FINAL EXAMINATION

June 2017

P–14(SFM)
Syllabus 2016

Subject: 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 your 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.
*This paper contains two sections, **A** and **B**. **Section A** is compulsory and contains question 1 for 20 marks. **Section B** contains question 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 amongst the four alternatives given (1 mark is for the correct choice and 1 mark for justification/workings) 2×10=20

(i) Annual Cost Saving ₹ 4,00,000
Useful life 4 years
Cost of the Project ₹ 11,42,000
The Pay back period would be
(A) 2 years 8 months
(B) 2 years 11 months
(C) 3 years
(D) 1 year 10 months

(ii) There are 4 investments

	X	Y	Z	U
The standard deviation is	37,947	44,497	42,163	41,997
Expected net present value (₹)	90,000	1,06,000	1,00,000	90,000

Which investment has the highest risk?
(A) X
(B) Y
(C) X
(D) U

(iii) The spot rate of the US dollar is ₹ 65.00/USD and the four month forward rate is 65.90/USD. The annualized premium is

(A) 4.2%
(B) 5.1%
(C) 6.0%
(D) 6.4%

(iv) A stock is currently sells at ₹ 350. The put option to sell the stock sells at ₹ 380 with a premium of ₹ 20. The time value of option will be

(A) ₹ 10
(B) ₹ -10
(C) ₹ 20
(D) ₹ 0

(v) An investor owns a stock portfolio equally invested in a risk free asset and two stocks. If one of the stocks has a beta of 0.75 and the portfolio is as risky as the market, the beta of the stock in portfolio is

(A) 2.12
(B) 2.25
(C) 2.56
(D) 2.89

(vi) You are given the following information: required rate of return on risk free security 7%; required rate of return on market portfolio of investment 12%; beta of the firm 1.7. The cost of equity capital as per CAPM approach is

(A) 16.3%
(B) 18.0%
(C) 18.60%
(D) 19%

(vii) The following statement is true in the context of rupee-dollar exchange rate with r_i denoting interest rate in India and r_u denoting interest rate in the US.

(A) Rupee will be at forward discount if $r_i > r_u$
(B) Rupee will be at forward premium if $r_u > r_i$
(C) Rupee will be forward premium if $r_i > r_u$
(D) Rupee will be at par with dollar if $r_i = r_u$.

(viii) The following is not a systematic risk.

(A) Market Risk

(B) Interest Rate Risk

(C) Business Risk

(D) Purchasing Power Risk

(ix) The following statement is true:

(If 'r' denotes the correlation coefficient)

(A) $r = +1$ implies full diversification of securities in a portfolio

(B) $r = -1$ implies full diversification of securities in a portfolio

(C) $r = 0$ implies an ideal situation of zero risk

(D) 'r' is independent of diversification. Nothing can be inferred based on r.

(x) The following is not a feature of Capital Market Line:

(A) There is no unsystematic risk.

(B) The individual portfolio exactly replicates market portfolio in terms of risk and reward.

(C) Estimates portfolio return based on market return.

(D) Diversification can minimise the individual portfolio risk.

SECTION – B

Answer *any five* questions from question No. *2* to *8*. *Each question carries 16 marks.*

2. (a) A Ltd. is considering replacement of an existing machine or to spend money on overhauling it. A Ltd currently pays no taxes. The replacement machine costs ₹ 50,000 now and requires maintenance of ₹ 5,000 at the end of every year for 5 years. At the end of 5 years, it would have a salvage value of ₹ 10,000 and would be sold. The existing machine requires increasing amounts of maintenance each year and its salvage value falls each year as follows:

Year	Maintenance (₹)	Salvage (₹)
Present	0	20,000
1	5,000	12,500
2	10,000	7,500
3	15,000	0

The cost of capital of A Ltd is 15%.

End of year	1	2	3	4	5	6
Present value factor @ 15%	0.8696	0,7561	0.6575	0.5718	0.4972	0.4323

When should the company replace the machine? 8

(b) The following information pertaining to two securities is given:

	Securities	
	A Ltd.	B Ltd.
Spot Price (₹)	4550	360
Dividend expected (₹)	50	20
Divided receivable in (months)	2	3
Recommended Action:	Sell Spot, Buy Futures	Buy Spot Sell Futures

Risk free interest rate may be taken as 9% p.a.

