FINAL EXAMINATION

December 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.
Wherever 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 addition 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) The PROFITABILITY Index (PI) of Project TN is 2 when its annual after tax cash inflows commencing from year end 2 to 4 of ₹ 400 Lakh (each year) is discounted at 10%. How much would have been the initial cash outlay which was fully made at the beginning of year 1 ?
[Given : PVIF (10% yr1 to yr4) = 0.909, 0.826, 0.751 and 0.683]
(A) ₹ 400 Lakh
(B) ₹ 452 Lakh
(C) ₹ 634 Lakh
(D) None of the above

(ii) The following information is available with respect to Project XZ :

Project Cost (₹)	12000
Annual Cash inflow (₹)	4500
Life of Project (yrs.)	4
Cost of Capital (%)	14
PVIFA (14% yr 4)	2.9137

The sensitivity with respect to the project cost will be _____.
(A) 9.26 %
(B) 10.26 %
(C) 9.72 %
(D) None of the above

(iii) The following information is extracted from the Project of PAM Ltd. :

Expected Cash Flow (₹)	Probability
10,000	0.70
20,000	0.30

Amount in lieu of Expected Cash Flow = ₹ 12,000.

The certainty equivalent co-efficient is

(A) 1.083

(B) 1.00

(C) 0.920

(D) None of the above

(iv) Under "Securitization process", _____ are instruments which are issued by a subsidiary company in respect of receivable of holding or parent company.

(A) Pass through Certificates

(B) Pay through Certificates

(C) Preferred Stock Certificates

(D) None of the above

(v) In a 100-day stochastic analysis, if the closing price is ₹ 210, the 100-day low and high prices are ₹ 200 and ₹ 240 respectively, then stochastic (%K) will be equal to

(A) 25 %

(B) 16 %

(C) 12 %

(D) None of the above

(vi) **ARON Ltd.** has 1 million AAA rated 12 % bonds outstanding, maturity in 7 years from now. If the market interest rate is 14 %, the price of the bond (Face value ₹ 100 and Coupons are payable annually) is _____.

[**Given** : PVIFA (14% 7yrs.) = 4.288, PVIFA (12% 7 yrs.) = 4.564, PVIF (14% 7 yrs) = 0.400, PVIF (12% 7 yrs) = 0.452]

(A) ₹ 90.00

(B) ₹ 91.46

(C) ₹ 93.00

(D) None of the above

(vii) **MS. SAKALI,** a prospective investor, has collected the following information pertaining to two securities as under :

Security	Return (%)	Standard Deviation (%)
Gilt – edged Security	7	0
Equity	25	30

Using the above two securities, if Ms. Sakali is planning to invest ₹ 5,00,000 to Construct a Portfolio with a standard deviation of 24%, the return on such Portfolio is

(A) ₹ 1,10,000

(B) ₹ 1,07,000

(C) ₹ 99,000

(D) ₹ 1,08,200

(viii) **ZOMB Ltd.** is entirely financed by equity shares. The equity share has a beta of 0·8. The company pays no taxes. ZOMB Ltd. now decides to buy back half of the equity shares by borrowing an equal amount. If the debt yields a Risk free return of 10% (Beta = 0), what will be the beta of the equity shares after buy back ?

(A) 1.60

(B) 1.20

(C) 0.80

(D) 1.50

(ix) Which one of the following types of Credit Risk, is a chance that a rating agency will lower its rating on the issuer or the probability of loss from a fall in issuers rating because of deterioration in its financial condition ?

(A) Credit Spread Risk

(B) Default Risk

(C) Downgrade Risk

(D) Country Risk

(x) Consider a bullish Spread Option Strategy using a call option on the stock of CNC Oil with ₹ 220 exercise price priced at ₹ 24 and a call option with ₹ 280 exercise price priced at ₹ 14. The current market price of stock of CNC Oil is ₹ 248. If the price of the stock is ₹ 360 on maturity, the new profit at expiration will be _____.

(A) ₹ 70

(B) ₹ 60

(C) ₹ 50

(D) None of the above

(xi) Which of the following complex financial derivatives are options having a maturity of up to three years ?

(A) LEAPS (Long Term Equity Anticipation Securities)

(B) Baskets

(C) Warrants

(D) Swapstions

(xii) Which of the following is / are feature(s) of Global Depository Receipts (GDRs) ?

(A) Returns

(B) Globally Marketed

(C) Both (A) and (B)

(D) Not negotiable

(xiii) The actual exchange rates are available at the market as follows.

