FINAL EXAMINATION

June 2025

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 answer from the given alternatives: 2×15=30

(i) ROXIN Ltd. is contemplating an investment project RZ of 5 years with an initial outlay of ₹ 30 crore. The company expects a uniform cash inflow of ₹ 10 crore for five years from this project. The expected rate at which the said cash flows will be reinvested is 12%. If the cost of capital for the company is 10%, what will be the Modified Net Present Value (MNPV) of the project RZ?

[Given: PVI Factors/FVI Factors]

Interest Rate (R)	10 %	11 %	12 %
PVIF (5 yrs.)	0.6209	0.5934	0.5674
FVIFA (5 yrs.)	6.1051	6.2278	6.3528

(A) ₹ 9.445 crore

(B) ₹ 7.907 crore

(C) ₹ 6.605 crore

(D) None of the above

(ii) ZOM Ltd's share is currently traded for ₹ 80 per share. It is expected that a dividend of ₹ 4 per share after one year will grow at 8% indefinitely. What is the expected return?

(A) 8%

(B) 13%

(C) 5%

(D) 80%

(iii) MS. AVONA, 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 standard deviation of the market returns is 20%. If the risk - free rate is 4%, What is the Sharpe ratio for the portfolio?

(A) 0.16

(B) 0.44

(C) 0.55

(D) 0.64

(iv) A bond of RIZO Ltd., with a face value of ₹ 1000 provides 12 % annual return and pays ₹ 1050 at the time of maturity, which is 10 years from now. If the investor required rate of return is 13%, at which price should the company issue the bond?

(A) ₹ 309.75

(B) ₹ 651.12

(C) ₹ 960.87

(D) ₹ 970.00

(v) MR. RITAV, an investor buys 100 shares of a sugar mill at ₹ 210 per share and at the same time writes a September ₹ 250 call at a premium of ₹ 20 per share. If the expiration date price is ₹ 280, calculate the net gain/loss.

(A) ₹ 60

(B) ₹ 40

(C) ₹ 20

(D) None of the above

(vi) A buy signal provided by moving average analysis of Stock price is when the stock price line

(A) falls below a rising moving average line.

(B) rises above a falling moving average line.

(C) falls below a flattening moving average line.

(D) falls below a falling moving average line.

(vii) In contrast to the CAPM, Arbitrage Price Theory (APT)

(A) requires that markets be in equilibrium.

(B) uses Risk premiums based on micro variables.

(C) specifies the number and identifies specific factors that determine expected return.

(D) Does not require the restrictive assumptions concerning the market portfolio.

(viii) The expected return of a portfolio SOX is 17 % and variance of return and investor's utility are 300 $(\%)^2$ and 12% respectively. What will be the investor's risk tolerance?

(A) 70

(B) 60

(C) 58

(D) None of the above

(ix) The Spot exchange rate is \$ 0.01182/₹ and the six month forward exchange rate is \$ 0.01190/₹. If the normal rate of India 6 months T-Bills is 6 % p.a., what would be the normal rate of US 6 month T-Bills?

(A) 7.40 %

(B) 6.50 %

(C) 7.00 %

(D) 7.80 %

(x) Which of the following components of Digital Infrastructure is/are a messenger(s) that process request and ensures seamless functioning of enterprise systems?

(A) Internet

(B) Cloud Services

(C) Data Centres and Networks

(D) API (Application Programming Interface)

(xi) The Sharpe's ratio and Treynor's ratio of RITN Growth Fund are 0.35 and 6.50 respectively. The correlation co-efficient between returns of the fund and the market index is 0.60. The standard deviation of the market index's return approximately is

(A) 11.42 %

(B) 11.14 %

(C) 13.45 %

(D) None of the above

(xii) Which of the following statement(s) is/are true concerning all the three forms of the efficient market hypothesis?

(1) Equilibrium rate of return will prevail.

(2) Securities of firms sell at their fair value.

(3) Investors cannot earn a positive return.

(A) Only (1) above

(B) Only (2) above

(C) Both (1) and (3) above

(D) Both (1) and (2) above

(xiii) Closing prices of the Stock of MONX Ltd., is given below:

Day	Closing Price (₹)
1	125.45
2	135.25
3	132.75
4	142.75
5	145.25

What would be the relative strength of the Stock of MONX. Ltd.?

(A) 0.9875

(B) 1.0255

(C) 1.0628

(D) 1.1185

(xiv) Which one of the following Greek alphabets with respect to option measures the sensitivity of option price with respect to the volatility of the price of the underlying asset?

