MAY 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. Write short notes on Derivatives Market in India.

2. What does it mean to assert that the delta of a call option is 0.7? How can a short position in 1,000 options be made delta neutral when the delta of each option is 0.7?

3. Briefly explain about forward contracts? What are its limitations?

4. Vijay ‘wrote March 175 naked put option on XYZ Co stock. When the option was written, the stock sold for ₹180 per share. The option premium was ₹ 3. How much margin did Vijay have to deposit?

5. What is risk? How can risk of a security be calculated?

6. Following are the interest rates on a particular date :

	Borrowing rate	Lending rate
British £ (1 yr)	4.00% p.a.	4.25% p.a.
Indian ₹ (1 yr)	5.50% p.a.	6.00% p.a.
Spot rate (₹/£)	72.5000/8000	

Calculate the forward buying and selling rates.

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

8. Suppose you own 5,000 shares of ₹ 25 each. How can put options be used to provide you with insurance against a decline in the value of your holding over the next four months?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

All questions carry equal marks.

9. What are the main attractions to put and call options? What variables are involved in estimating their value?

10. Suresh Ltd. equity share currently sells for ₹ 22-50 per share. The finance manager of Suresh Ltd. anticipates a constant growth rate of 12% and an end of year dividend of ₹ 2-50.

    (a) What is your expected rate of return of you by the stock for ₹ 25?

    (b) If you require a 18% return, should you purchase the stock?

11. Explain the execution of forward contracts. How will you cancel and extend the contracts?

12. Establish the Binomial model for valuation of stock option.

13. The price of gold is currently ₹ 1,800 per gram. The forward price for delivery in one year is ₹ 2,500. An arbitrageur can borrow money at 10% p.a. What should the arbitrageur do? Assume that the cost of storing gold is zero and that gold provides no income.

14. A company enters into a short futures contract to sell 15,000 tonnes of sugar for ₹ 6,000 per tonne. The initial margin is ₹1 crore and the maintenance margin is ₹ 50 lakh. What price change would lead to a margin call? Under what circumstances could ₹ 25 lakh be withdrawn from the margin account?

15. Consider a European call option on stock when there are ex-dividend dates in 2 months and 4 months. The dividend on each dividend date is expected to be 0.50. Current price of share is \$ 40, the exercise price is \$ 40, the stock volatility is 30% p.a., the Rf = 9% p.a., and time to maturity is 6 months. Calculate the option price using Black Scholes model.

16. The stock option have 120 days until expiration and the strike price is ₹ 85. The simple rate of interest is 6% p.a. The underlying asset value is ₹ 80 and the volatility (standard deviation) is 0.30. Calculate the value of the stock option.

PART C — ($1 \times 20 = 20$ marks)

(Compulsory)

Case Study

17. HDFC bank wishes to borrow ₹ 50 crores at a fixed rate for 10 years and has been offered either 10% fixed or raise month LIBOR + 1% ICICI bank wishes to borrow ₹ 50 crores at a floating rate for 10 years and has been offered with six month LIBOR +0.5% or 9% fixed on the basis of above figures :

(a) How many they enter into swap arrangement in which each benefit equally?

(b) What risk may this agreement generate?

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