EUR/USD : EUR 1 = $ 1·1201 – 1·1216
INR/USD : ₹ ⊥ = $ 0·0116 – 0·0118

What will be the cross rate between EUR/INR?

(A) ₹ 94·9237 / 96·6897

(B) ₹ 94·9287 / 95·7071

(C) ₹ 96·5603 / 96·7075

(D) None of the above

(xiv) _____ explains the relationship between inflation rate differential and the expected spot rate.

(A) Interest Rate Parity (IRP)

(B) Fisher Effect (FE)

(C) International Fisher Effect (IFE)

(D) Purchasing Power Parity (PPP)

(xv) Which one of the following examples of cryptocurrencies, takes its name from an internet meme featuring a Shiba Inu Dog ?

(A) Litecoin

(B) Dogecoin

(C) Bitcoin

(D) Ethereum

Section – B

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

Each question carries 14 marks. 14×5=70

2. (a) **PEGUS Ltd.,** is a leading manufacturer of railway parts for passenger coaches and freight wagons. Due to high wastage of material and quality issues in production, the General Manager of the company is considering the replacement of machine X with a new Computer Numerical Control (CNC) machine Y. Machine X has a book value of ₹ 4,80,000 and remaining economic life is 6 years. It could be sold now at ₹ 1,80,000 and zero salvage value at the end of sixth year.

The purchase price of machine Y is ₹ 24,00,000 with economic life of 6 years. It will require ₹ 1,40,000 for installation and ₹ 60,000 for testing. Subsidy of 15% on the purchase price of the machine Y will be received from Government at the end of 1st year. Salvage value at the end of sixth year will be ₹ 3,20,000.

The General Manager estimates that the annual savings due to installation of machine Y include a reduction of three skilled workers with annual salaries of ₹ 1,68,000 each, ₹ 4,80,000 from reduced wastage of materials and defectives and ₹ 3,50,000 from loss in sales due to delay in execution of purchase orders. Operation of machine Y will require the services of a trained technician with annual salary of ₹ 3,90,000 and annual operation and maintenance cost will increase by ₹ 1,54,000.

The tax rate applicable to the company is 30% and the required rate of return is 14%.

The company follows straight line method of depreciation.

(Ignore tax savings on loss due to sale of existing machine.)

The present value factors at 14% are:

Years	0	1	2	3	4	5	6
PV Factor (14 %, t)	1	0.877	0.769	0.675	0.592	0.519	0.456

Required :

(i) **Assess** the Net Present Value and Profitability Index of the proposal.

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

(b) **Gamma Ltd.** is considering the acquisition of a laptop server system costing ₹ 80,000. The effective life of the computer is expected to be five years. The company plans to acquire the same either by borrowing ₹ 80,000 from its bankers at 12% interest p.a. or on lease. The company wishes to know the lease rentals to be paid annually, which will make it indifferent to the loan option.

The following additional information is available:

(I) The principal amount of loan will be paid in five annual equal instalments.

(II) Interest, lease rentals, principal repayment are to be paid on the last day of each year.

(III) The full cost of the computer will be written off over the effective life of computer on a straight-line basis and the same will be allowed for tax purposes.

(IV) The company's effective tax rate is 35% and the after-tax cost of capital is 10%.

(V) The computer will be sold for ₹ 4,000 at the end of the 5th year. The commission on such sales is 10% on the sale value.

Given : PV Factor at 10% :

Year	1	2	3	4	5
Present value	0.909	0.826	0.751	0.683	0.621

Required:

Analyze and **assess** annual lease rentals payable by Gamma Ltd. which will result in indifference to the loan option. 7

3. (a) **ARON Ltd.** is evaluating two mutually exclusive projects, A and B, each requiring an investment of ₹ 25,00,000. Project A is expected to generate annual cash inflows of ₹ 7,00,000 in the pessimistic case, ₹ 9,50,000 in the most likely case, and ₹ 12,00,000 in the optimistic case. The probabilities of these outcomes are 0.20, 0.50 and 0.30 respectively. The standard deviation of Project A's inflows is estimated at ₹ 1,80,000.

Project B is expected to generate annual cash inflows of ₹ 5,00,000 in the pessimistic case, ₹ 10,00,000 in the most likely case, and ₹ 14,00,000 in the optimistic case, with corresponding probabilities of 0.30, 0.40 and 0.30. The standard deviation of Project B's inflows is estimated at ₹ 2,50,000.

For benchmarking purposes, the industry has three comparable projects: Project X, with an expected inflow of ₹ 8,00,000 and standard deviation of ₹ 1,60,000; Project Y, with an expected inflow of ₹ 10,00,000 and standard deviation of ₹ 2,20,000; and Project Z, with an expected inflow of ₹ 9,00,000 and standard deviation of ₹ 1,80,000. The industry benchmark Coefficient of Variation (CV) is defined as the average CV of these three projects.

