FINAL EXAMINATION

June 2019

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.
Working Notes should form part of the respective answers.
Wherever necessary, candidates may make appropriate assumptions and clearly state them.
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 end of this question paper.
This paper contains two sections, **A** *and* **B**. **Section A** *is compulsory and contains question no. 1 for* ***20 marks***. **Section B** *contains question numbers 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. 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) A company is considering four projects A, B, C and D with the following information:

	Project A	**Project B**	**Project C**	**Project D**
Expected NPV (₹)	60,000	80,000	70,000	90,000
Standard deviation (₹)	4,000	10,000	12,000	14,000

Which project will fit the requirement of low risk apetite?

(A) Project A

(B) Project B

(C) Project C

(D) Project D

(ii) From the following quotes of a bank, determine the rate at which Yen can be purchased with Rupees.

₹/£ Sterling	75·31 – 33
£ Sterling/Dollar ($)	1·563 – 65
Dollar ($)/Yen (¥)	1·048 / 52 [per 100 Yen]

(A) ₹ 124·02

(B) ₹ 142·02

(C) ₹ 412·02

(D) ₹ 214·02

(iii) The spot Value of Nifty is 4430. An investor bought a one month Nifty 4410 call option for a premium of ₹ 12. The option is:

(A) In the money

(B) At the money

(C) Out of the money

(D) Insufficient data

(iv) A certain mutual fund has a return of 17% with standard deviation of 3·5% and the sharpe ratio is 4. The risk free rate is

(A) 12·5%

(B) 4%

(C) 3%

(D) 7·5%

(v) The following information of a project are given below:

Expected cash flow (₹)	Probability
6,000	0·20
16,000	0·80

If certainty equivalent coefficient is 0·7, what will be certain (Risk less) cash flows of the project?

(A) ₹ 12,000

(B) ₹ 9,800

(C) ₹ 9,000

(D) ₹ 15,400

(vi) The spot and 6 months forward rates of US dollar in relation to the rupee (₹/$) are ₹ 74·532/75·4143 and ₹ 75·1278/76·2538 respectively. What will be the annualized forward margin (with respect to Ask price)?

(A) 2·42%

(B) 1·60%

(C) 2·23%

(D) 2·31%

(vii) B can earn a return of 18% by investing in equity shares on his own. Now he is considering a recently announced equity based Mutual Fund Scheme in which initial expenses are 1% and annual recurring expenses are 2%. How much should be Mutual Fund earn to provide B, a return of 18%?

(A) 18·18%

(B) 20·18%

(C) 22·18%

(D) 21%

(viii) You are given the following information of a stock:

Strike Price	₹ 400
Current stock price	₹ 370
Risk free rate of interest	5%

Theoretical minimum price of a European 6 months' put option after six months is

(A) ₹ 9·37

(B) ₹ 20·12

(C) ₹ 30·76

(D) ₹ 20·63

(ix) MS Ltd. is planning to invest in USA. The annual rates of inflation are 8% in India and 3% in USA. If spot rate is currently ₹ 75·50/$, what spot rate can the company expect after 3 years?

(A) ₹ 65·49

(B) ₹ 79·16

(C) ₹ 87·04

(D) ₹ 72·00

(x) If the covariance between the returns on a portfolio BC and returns on the market index is 25 and the variance of returns on the market index is 20, what will be the systematic risk of BC under the variance approach?

(A) 1·25

(B) 1·56

(C) 5·45

(D) 31·25

Section-B

Answer **any five** questions.

2. KJ Hospital wants to install a testing equipment. It wants to analyse whether to purchase the machine from a bank borrowing or to lease it from LR. The following information is given:

(i)	Cost of the equipment	₹ 50 lacs	to be paid at the beginning of the 1st year
(ii)	Life	5 years	
(iii)	Residual value	₹ 5 lacs	at the end of the 5th year
(iv)	Depreciation	Cost less residual value, written off equally p.a. for the life of the asset	
(v)	Annual Lease Rent	₹ 12 lacs	Payable at the end of each year from year 1 to year 5
(vi)	If asset is purchased, bank loan available at	10% interest per annum	Year-end payment includes ₹ 10 lacs each year towards principal and additionally, interest on the balance outstanding at the beginning of the year.
(vii)	Annual maintenance charges to be incurred by KJ if the equipment is purchased	₹ 2 lacs per annum	payable at the end of each year
(viii)	Tax rate applicable for KJ and LR	40%	Assume KJ and LR are profitable
(ix)	After-tax weighted average cost of capital	12% p.a.	For both LR and KJ
(x)	Long term capital gains tax	20%	LR (For sale value in excess of the residual value)

The lessor LR is an investor company that specializes in the leasing of various medical equipments across the country. LR would buy the equipment from its own funds, maintain the machine incurring ₹ 1 lac p.a. (year end). LR is confident of reworking the equipment at the end of 5 years at no extra cost and finding a rural hospital which would pay ₹ 13 lacs for it at the end of the 5th year. However, for its depreciation, it would write off equal amounts each year considering (i) to (iv) as for KJ. The lessor is also a profit-making company with a 40% corporate tax rate and 20% tax rate on long term capital gains.