(i) Determine the 6 months' theoretical forward prices of securities of A Ltd. and B Ltd. For what values of futures contract rates will the above recommended action be appropriate?

(ii) What would your answer to (i) above be if there is no dividend expected for A and B? 8

3. (a) A Mutual Fund made an issue of 10,00,000 units of ₹ 10 each on 01.01.2016. No entry load was charged. It made the following investments after incurring initial expenses of ₹ 2 lacs.

Particulars	₹
50,000 Equity Shares of ₹ 100 each @ ₹ 160	80,00,000
7% Government Securities	8,00,000
9% Debentures (unlisted) of ₹ 100 each	5,00,000
10% Debentures (Listed) of ₹ 100 each	5,00,000
Total	98,00,000

During the year, dividends of ₹ 12,00,000 were received on equity shares, interest on all types of debt securities was received as and when due. At the end of the year, equity shares and 10% debentures are quoted at 175% and 90% of their respective face values. Other investments are quoted at par.

(i) Find out the Net Asset Value (NAV) per unit given that the operating expenses during the year amounted to ₹ 5,00,000.

(ii) Also find out the NAV, if the Mutual Fund had distributed a dividend of ₹ 0.90 per unit during the year to the unit holders. 8

(b) H L Manufacturing Ltd. desires to acquire a diesel generating machine set costing ₹ 40 lakh which has an economic life of 10 years at the end of which the asset is not expected to have any residual value. The company is considering two alternatives: (a) taking the machine on lease (b) purchasing the asset outright by raising a loan.

Lease payments are equal annual amounts and have to be made in advance and the lessor requires the asset to be completely amortized over its useful period. The loan carries an interest 16% p.a. The loan has to be paid in 10 equal annual instalment becoming due at the beginning of the first year. Average rate of income tax is 50%. It is expected that the operating costs would remain the same under either method. The company allows straight line method of depreciation and the same is accepted for tax purposes.

Assume tax benefits at the end of the respective years and for end of year zero, tax benefit may be considered at the end of the first year. Use 8% discount rate for p.v. factors. Present a statement showing discounted values of annual cash flows to the nearest rupee under alternative (b), only for end of years 0 to 2 and year 10. What should be the maximum annual lease rental for which the lease option may be preferred if you are given that the present value under the loan option is ₹ 26,57,029?

The present value of an annuity of one Rupee

Year	8%
1 to 9	6.247
1 to 10	6.71

Present value of Rupee one at 8%

Year	0	1	2	3	4	5	6	7	8	9	10
PV	1.00	0.926	0.857	0.794	0.735	0.681	0.630	0.583	0.540	0.500	0.463

8

4. (a) A firm has an investment proposal, requiring an outlay of ₹ 40,000. The investment proposal is expected to have 2 years' economic life with no salvage value. In year 1, there is a 0.4 probability that cash in flow after tax will be ₹ 25,000 and 0.6 probability that cash inflow after tax will be ₹ 30,000. The probabilities assigned to cash inflows after tax for the year 2 are as follows:

The Cash inflow year 1	₹ 25,000		₹ 30,000	
The Cash inflow year 2		Probability		Probability
	₹ 12,000	0.2	₹ 20,000	0.4
	₹ 16,000	0.3	₹ 25,000	0.5
	₹ 25,000	0.5	₹ 30,000	0.1

The Firm uses a 12% discount rate for this type of investment.

(i) Tabulate the NPVs for each path of the decision free (diagram not essential)

(ii) What net present value will the project yield if the worst outcome is realized? What is the probability of occurrence of this NPV.

(iii) What will be the best outcome and the probability of that occurrence?

(12% Discount factor 1 year 0.8929
2 year 0.7972) 8

(b) The following details are given about stocks X and Y. An analyst prepared ex-ante probability distribution for the possible economic scenarios and the conditional returns for the two stocks and the market index as shown below:

Economic Scenario	Probability	X	Y	Market
Growth	0.4	25	20	18
Stagnation	0.3	10	15	13
Recession	0.3	-5	-8	-3

The risk free rate during the next year is expected to be around 9%.

The following additional information is known:

	X	Y	Market
Standard Deviation %	12.46	12.03	8.89
Covariance with the market	106.20	106.69	

(i) Find the expected returns of X, Y and the market using the probability distribution.

