OCTOBER 2011 **P/ID 77539/PMHQ**

Time : Three hours Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE questions.

All questions carry equal marks.

1. How are options priced?

2. What does a stop order to sell at Rs. 20 mean? What does a limit order to sell at Rs. 20 mean? When might it be used?

3. What are the difference between forwards and futures?

4. Explain put call parity theorem.

5. A bank quotes an interest rate of 12% p.a. with quarterly compounding. What is the equivalent rate with (a) continuous compounding (b) annual compounding.

6. A non-dividend paying stock has a current price of Rs. 16. What will be futures price if the risk free rate is 9% and the maturity of the futures contract is 1 month?

7. A deposit account pays 9% p.a. with continuous compounding, but interest is actually paid quarterly. How much interest will be paid each quarter on a Rs. 10,000 deposit?

8. Explain what a stop limit order to sell at 20.30 with a limit of 20.10 means.

PART B — ($5 \times 10 = 50$ marks)

Answer any FIVE questions.

All questions carry equal marks.

9. Explain the use of foreign exchange derivative instruments in India.

10. Explain the difference between selling a call option and buying a put option with examples.

11. Discuss the facilities available in India for trading in futures contracts.

12. Consider the following data:

$S = 60$, $u = 1.2$, $d = 0.8$, $E = 50$, $r = 0.12$, $R = 1.12$

What is the value of the call option?

13. Suppose that you enter into a short futures contract to sell August gold for Rs. 520 per gram on the ABC Exchange. The size of the contract is 10 Kg. The initial margin is Rs. 5,00,000 and the maintenance margin is Rs. 3,00,000. What change in the future price will lead to a margin call? What happens if you do not meet the margin call?

14. A stock is currently selling for Rs. 40. The call option on the stock exercisable a year from now at a strike price of Rs. 45 is currently selling for Rs.8. The risk free interest rate is 10%. The stock can either rise or fall after a year. It can fall by 20%. By what percent can it rise?

15. The following data is available for Gem Papers Ltd., a company that is not expected to pay dividend for a year:

    S_0 = Rs.120, E = Rs.110, r = 0.14, σ = 0.4, t = 1.0

    What is the value of the call option as per the Black Scholes model?

16. The risk free rate of interest is 7% p.a. with continuous compounding and the dividend yield on a stock index is 3% p.a. The current value of the index is 150%. What is the six month futures price?

PART C — ($1 \times 20 = 20$ marks)

(Compulsory)

17. Case Study :

A investor buys 500 shares of a stock and sells five call option contracts on the stock. The strike price is Rs. 30. The price of the option is Rs. 3. What is the investor's minimum cash investment (a) if the stock price is Rs. 28 and (b) if it is Rs. 32.