(A) Gamma

(B) Vega

(C) Rho

(D) Theta

(xv) A portfolio holding 90 percent of its assets in CNX Nifty Stocks in proportion to their market capitalization and 10 percent in Treasury bills is more sensitive to

(A) Index Risk

(B) Systematic Risk

(C) Unsystematic Risk

(D) None 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) ZODIAC Ltd., had purchased a machine four years ago of ₹ 4,80,000 having estimated useful life of 8 years with zero salvage value. Depreciation is charged using Straight Line Method over the useful life. The management is considering to replace this machine with a new machine. After the market analysis, the purchase manager has provided the detail information of new machine as below:

- The cost of new machine is ₹ 12,00,000. However, the Vendor of this machine has agreed to take old machine at a value of ₹ 2,40,000. Cost of dismantling and removal of old machine will be ₹ 40,000.
- For the new machine, 80% of net purchase price will be paid on the date of purchase and remaining will be paid at the end of one year.
- Depreciation will be charged @ 20 % p. a. under Written Down Value method.
- Estimated useful life of new machine is four years and it has salvage value of ₹ 1,00,000 at the end of year four.
- Incremental annual sales revenue is ₹ 12,25,000
- Contribution margin is 50%.
- Incremental indirect cost (excluding depreciation) is ₹ 1,18,750 per year.

- Additional working capital of ₹ 2,50,000 is required at the beginning of year and ₹ 3,00,000 at the beginning of year three. Working capital at the end of year four will be nil.
- Tax rate is 30%.

Ignore tax on capital gain.

ZODIAC Ltd. will not make any additional investment, if it yields less than 12%.

[Given PVI Factor]:

Year	1	2	3	4	5
$PVIF_{(12\%,t)}$	0.893	0.797	0.712	0.636	0.567

Required :

(i) **Assess** the initial Net Cash Outflow, Additional Depreciation and Net Present Value of Cash inflows.

(ii) **Advice** ZODIAC Ltd., whether they should replace the existing machine with a new machine. 7

(b) DEXTON (L) Ltd., a leasing company has agreed to lease an equipment to its customer for 4 years, which is also the life of the equipment. The equipment costs ₹ 300 lacs, has no salvage value and can be depreciated in 4 years on straight line basis. The customer has requested that lease rentals be paid at the end of the first, second, third and fourth years in the ratio 2 : 2 : 1 : 1 so that it can match its own cash availability. The average post tax cost of the funds of Dexton (L) Ltd., is 10%, but to cover the effects of inflation, they prefer to hike this rate by 2%. The company's effective tax rate is 35%.

[Given : PVI Factor]

Year	0	1	2	3	4	5
$PVIF_{(10\%, t)}$	1	0.909	0.826	0.751	0.683	0.621
$PVIF_{(12\%, t)}$	1	0.893	0.797	0.712	0.636	0.567

Required:

Analyze and **assess** the lease rentals payable by the customer for each year of 4 years (i.e. 1st, 2nd, 3rd & 4th).

[Present calculation (₹) upto 4 decimal places]. 7

3. (a) ELITE (M) Ltd., a leading industrial equipment manufacturer, is planning to invest in new production technology and is evaluating two mutually exclusive projects: Project Titan (Advanced Machinery) and Project Orion (Cost – Effective Machinery). Both projects require an initial investment of ₹ 5,00,000 and the expected after-tax cash flows (CFAT) over three years are as follows:

The estimated CFAT (₹) for each project is:

Project Titan	Probability	Project Orion	Probability
160000	0.15	130000	0.25
200000	0.25	180000	0.35
280000	0.35	300000	0.25
420000	0.25	360000	0.15

Additional Information:

The Post Tax Cost of Capital of Elite (M) Ltd. is 9 %.

[**Given:** PVIFA (9%, 3 yrs.) = 2.513]:

Required:

(i) **Analyze** and **assess** the expected Net Present Value (NPV) for each project.

(ii) **Assess** the standard deviation of cash flows of each project.

(iii) **Analyze** the co-efficient of variation for each project.

(iv) **Recommend** which project should be selected based on coefficient of variation. 7

(b) An investor is considering to purchase equity shares of DELTA Ltd. whose current market price is ₹ 172.45 per share. The company is proposing a dividend of ₹ 6 for the year ending 31st March, 2025. Delta Ltd. is expected to grow @ 20% per annum for the next four years. Thereafter , the growth, over the next three years, will decline linearly by 1% per annum. Thereafter, it will stabilize at a certain growth rate per annum infinitely.

