

VPM's
DR VN BRIMS, Thane
Programme: PGDM (2015-17) (Finance)
Fifth Trimester Examination December 2016

Subject	Derivatives & Risk Management		
Roll No.		Marks	60 Marks
Total No. of Questions	7	Duration	3 Hours
Total No. of printed pages		Date	26.12.2016

Note: Q1 is compulsory and solve any FOUR from the remaining SIX questions.

Q1) What are the assumptions of Black-Scholes option pricing model?

The Spot price of a stock is Rs.1560 and the volatility of the stock is 25% p.a. European style call and put options are available with exercise price of Rs.1550 and time to expiration of 2 months. The risk free interest rate is currently at 7% p.a. Calculate the call and put option prices based on Black-Scholes option pricing model when no dividend is expected during the life of the options. (20 Marks)

Q2) Answer any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- Explain hedging. What are the benefits of hedging? (5 Marks)
- Explain option based protective put buying strategy with an example. (5 Marks)
- What are the basic risks involved in the trading of derivatives instruments. (5 Marks)

Q3) Answer any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- Explain the following option Greeks in brief
 - Vega
 - Rho (5 Marks)
- Explain the effect of primary factors on pricing of a call option. (5 Marks)
- Explain and illustrate futures based Short hedge strategy. (5 Marks)

Q4) Answer any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- Explain profit and loss accruing to a buyer of a call option with an example. (5 Marks)
- What are the differences between futures contract and options contract? (5 Marks)
- Explain and illustrate futures based Reverse Cash and carry arbitrage strategy.(5 Marks)

Q5) Answer any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- Explain the following terms with reference to futures
 - Trading Volume
 - Open Interest (5 Marks)
- Explain the difference between hedgers and speculators with reference to derivatives market.(5 Marks)
- A trader wants to take buy position in 2 contracts of the stock futures which trades at Rs.1000 with a lot size of 500. Historical annualized volatility for the stock is 20%. Number of trading days in a year is 300. Based on the above information, calculate VaR for 99% 3 days trading horizon. (5 Marks)

Q6) Answer any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- Explain option based Short strangle strategy with an example. (5 Marks)
- Explain profit and loss accruing to a buyer of a futures contract with an example. (5 Marks)
- The standard deviation of change in prices of spot and futures contract is 0.06 and 0.05 respectively and the coefficient of correlation between change in prices of spot and futures contract is 0.90. Calculate and explain the optimal hedge ratio? (5 Marks)

Q7) Answer any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- What are the basic assumptions of the Cost of carry model of futures pricing in perfect market conditions? (5 Marks)
- A call option on a stock with strike price of Rs.1500 costs Rs.45 and a put option on the same strike price and expiration date costs Rs.40. Calculate and explain what range of the stock prices on the expiry would lead long straddle strategy to a loss. (5 Marks)
- Explain options based Bull call spread strategy with an example. (5 Marks)