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Total Number of Pages : 02

MBA
15MNG305B

3rd Semester Regular Examination 2017-18

Financial Derivatives (FD)

BRANCH : MBA

Time : 3 Hours

Max Marks : 100

Q.CODE : B685

Answer Question No.1 and 2 which are compulsory and any four from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions : **(2x10)**

- a) What categories of investors / traders use derivatives?
- b) A rice farmer is happy to note that the price per kg for the type of rice that his farm produces is around Rs.15 now. However, the farmer will get the crops only after two months. He fears that the prices might fall in the meantime. How can the farmer use forwards to reduce his risk?
- c) Will forwards always result in profit? Under what circumstances will a trader feel that he would have been better off without the forward?
- d) What is margin? Is this applicable only to futures contracts?
- e) What is basis risk? Is it important in hedging?
- f) What is convergence? Why does it occur?
- g) How are options different from futures?
- h) Is buying the call same as writing a put?
- i) Under what circumstances are : (a) a short hedge and (b) a long hedge suitable ?
- j) Name stock exchanges where derivatives are traded in India.

Q2 **(2x10)**

- a) In index futures, the spot value is represented by -----.
- b) The principle of convergence is useful in-----.
- c) When the basis weakens futures price-----the spot price.
- d) The maximum amount that a person can gain from a European call is-----.
- e) It is not possible to determine maximum losses in (strangle/ straddle/spread)
If stock price is 30,present value of exercise price is 25 and call price is 6, the corresponding put must be -----
- f) If stock price is 30,present value of exercise price is 25 and call price is 6, the corresponding put must be -----
- g) The maximum number of periods for which the binomial model can be used for price determination is.....
- h) An employee stock option can be thought of as-----
- i) Margins are levied in futures contract from-----of futures
- j) In a -----portfolio,a different set of assets is used involving the same investment.

Q3 a) Explain the features of an OTC market. What are the advantages of OTC contract vis-à-vis exchange traded contracts? **(7.5)**

b) Briefly discuss the factors contributing to the growth of financial derivatives **(7.5)**

Sketch the polar plots i) $G(s)H(s) = \frac{1}{1+ST}$ ii) $G(s)H(s) = \frac{1}{S(1+ST)}$

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Q4 a) From the following information find the value of a forward contract: **(7.5)**

Date of contract: 1st April, 2014

Date of maturity: 31st December 2014

Forward price as on 1st April 2014 with expiry date 31st December 2014: Rs.20,000/-

Forward price as on 1st July 2014 with expiry date 31st December 2014: Rs.25,600/-

Rate of interest: 6%

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b) What is margin money? What are different forms of margin money? **(7.5)**

Q5 a) Calculate the profit or loss from the following transactions: **(7.5)**

Spot price: Rs.31,000

Interest Rate: 7% per annum

Storage cost: 3% of commodity per annum

Transportation cost: Nil

Use cost of carry model.

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b) What is option moneyness? Explain the following concepts in context of option moneyness. **(7.5)**

In-the-money, Out-of-the money, At the money

Q6 a) What are the different types of financial derivatives? Explain their features in brief. **(7.5)**

There are three major participants in derivative markets. They are Hedgers,

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b) Speculators and Arbitrageurs. Explain their functions with suitable examples.¹⁰ **(7.5)**

Q7 a) Briefly explain the following arbitrage strategy of cost-of-carry model : **(7.5)**

Cash-and-carry arbitrage

Reverse cash-and-carry arbitrage.

b) Determine the futures price from the following data : **(7.5)**

Spot price of the commodity = Rs.90,000

Storage cost = 6% p.a. of spot price

Insurance cost = 4% p.a. of spot price¹⁰

Transportation cost = 3% (fixed)

Financing cost = 12% p.a.

Carry period = 6 months

Use cost-of-carry model.

Q8 What is Black-Scholes formula for option pricing ? What are the assumptions ? **(15)**

Discuss.