(a) For KJ, present statements of discounted cash flows under the options of buying the machine with borrowed funds and leasing, using the appropriate discount rate. Present year wise annual cash flows (in ₹ lacs, up to two decimal places), without netting off, arrive at the sub totals of pre-discounted cash flows for each year and then apply PV factors (up to three decimals as given) and then arrive at the total present value Use '+' for inflows and '– or ( )' for outflows.

(b) Evaluate the viability of the proposal for the lessor LR. Comment on the situation. 16

3. (a) IP, an importer in India has imported a machine from USA for US $ 20,000 for which the payment is due in three months. The following information is given:

Foreign Exchange Rates (₹/US $)		
	Bid	Ask
Spot	74·60	74·90
3 months forward	75·50	75·90

Money Market Rates (p.a.) (Compounded annually)		
	Deposit	Borrowing
US $	6%	9%
Rupees	7%	11%

(i) Show with appropriate supporting calculations whether a money market hedge is possible or not.

(ii) Compute the cost (in annualized percentage) of a Forward Contract Hedge.

(iii) Present rupee outflows under (i) and (ii) and advise the importer on the best course of action to minimize rupee outflow.

(Exchange rate and values should be shown upto two decimal places) 8

(b) An investor had purchased a 4 month call option on the equity shares of N Ltd. of ₹ 10 of which the current market price is ₹ 132 and the exercise price is ₹ 150. You expect the price to range between ₹ 120 to ₹ 190. The expected share price of N Ltd. and related probability is given below:

Expected Price (₹)	120	140	160	180	190
Probability	0·05	0·20	0·50	0·10	0·15

You are required to compute the following:

(i) Expected share price at the end of 4 months

(ii) Value of call option at the end of 4 months, if the expected price prevails.

(iii) In case the option is held to its maturity, what will be the expected value of the call option? 8

4. (a) EC Limited is considering a new project with initial investment. It is estimated that IRR of the project is 16% having an estimated life of 5 years. The Finance Manager has studied that project with sensitivity analysis and informs that annual fixed cost sensitivity is 7·8416%, whereas cost of capital (discount rate) sensitivity is 60%.

Other information available are:

Profit Volume Ratio (P/V) is	70%
Variable cost	₹ 60 per unit
Annual Cash Flow (year end)	₹ 57,500

Ignore depreciation on initial investment and taxes.

Calculate:

(i) Initial investment of the project

(ii) Net Present Value of the project

(iii) Annual Fixed Cost

(iv) Estimated annual sales units

(v) Break Even Units 8

(b) The expected returns on two stocks for particular market returns are given in the following table:

Market Return	Stock A	Stock B
7%	4%	9%
25%	40%	18%

You are required to calculate:

(i) The beta of the two stocks.

(ii) The expected return of each stock, if the market return is 60% likely to be 7% and 40% likely to be 25%.

(iii) The security market line (SML), if risk free rate is 7·5% and market return is with likelihood as per (ii).

(iv) The Alpha of the two stocks. 8

5. (a) During a five year period, the relevant results for the aggregate market are that the risk-free rate (r_f) is 8% and the return on market (r_m) is 14%. For that period, the results of five portfolio managers are as follows:

Portfolio Manager	Actual Average Return (%)	Beta (β)
A	13	0·80
B	14	1·05
C	17	1·25
D	13	0·90
E	15	0·95

Using CAPM model, you are required to

(i) calculate the expected rate of return for each portfolio manager and compare the actual returns with the expected returns; and

(ii) find which of the mangers need to be warned for under-performance? 8

(b) A mutual fund made an issue of 20,00,000 units of ₹ 10 each at the beginning of the year. No entry load was charged. It made the following investments:

Particulars	**Amount (₹)**
1,00,000 Equity shares of ₹ 100 each @ ₹ 160	1,60,00,000
8% Government Securities	16,00,000
11% Debentures (unlisted)	10,00,000
10% Debentures (listed)	10,00,000
Total	1,96,00,000

