FINAL EXAMINATION

June 2017

P–14(AFM)
Syllabus 2012

Advanced Financial Management

Time Allowed: 3 Hours

Full Marks: 100

The figures on the right margin indicate full marks.

All workings must form part of your answers.

Wherever necessary, suitable assumptions may be made and clearly stated in the answer.

No present value table or other statistical table will be provided in addition to this question paper.

Candidates may use relevant values from the information given at the end of the question paper for computation of answers.

*This paper contains two sections, **A** and **B**. **Section A** is compulsory and contains question **1** for **20** marks. **Section B** contains questions **2** to **8**, each carrying **16** marks. Answer **any five** questions from **Section B**.*

Section A

1. (a) Answer *all* questions: 2×7=14

(i) An investor buys a call option contract for a premium of ₹ 150. The exercise price is ₹ 15 and the current market price of the share is ₹ 12. If the share price after three months reaches ₹ 20, what is the profit made by the option holder on exercising the option? Contract is for 100 shares. Ignore the transaction charges.

(ii) Mr. Ravi Kumar can earn a return of 18% by investing in equity shares on his own. Now he is considering recently announced equity based mutual fund scheme in which initial expenses are 6·70% and annual recurring expenses are 1·7%. How much should the mutual fund earn to provide Mr. Ravi Kumar a return of 18 per cent?

(iii) CNX Nifty is currently quoting at 9100. Each lot is 75. An investor purchases a May Futures contract at 9200. He has been asked to pay 5% margin. What amount of initial margin is he required to deposit? To what level NIFTY futures should in increase to get a gain of 4%?

(iv) The strike price and the current stock price of a European put option are ₹ 1,000 and ₹ 925 respectively. Compute its theoretical minimum price after 6 months, if the risk-free rate of interest is 5% p.a.

(v) P Ltd. has an EPS of ₹ 75 per share. Its Dividend Payout Ratio is 30%. Earnings and dividends of the company are expected to grow at 6% per annum. Find out the cost of equity capital if its market price is ₹ 300 per share.

(vi) An investor has three alternatives of varying investment values. The data available for each of these alternatives are given below:

Alternative	**Expected Return (%)**	**Standard Deviation of Return (%)**
I	23	8·00
II	20	9·50
III	18	5·00

Which alternative would be the best if coefficient of variation is used?

(vii) A student ordered a book from USA on 01·05·2017 for $ 90, when the spot rate was ₹ 68·50/ $. Payment was made ten days later, on 11·05·2017 when the book was delivered. By this time, the rupee had appreciated by 10%. How much did it cost the student in Rupees? (Ignore transaction and delivery cost).

(b) State whether the following are 'True' or 'False'. (You may write only the question Roman numeral and state whether True or False without copying the statements into the answer books.): 1×6=6

(i) The risk free interest rate in the futures market is called repo rate.

(ii) Proxy Beta is the beta of an unlevered firm.

(iii) CAPM gives the expected return based on systematic risk.

(iv) If the interest rate is 10% p.a. and the inflation rate is 2% p.a., the investor of an inflation bond earns 12·20%.

(v) The writer of an uncovered call option does not own the underlying stock.

(vi) A security is underpriced if the actual return is above the Security Market Line.

Section B

Answer ***any five*** questions from question number 2 to 8.

Each question carries 16 marks.

2. (a) The following particulars are furnished about three mutual funds scheme A, B and C.

Particulars	Scheme A	Scheme B	Scheme C
Dividend Distributed	₹1·60	-	₹ 1·15
Capital Appreciation	₹ 2·77	₹ 3·33	₹ 1·79
Opening NAV	₹ 30	₹ 25·15	₹ 21·50
Beta	1·40	1·10	1·35

Ascertain Jensen's Alpha of the three schemes and evaluate their performance, if government of India Bonds carry an interest rate of 6·64% and the NIFTY has increased by 12%. 9

(b) A mutual fund has an NAV of ₹ 12·50 per unit at the beginning of the year. At the end of the year the NAV increases to ₹ 13·40. In the meanwhile the Fund distributes ₹ 0·85 as dividend and ₹ 0·70 as capital gains.

(i) Calculate the fund's rate of return during the year.

(ii) Assuming that the investor had 240 units and that the distributions have been reinvested at an average NAV of ₹ 12·80, find out the rate of return. 7

3. (a) The following two way quotes appear in the Foreign Exchange Market

	Spot	Three Months' Forward
₹ / US $	₹ 66/66·25	₹ 67/67·50

(i) By what % has the Dollar currency changed? Indicate the nature of change. (Answer with reference to the ask rate).

(ii) By what % has the Rupee changed? Indicate the nature of change. (Answer with reference to the bid rate).

(iii) How many US Dollars should a firm sell to get ₹ 45 lakhs after three months?

(iv) How many rupees is the firm required to pay so as to obtain US $ 2,20,000 in the spot market?

