

VPM's
DR VN BRIMS, Thane
Programme: PGDM (2017-19) (Finance)
PGDM Trimester V Examination December 2018

Subject	DERIVATIVES AND RISK MANAGEMENT		
Roll No.		Marks	60 Marks
Total No. of Questions	7	Duration	3 Hours
Total No. of printed pages	2	Date	26.12.2018

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

Q1) 20 Marks (Compulsory)

- An investor in India anticipated that the price of kapas will fall and so took a short position on Kapas. The investor short sold 100000 Kg Kapas. On 4 Jan, 2013, the investor anticipated that for the coming six months the price of kapas will rise. How should he hedge the risk for six month period? (10 Marks)
- An investor got a short future contract on a commodity with a future price of Rs. 5 per kg and the contract is for 10000 kg. The total value of one future contract is Rs. 50000. The initial margin is 10% and the maintenance margin is 5%. The deal can be seen as

Future price per kg	5.00	Initial Margin	10.00%	5000
Future contract kg	10000	Maintenance Margin	5.00%	2500

Calculate the mark to margin daily settlement assuming the prices? (10 Marks)

Attempt Any FOUR from the Remaining SIX Questions

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

- Classify the various method of calculation of historical volatility.
- Distinguish between the covered call and protective put option strategy?
- Compare the situation in which back testing and stress testing is used?

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

- Discuss the procedure for calculating the value of call option as per Black Scholes model
- Distinguish between the volatility smile and term structure of volatility?
- Classify the various option Greeks and how they can be used in formulation of option strategies?

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

- Distinguish between hedgers, speculator and arbitrage.
- Explain the CAPM framework for options
- Infer VaR from the following statement "10-day VaR with 99% confidence level is 1.1 crore".

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

- Create a short strangle for the following set of options

Short call exercise	100	Premium	25
Short put	120	Premium	10

- Outline the main points of Bear put spread?
- Explain Binomial option pricing models with examples. What are the variables needed in this model to calculate the option price?

Q6) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks.

- a) Using the CAPM Framework explain the beta of an option?
- b) Differentiate between forward and future?
- c) Explain the market conditions in which long/short call and put option are used.

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

- a) The Bank has Wipro and Power Grid shares with Correlation between the two are .35. The bank has invested 1500 lakh in Wipro and 500 Lakh in Power Grid. Calculate the value of VaR for the above portfolio.
- b) How is delta hedging strategy useful in making profit from the portfolio?
- c) The market is moderately bullish (expect the market to go higher but the expiry around the corner could limit the upside). Currently the market is trading at Nifty Spot – 10110. Construct a bull call spread.