During the year, dividends of ₹ 24,00,000 were received on equity shares. Interest on all securities was received for a full year as on the valuation date. Equity shares have a value of ₹ 180 per share as on valuation date and unlisted debentures are to be valued at 85% of the invested value. Initial expenses were ₹ 3 lacs, which are fully charged to the scheme in the first year. Up to the end of the year, operational expenses incurred were ₹ 4 lacs, of which ₹ 1·5 lacs remains payble next year. Just before the year end, 60,000 units were redeemed when the NAV was ₹ 12·5 NAV per unit and an exit load of 1% was charged. Find the NAV per unit as on valuation date which is at the end of the year. 8

6. (a) An investor has the following constituent holdings in his portfolio:

Security	No. of shares	Price per share (₹)	Share Beta
A	400	500	1·4
B	500	750	1·2
C	200	250	1·6

(i) Find the market value weighted average beta of his portfolio.

(ii) If the investor wants a target beta for his portfolio at 0·9, how would he dispose of his securities and replace them with Government securities if he want to sell in the order of risk? Present the revised tabulation of his holding and prove that the target beta has been achieved by your advice.

(iii) If he is willing to invest further, how much investment should he make in G Sec to make his beta 0·9, without selling any share at all? 10

(b) An 8·5% bond of ₹ 1,000 face value with five year maturity at par and a yield to maturity of 10% has ₹ 954·74 as the current market value. Calculate the price of the bond and compare it with the market price. What action should the holder of the bond take? 6

7. (a) Companies X and Y want to raise US$ 50 million each. They have been offered the following rates per annum:

Company	Fixed	Floating
X	7·5	LIBOR + 25 bps
Y	8·45	LIBOR + 37 bps

Bank B, on a commission of 0·2% (fully borne by Y) is arranging an interest rate swap between X and Y. X wants a floating rate and Y wants a fixed rate. Work out the payables and receivables on the swap (in %), given that the benefits (after commission) are shared between X and Y in the ratio 60 : 40. What will be the effective rate of interest payable by X and Y their respective gains (in %) due to the swap? How many dollars does each save per annum due to the swap? 8

(b) The US $ is selling in India ₹ 75·90. The interest rate for a 6 months borrowing in India is 10% per annum and the corresponding rate in US is 4%.

(i) Do you expect that US$ will be at a premium or at a discount in the Indian Forex Market? Why?

(ii) What will be the expected 6-months forward rate for US $ in India?

(iii) What will be the annualised rate of forward premium or discount? 8

8. Answer ***any four*** out of the following five questions:

(a) State the differences between Commercial Papre (CP) and Certificate of Deposit (CD) on the following aspects: 4

(i) Issuer

(ii) Conditions to be satisfied by an issuer to be eligible for an issue.

(b) State the differences between Indian Treasury Bills and Central Government securities on the following aspects: 4

(i) Purpose of issue

(ii) Tenor

(c) Name the most appropriate combined trading strategy on the stock of PQ Ltd. in the following independent cases. (You may present only columns I and II in your answer books.) 4

Sl. No.	Strategy	Action		Expiry Date	Strike Price
		Buy	Sell		
I	II	III	IV	V	VI
(i)		One call One put		30th June 30th June	215 215
(ii)			Two Calls One Put	20th June 20th June	220 220
(iii)			One Call Two Puts	20th June 20th June	230 230
(iv)		One call One Put		20th June 20th June	215 220

(d) State the differences between the commodity market and equity market futures in the following aspects: 4

(i) Initial Margin

(ii) Basis of price movements

(e) How would you choose indivisible projects under capital rationing? Can there be a situation where a project with lower NPV is chosen while discarding a project with higher NPV? Explain. 4

PV Factor Table:

End of Year / Rate	1	2	3	4	5
4%	0·962	0·925	0·890	0·855	0·822
4·8%	0·954	0·910	0·869	0·829	0·791
6%	0·943	0·890	0·840	0·792	0·747
7·2%	0·933	0·870	0·812	0·757	0·706
8·5%	0·922	0·849	0·783	0·722	0·665
10%	0·909	0·826	0·751	0·683	0·621
12%	0·893	0·797	0·712	0·636	0·567

Annuity Factors

4 yrs	5 yrs
3·632	4·454
3·562	4·353
3·465	4·212
3·372	4·078
3·276	3·941
3·169	3·791
3·038	3·605

$e^{·0225}$	1·0228	$e^{-0·0225}$	0·978
$e^{0·025}$	1·02532	$e^{-0·25}$	0·975
$e^{0·225}$	1·2523	$e^{-0·225}$	0·799
$e^{0·25}$	1·2840	$e^{-0·025}$	0·779
$e^{0·5}$	1·6458	$e^{-0·5}$	0·608

Annuity factors for 5 years:

Rate	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%
Factor	3·993	3·890	3·791	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127