer with reference to the bid rate)
  - (iii) **Assess how many** US Dollars should a firm sell to get ₹ 50 lakhs after three months.
  - (iv) **Assess how many** rupees is the firm required to pay so as to obtain US \$ 2,50,000 in the Spot Market.
  - (v) Assume that the firm has US \$ 1,00,000 in current account earning interest. Return on rupee investment is 10% per annum. **Should the firm** encash the US \$ now or 3 months later ? 7
8. (a) What do you mean by Neo-Bank ? **Align** the benefits of Neo-Banks. 5
- (b) **Briefly append** the various lending schemes of International Monetary Fund (IMF). (any five) 5
- (c) "In spite of its widely recognized benefits, securitization has a few limitations as well". **In this context summarize** those limitations. (Any Four) 4