The required rate of return for the investor is 20%.

(Dividend value is to be taken in 2 decimal points only.)

[**Given:** PVI Factor]:

Period	1	2	3	4	5	6	7
PVIF $_{(20\%, n)}$	0.8333	0.6944	0.5787	0.4823	0.4019	0.3349	0.2791

Required:

(i) **Assess** the stable growth rate of DELTA Ltd. after the end of 7 years.

(ii) **Advise** whether it is worth to purchase the share at this price if the investor has a stable target growth rate of 15% per annum. 7

4. (a) ASTERA UTILITIES Ltd., a leading energy infrastructure company, has issued a 25-year zero-coupon bond to raise capital for a large-scale hydroelectric power project. The bond does not offer any interim interest payments and will be redeemed at face value upon maturity. However, it comes with embedded options designed to mitigate interest rate risks for both the issuer and the investor.

The bond has a face value of ₹ 1,00,000 and follows annual compounding. The investor's required yield to maturity is structured in a tiered manner: 8% per annum for the first 10 years, 9% per annum for the next 10 years, and 10% per annum for the final 5 years.

In addition to its maturity value, the bond includes two embedded options. The first is a call option, allowing Astera Utilities Ltd. to redeem the bond early at the end of Year 15 for ₹ 1,01,000. The second is a put option, enabling investors to sell the bond back to the company at the end of Year 18 for ₹ 80,000 if market conditions warrant.

[**Given:** PV Factor:]

Year	5	8	10
PVIF (8%)	0.6806	0.5403	0.4632
PVIF (9%)	0.6499	0.5019	0.4224
PVIF (10%)	0.6209	0.4665	0.3855

Required:

(i) **Analyze** value of the bond today if the issuer holds at maturity.

(ii) **Assess** value of the bond if the issuer exercises the call option at the end of Year 15.

(iii) **Assess** value of the bond if the investor exercises the put option at the end of Year 18.

(iv) **Advise** on which option is best from the investor's point of view. 7

(b) Mr. PARAG has diversified his portfolio by investing in three mutual fund schemes – Fund Alpha, Fund Beta, and Fund Gamma. Unfortunately, he has misplaced the original investment documents and seeks assistance in reconstructing the investment details based on the latest data. Below are the details of his investments:

Particulars	Fund Alpha	Fund Beta	Fund Gamma
Amount Invested (₹)	₹ 2,50,000	₹ 3,00,000	₹ 1,50,000
NAV at Time of Purchase (₹)	₹ 11.20	₹ 10.50	₹ 10.00
Dividends Received till 31-Mar-2025 (₹)	₹ 7,500	Nil	₹ 3,750
NAV as on 31-Mar-2025 (₹)	₹ 11.10	₹ 9.70	₹ 10.60
Effective Annual Yield (%)	₹ 10.80%	– 13.25%	20.45%
Bonus Units on 1-Jan-2025	Nil	Nil	1:10

Required:

(i) **Analyze** the number of units in each scheme.
(ii) **Assess** the total NAV as on 31-Mar-2025.
(iii) **Assess** the total yield (%) on investment.
(iv) **Analyze** the number of days of investment held. 7

5. (a) You are assessing two capital-intensive engineering companies, Omega Hydraulics Ltd. and Vertex Industrial Solutions Ltd., that have recently restructured their capital to support expansion plans. The management of both companies wants to evaluate whether their actual equity returns align with investor expectations based on their risk profiles.

The following information is provided:

Particulars	Omega Hydraulics	Vertex Industrial
Unlevered Beta	0.90	0.82
Proposed Capital Structure (Debt/Equity)	0.60	0.90
Actual Return	16.00%	20.00%
Treasury Bill Details		
Face Value	₹ 100	
Annual Coupon Rate	6.50%	
Current Market Price	₹ 95	

The expected market return is 14.5%.
(Ignore Taxation)

Required:

(i) **Analyze** the levered beta for each company based on their proposed capital structure.
(ii) **Analyze** and assess the expected return for each company using the CAPM model.
(iii) **Analyze** which company is overperforming or underperforming based on its return. 7

(b) MR. KETON, a Portfolio Manager at Helix Capital Advisors holds Portfolio NZ consisting of the following Securities with details thereof:

Shares	Portfolio Weight	Beta	Expected Return in (%)	Total Variance
ASL	0.35	0.35	15	0.015
NSL	0.25	1.25	20	0.035
ZNL	0.40	0.80	12	0.020

Standard Deviation of Market Portfolio Return is 12%.

