December 2012

Master of Business Administration (MBA) Examination

IV Semester

Financial Engineering & Risk Management

Time : 3 Hours] [Max. Marks : 80

Note : Attempt any four questions from Section A (All questions carry 15 marks each) and Section B is compulsory and carries 20 marks.

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Section A

1. (a) State briefly the risk management process.
   (b) Write a note on Indian derivates market.
2. Forward contract is the contract of contingent claims. Why ? What are the advantages and disadvantages of such type of contracts ? What was the solution to such types of problems and how that solution was responsible to overcome such issues ?
3. How does the swap contract can be responsible to manage asset and liability of the bank? Explain with example.
4. Discuss the following :
   (a) Banking Credit Risk
   (b) Liquidity Risk
   (c) Financial Distress.
5. How will you prove that the present value of difference between the premium of call and put options on the same stock with same time to expiry is always equal to the difference between the future price of the same stock with same time to expiry and exercise price of the options?
6. Discuss the following :
   (a) Block Scholes Model
   (b) Delta
   (c) Over the counter exchange option.
7. What is stock index future ? Discuss the mechanism of future with example.

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Section B

(A) An airplane company decides to take a long hedge position in crude oil contract with a fear of price fluctuation in the spot price of jet fuel. How many contracts should the company take to minimize the risk of hedging, assuming that the contract size is of 2000 barrels of crude oil and company wishes to buy 10,000 barrels of jet fuel in the coming time. Also given that the following data :

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S. No.	Past price of jet fuel in the spot market per barrel	Past price of crude oil in the exchange per barrel
1	30	15
2	35	18
3	32	20
4	28	17
5	34	19
6	29	21

(B) The stock options on ACC shares are presently trading as under :

Instrument	Expiry date	Strike price (Rs.)	Option premium	Multiple
Call option	08.11.2001	100	8	1500
Call option	08.11.2001	110	3	1500
Call option	22.11.2001	110	8	1500
Put option	08.11.2001	100	4	1500
Put option	08.11.2001	110	9	1500
Put option	22.11.2001	120	20	1500

Current market price of an ACC shares is Rs. 110.

Considering expiration day stock prices may take any value from Rs. 80 to Rs. 140, you are required to :

(a) Show the pay off table and diagram for the strategy an investor should follow if he thinks that :

(i) The stock is risky but does not know which way the price will move and assigns equal probability for upward and downward change.

(ii) The stock is risky but probability of a price falling is greater than the probability of a price rise.

(b) Calculate the break-even price (i.e. where the net cash flow is zero) and the maximum loss from the above two strategies.

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