(v) Assume that the firm has US $ 90,000 in current account earning interest. Return on rupee investment is 10% per annum. Should the firm encash the US $ now or 3 months later? 8

(b) The returns on Stock PQ and market portfolio for a period of 4 years are as follows:

Year	Return on PQ(%)	Return on Market portfolio (%)
1	12	8
2	15	12
3	11	11
4	2	(–) 4

You may opt to use the following additional information:

Particulars	PQ	Market
Mean Return (%)	10	6·75
Standard Deviation (%)	4·84	6·38
Covariance of stock with market = 29·75		

You are required the determine the Characteristic Line for Stock PQ. Find the expected return on PQ when market return improves to 5% in year 5 or decreases to – 8% in the 5th year. 8

4. (a) P Ltd. exports electronic instruments to importers of USA, and Japan on 180 days credit terms. You are given the following information of the company:

Cost and sales information

Particulars	Japan	USA
Variable cost per unit	₹ 600	₹ 1560
Export sale price per unit	Yen 1200	USD 30·50
Receipts from sale due in 180 days	Yen 120,00,000	USD 3,05,000

Foreign Exchange Rate information

Particulars	Yen/₹	USD/₹
Spot Market	1·693 – 1·714	0·01610 – 0·01670
6-Months Forward	1·701 – 1·712	0·01652 – 0·01662
6-Months Spot	1·719 – 1·733	0·01658 – 0·01661

You are asked to advise P Ltd. whether it should hedge its foreign currency risk or not. Present relevant figures in support of your advice. 8

(b) The following data relates to DCB Ltd.'s share prices:

Current Price Per Share ₹ 180

Price per share in the futures ₹ 200

Market – 6 months

It is possible to borrow money in the market for securities transaction at the rate of 12% p.a.

(i) Calculate the theoretical minimum price of 6 months–Futures contract.

(ii) Explain if any arbitraging opportunities exist. 8

5. (a) A holds the following portfolio:

Share/Bond	Beta	Initial Price ₹	Dividend ₹	Market price at the end of year ₹
A Ltd.	0·9	30	3	60
B Ltd.	0·8	40	3	70
C Ltd.	0·6	50	2	150
G Bonds	0·01	1000	140	1010

Risk Free return is 14%

Calculate:

(i) The expected rate of return on his portfolio using Capital Asset Pricing (CAPM)

(ii) The average return of his portfolio. 8

(b) Delta Corporation is considering an investment in one of following two mutually exclusive proposals:

Project A: requiring initial outlay of ₹ 1,80,000.

Project B: requiring initial outlay of ₹ 1,60,000.

The certainty equivalent approach is employed in evaluating risky investment. The current yield on treasury bill is 5% and the company uses this as riskless rate. Expected values of net cash inflow with their respective certainty equivalents are:

Year	Project A		Project B	
	Cash in flow ₹	Certainty Equivalents	Cash in flow ₹	Certainty Equivalents
1	92,000	0·8	92,000	0·9
2	1,02,000	0·7	92,000	0·8
3	1,12,000	0·5	1,02,000	0·6

(i) Which Project should be acceptable to the Company?

(ii) Which Project is riskier and why? Explain.

(iii) If the company uses the risk adjusted discount rate method, which project would be discounted with higher rate? 8

6. (a) IB and BT face the following interest rates:

Particulars	IB	BT
US Dollars (Floating Rate)	LIBOR + 1·5%	LIBOR + 2·0%
Great Britain Pound (GBP) (Fixed Rate)	6·0%	7·5%

IB wants to borrow US Dollars at a floating rate of interest and BT wants to borrow GBP at a fixed rate of interest. A bank is willing to act as intermediary with 50 basis point as its remuneration. If the swap is attractive to IB and BT at 60 : 40 ratio, calculate the rates of that IB and BT will end up paying. 10

(b) Enumerate the important functions of Forward Market Commission of India. 6

7. (a) A contract has been made between M & T Construction Company Ltd. and a foreign embassy to build a block of ten flats to be used by the foreign embassy as guest houses. As per the terms of the contract the foreign embassy would provide the plans and the land costing ₹ 50 lakh to M & T Construction Company Ltd. The Company would build their flats at their own cost and lease them to the foreign embassy for 15 years. As per the contract the flats will be transferred to the foreign embassy after 15 years at a nominal value of ₹ 16 lakh. The company estimates the cost of construction as follows:

Area per flat	1500 sq. feet
Construction cost	₹ 1200 per sq. feet
Registration and other costs	5% of cost of construction

The company will also incur ₹ 8 lakh each in years 14 and 15 towards repairs of flats. M & T Construction Company Ltd. proposes to charge the lease rentals as follows:

Years	Rentals
1–5	Normal
6–10	130% of the normal
11–15	150% of normal

The company's present tax rate averages at 35% which is likely to be the same in future. The full construction and registration costs will be written off over 15 years at a uniform rate and will be allowed for tax purposes.

Additional information: (a) Minimum desired rate of return 10% (b) Rentals and Repairs will arise on the last day of the year and (c) construction, registration and other costs will be incurred at the beginning of the project (t=0).

Calculate the normal lease rent per annum per flat. 12

(b) State the differences between the characteristics of Capital Asset Pricing Model (CAPM) and Behavioral Asset Pricing Model (BAPM) relating to model premise, expected returns, Beta and supply/Demand for stock. 4

8. (a) An investment management company wants to hedge its portfolios of shares worth ₹ 15 crore using NSE-NIFTY index futures. The contract size is 100. The index is currently quoted at 9120. The beta of the portfolio is 0·8. The beta of the index may be taken as 1. How many contacts to be traded by the investor? 5

(b) An investor is holding 2,000 shares of Banani Ltd. Presently the dividend being paid by the company is ₹ 3 per share and the share is being sold at ₹ 30 per share in the market. However several factors are likely to change during the course of the year as indicated below:

	Risk Free Rate	**Market Risk Premium**	**Beta Value**	**Expected Growth Rate**
Existing	13%	6%	1·7	6%
Revised	11%	5%	1·5	10%

In view of the above factors advise whether the investor should buy, hold or sell the shares? Why? 5

(c) State the features of Treasury bills. 6

Values for use if required:

End of Year	**1**	**2**	**3**	**4**	**5**
P.V. factor for 5%	0.9524	0.9070	0.8638		
10%	0.9091	0.8264	0.7513	0.6830	0.6209

P.V. Annuity Factor @ 10%
Year 1 to 5 = 3.7907
Year 6 to 10 = 2.3538
Year 11 to 15 = 1.4615