Covariance (ASL, NSL) = 0.025

Covariance (NSL, ZNL) = 0.060

Covariance (ZNL, ASL) = 0.035

[Present calculation (Figures) upto 4 decimal places].

Required:

Analyze and **assess** the following:

(i) The Portfolio Beta.

(ii) Residual Variance of each of three shares.

(iii) Portfolio Variance (on the basis of Modern Portfolio theory given by Markowitz). 7

6. (a) MS. VUMI a Portfolio Manager has the following three Stocks in his Portfolio:

Security	No. of Shares (Lakh)	Market Price per share	Beta
AS Ltd.	4.5	₹ 500	1.40
BM Ltd.	6.0	₹ 750	1.20
ZM Ltd.	3.0	₹ 250	1.60

The Portfolio Manager thinks that the risk of Portfolio is very high and wants to reduce Portfolio Beta to 0.975. She is considering two below mentioned alternative strategies.

(1) Dispose off a part of his existing Securities and replace them with Government Securities.

Or,

(2) Take appropriate position on Nifty Futures which are currently traded at ₹ 24,375 and each Nifty point is worth 100.

Required:

(i) **Analyze** the weighted average Beta of the Portfolio.

(ii) **Assess** the value of Government Securities to be acquired.

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

(iv) **Analyze** the number of NIFTY contract to be bought / sold. 7

(b) MR. TRIMURTI, an investor had purchased a 3-month call option on the Equity shares of BRITANIA Ltd. for a premium of ₹ 30 each, the current market price of the share is ₹ 560 and the exercise price is ₹ 590.

He expects the price range between ₹ 540 to ₹ 640 in next 3 months.

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

Expected price (₹)	540	560	580	600	620	640
Probability	0.10	0.15	0.05	0.35	0.20	0.15

Required:

(i) **Assess** the expected share price at the end of 3 months.

(ii) **Assess** the 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, **analyse**, 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 computed in (iii) above. 7

7. (a) GLOBE TECH Ltd., an Indian electronics importer, has placed an order to import high-end semiconductor chips worth USD 5,00,000, payable in 3 months. The company is evaluating different strategies to hedge its foreign exchange exposure.

Market Data:

Rate	USD/INR	EUR/USD
Spot Rate	₹ 83.20	1.10
3-Month Forward Rate	₹ 84.10	1.12

USD Call Option (3-month): Strike Price = ₹ 84.00 , Premium = ₹ 0.90 per USD.

Required:

(i) **Apply** the forward contract hedge strategy to hedge the USD payment.

(ii) **Analyze** USD call option strategy and **compute** maximum rupee outflow.

(iii) If GlobeTech uses EUR to settle the invoice through the cross-currency route, **assess** the EUR amount required and the INR outflow using the 3-month forward rate.

(iv) **Synthesize** the results from all hedging strategies if INR is expected to depreciate to ₹ 85.50/USD in 3 months and **recommend** the best hedging strategy. 7

(b) NOVANTA CAPITAL Pvt. Ltd., an Indian-based investment firm, is assessing the valuation of the Indian Rupee (INR) against the US Dollar (USD) for a 1-year forecast horizon. The firm applies both Interest Rate Parity (IRP) and Purchasing Power Parity (PPP) theories to project exchange rates.

The following macroeconomic data is available:

Data	India	US
Real Interest Rate	1.2%	1.5%
Inflation Forecast – First Half	6.3%	2.4% (full year)
Inflation Forecast – Second Half	6.8%	
Spot Exchange Rate (USD/INR)	₹ 82.50	

Assume that inflation forecast for the full year (in India) = Average inflation rate of 2 half years.

Required:

(i) **Derive** the nominal interest rates for India and the US.

(ii) **Assess** the theoretical forward rate via Interest Rate Parity (IRP).

(iii) **Assess** the expected future exchange rate via Purchasing Power Parity (PPP). 7

8. (a) "A Stablecoin is a tokenized version of the asset." — **In this context, align** the variants of Stablecoin. 5

(b) Briefly **append** the different types of Foreign Bonds. 5

(c) "A Financial Institution Securitizes part of its balance sheet for various reasons." — In **this context identify** and briefly **explain** the said main reasons. 4

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