(ii) Find the Beta of X and Y.

(iii) Find the expected returns of X and Y under CAPM and recommend whether to buy or hold stocks X and Y. 8

5. (a) An investor has invested ₹ 10,00,000 in four securities A, B, C and D the details of which are as follows:

Security	Amount Invested (₹)	Beta
A	250000	0.500
B	300000	1.400
C	160000	0.900
D	290000	1.300
Total	1000000	

Reserve Bank of India (RBI) bonds carry an interest rate of 9% and NIFTY yields 15%.

You are required to find out the expected return on portfolio. If investment in security C is replaced by RBI Bonds, what is the corresponding change in portfolio beta and expected return? 10

(b) ABC Ltd. has a capital budget of ₹ 2 crore for the year. From the following information relating to six independent proposals, select the projects if (i) the projects are divisible and (ii) projects are indivisible in order to maximise the NPV.

Proposal	Investment (₹)	NPV (₹)
I	8,500,000·00	5,000,000·00
II	3,500,000·00	2,600,000·00
III	6,000,000·00	2,000,000·00
IV	4,000,000·00	2,500,000·00
V	6,000,000·00	5,000,000·00
VI	8,000,000·00	(2,500,000·00)

6

6. (a) Company A has outstanding debt on which, it currently pays fixed rate of interest at 9.5%. The company intends to refinance the debt with a floating rate interest. The best floating rate it can obtain is LIBOR + 2%. However, it does not want to pay more than LIBOR.

Another company B is looking for a loan at a fixed rate of interest to finance its exports. The best rate it can obtain is 13.5% but it cannot afford to pay more than 12%. However, one bank has agreed to offer finance at a floating rate of LIBOR + 2% and is in the process of arranging rate swap between these two companies.

(i) Enumerate the steps in the swap deal.

(ii) What are the interest savings by each company?

(iii) How much would the bank's benefit be? 10

(b) JB ltd. an American Company will need £ 3,00,000 in 180 days. In this connection, the following information is available :

Spot rate £1= $2·00

180 days forward rate of £ as of today = $ 1·96

Interest rates are as follows:

	U.K	US
180 days deposit rate %	4·50	5·00
180 days borrowing rate %	5·00	5·50

The Company has forecast the spot rates 180 days hence as follows:

	Rate	Probability
$	1.91	25%
$	1.95	60%
$	2.05	15%

Compare the benefits of money market hedge Vs. Nod hedge and advise JB Ltd. on the choice of the better strategy. 6

7. (a) The equity share of VCC Ltd., is quoted at ₹ 210. A 3-month call option is available at a premium of ₹ 6 per share and a 3-month put option is available at a premium of 5 per share.

Ascertain the net pay-offs to the option holder of a call option and a put option if

(i) The strike price in both cases is ₹ 220 and

(ii) The share price on the exercise days is ₹ 200, 210 220, 230 and 240. 8

[on the expiry day for what threshold values of share price will each option holder be in the money?]

(b) Stock P has a beta of 1·50 and a market expectation of 15% return. For stock Q, it is 0·80 and 12·50% respectively. If the risk free rate is 6% and the market risk premium is 7%, evaluate whether these two stocks are priced correctly. Hence recommend the appropriate action to be taken for each stock. For what value of β of stock P would you reverse your decision above for stock P? 8

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

(a) What are the tools and techniques used by RBI to maintain financial stability? 4

(b) Distinguish between commodity futures and financial futures with respect to the following aspects:

(i) Valuation

(ii) Delivery and settlement

(iii) Contract features and life

(iv) Supply and consumption pattern 4

(c) List the steps involved in raising equity through American Depositary Receipts (ADR). 4

(d) Write a short note on price based auction in securities market. 4

(e) What are the constituents of an interest rate cap? 4

Candidates may use relevant values from the following:

$e^{0·015} = 1 · 01511$

$e^{0·225} = 1 · 022755$

$e^{0·045} = 1 · 04603$

$e^{0·03} = 1 · 030455$

PV factor $\left(\frac{1}{1+x}\right)^n$

End of Year n	1	2	3	4	5
x% 12	0·8929	0·7972	0·7118	0·6355	0·5674