Required:

(i) **Assess** the Expected Cash inflows of Projects A and B.

(ii) **Analyze** the Coefficient of Variation (CV) for Projects A and B.

(iii) **Assess** the Industry Benchmark Coefficient of Variation (CV).

(iv) **Recommend** which project ARON Ltd. should select as compared to industry. 7

(b) **LMN Ltd.** is evaluating its share value with the following information:

The current dividend per share is ₹ 25, and the current market price is ₹ 550. The company's return on equity (ROE) stands at 18%, with a retention ratio of 50%. The required rate of return is 14%. The expected growth rates are 12% for the first year, 10% for the second year, and sustainable growth rate (by considering the retention ratio) for the third year and beyond.

Given : PV Factor :

Year	1	2	3	4
PVIF (14%)	0.877	0.769	0.675	0.592
PVIF (18%)	0.847	0.718	0.609	0.516

Required:

(i) **Assess** the intrinsic value of the share using the Dividend Discount Model.

(ii) **Analyze** the intrinsic value with the current market price to determine if the share is overvalued or undervalued. 7

4. (a) The following data is available for a Corporate Bond :

Face Value	₹ 1,000
Coupon Rate	11 %
Years to Maturity	6
Redemption Value	₹ 1,000
Yield to Maturity	15 %

Required :

(i) **Assess** the Current Market Price.

(ii) **Assess** the Duration of the Bond.

(iii) **Analyze** the Volatility of the Bond.

(iv) **Analyze** the Expected Market Price if increase in required yield is by 100 basis points.

(v) **Analyze** the Expected Market Price if decrease in required yield is by 75 basis points.

(Round off your answer to 3 decimals.)

[Given : PVIFA (15%, 6years) = 3·784 and PVIF (15%, 6 years) = 0·432 7

(b) Wealth Plus Gift Fund Scheme was launched two years ago with the objective of providing growth through a mix of equity and debt investments. The scheme attracted good response from investors, and over the years it built a diversified portfolio across multiple sectors and instruments.

The portfolio of the fund is as follows:

The scheme had invested ₹ 35 crore in IT & ITES companies, ₹ 20 crore in Infrastructure, ₹ 10 crore in Aviation & Transport, ₹ 25 crore in Automotive, and ₹ 15 crore in Banking/ Financial Services. Alongside these equity holdings, the fund also purchased unlisted bonds worth ₹ 20 crore. The fund also maintains ₹ 4 crore as cash and other assets throughout the fund period, while expenses payable on the closure date are estimated at ₹ 5 crore. The market expectation on listed bonds is 8%. The scheme has 7 crore units outstanding. **Assume** that there is no cash as on date of purchase.

The particulars relating to Sectoral Index are as follows :

Sector	Index on Date of Purchase (01.04.2023)	Index on Valuation Date (31.03.2025)
IT and ITES	1800	3100
Infrastructure	1500	2550
Aviation/Transport	1400	2300
Automotive	1750	2800
Banking/Financial	1600	2500

Required:

(i) **Assess** net asset value of the fund as of valuation date.

(ii) **Analyze** NAV per unit as of 31.03.2025.

(iii) **Assess** and analyze Net Return (Annualized) % of the scheme over the 2-year horizon when the fund has distributed ₹ 3.00 per unit per year as cash dividend. 7

5. (a) Returns on two portfolios, Moon and Sun, for the past 4 years are—

Year	Portfolio Moon	Portfolio Sun
1	14.20 %	15.45 %
2	14.70 %	12.48 %
3	13.70 %	14.70 %
4	15.20 %	14.00 %

Beta factor of the two portfolios are 1.8 and 1.4 respectively. The market portfolio fetches 11 % return and RBI Bonds, which are considered risk-free, yield 5.5 % return.

Required :

(i) **Assess** expected rate of return under CAPM.

(ii) **Evaluate** alpha adjusted return.

(iii) **Recommend** which of the above two portfolios the investor will prefer. 7

(b) **MS. TAMIA,** a Mutual Fund Analyst, has collected past performance of the three Funds and the Sensex.

FUND	Return (%)	Std. Deviation (%)	Correlation with the Market Return
ROX FUND	19%	2.50	0.840
SEZ FUND	13.50 %	2.00	0.540
TOM FUND	11.00%	0.80	0.975
Market Risk	-	1.20	-
Market rate of Return	14.00%	-	-
Risk free rate	9.00%	-	-

Required :

Analyze and assess the rank of the three Funds in tabular form for

(i) Sharp's Measure,

(ii) Treynor's Measure,

(iii) Jensen's Alpha. 7

6. (a) **MR. HICKS,** an investor, has a portfolio of five securities on January 1, 2025 as given below :

Security	Price (₹)	No. of Shares	Beta
AN	612.65	3000	0.90
BZ	334.20	5000	?
CT	454.45	6000	0.40
DM	775.10	10000	0.95
EB	781.05	3000	0.85

Other Information :

- Portfolio beta is 0.859.
- The cost of capital to the investor is 10.5 % p.a.
- No. of days in a year to be traded as 365 days

Required :

(i) **Calculate** the value of Beta of Security BZ.

(ii) **Analyse** the theoretical value of the Nifty Futures for February, 2025. Current value of Nifty is 13000. [**Given** : ln (1.105) = 0.0998, $e^{0.015858}$ = 1.01598 and $e^{0.01668}$ = 1.01682]

(iii) **Identify** the number of contract of Nifty the investor needs to sell to get a full hedge until February, for his portfolio, if the current value of Nifty is 13000 and Nifty Futures have a minimum trade lot requirement of 100 units. **Assume** that the Futures are trading at their fair value.

(iv) **Assess** the number of Future Contracts to be sold to the Customers if the new Beta of the Portfolio is 1.263. 7

(b) **HONT Ltd.'s** equity shares are presently selling at a price of ₹ 648. After 3 months the prices will either be ₹ 680 or ₹ 616 with respective probabilities 60% and 40%. There is a Call option on the shares of HONT Ltd., that can be exercised only at the end of three months at an exercise price of ₹ 640. The Risk-Free Rate of Interest is 6% per annum continuously compounding. No dividend was paid in the interim period.

Required :

(i) **Analyze** the value of three months Call option using the Binomial Model (Delta Method).

(ii) **Assess** the value of the put-option under put-call parity.

(iii) **Analyze** the expected values of the option and the stock price at the end of three months. 7

[**Given** : $e^{-0.015}$ = 0.985112, $e^{-0.03}$ = 0.970446, $e^{0.015}$ = 1.015113, $e^{0.03}$ = 1.030455]

(Approximate up to two decimal points.)

7. (a) **MR. ASHAN** is a Trader holding US Dollar. Actual exchange rates are quoted at the forex market as follows :

GBP / USD : £1 = $ 1.5715 – 1.5740
GBP / INR : £1 = ₹ 113.4407 – 113.4487
USD / INR : $1 = ₹ 85.5050 – 85.5085

There are no Transaction costs.

Required :

(i) **Analyze** if any arbitrage opportunity exists.

(ii) **Align** the steps, Mr. Ashan need to make a profit and **Assess** how much profit Mr. Ashan will make if he has USD 80,000 with him.

(Approximate upto 2 decimal points) 7

(b) **MedCare Devices Ltd.,** an Indian healthcare company, has recently signed a contract to import high-end diagnostic equipment worth USD 8 million, payable in six months. Given the volatility of the rupee, the CFO is concerned about the risk of a higher outflow at maturity. The treasury department is evaluating alternative hedging strategies. The following information is available:

Spot exchange rate (INR/USD): ₹ 83.70 / USD

6-month forward rate (INR/USD): ₹ 84.50 / USD

Interest rates (6-month, simple): India = 8% p.a.; USA = 3% p.a.

Option available: A 6-month USD call option (strike price ₹ 84.00) with premium of ₹ 1.20 per USD.

Possible spot rate scenarios after six months:

Probability	Rate
0.4	₹ 82.50/USD
0.6	₹ 86.00/USD

Required:

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

(ii) **Analyze** INR outflow if the company uses a money market hedge.

(iii) **Assess** and **analyze** the INR outflow under both scenarios using the option hedge and also the expected outflow.

(iv) **Advise** which hedge strategy provides the lowest certain cost. 7

8. (a) **In the Context of Digital Finance,** what is the Central Bank Digital Currency (CBDC)? **Align** the Potential Advantages of Central Bank Digital Currency (CBDC). 5

(b) "Global Depository Receipt (GDR) is a tool for Global Capital."— **In this Context, append** the key features of Global Depository Receipts. 5

(c) "In a Securitization Transaction, different types of Securities are structured and issued to Investors, depending on their risk-return preferences."— **In this Context, briefly analyze** the different types of Securities issued by the Special Purpose Vehicle (SPV) in Securitization Transactions (any four). 4