PGDM & PGDM (IB), 2013-15

Derivatives & Risk Management

DM-411 / IB-408

Trimester – IV, End-Term Examination: September 2014

Time allowed: 2 Hrs 30 Min

Max Marks: 50

Roll No: ____________

Instruction: Students are required to write Roll No on every page of the question paper, writing anything except the Roll No will be treated as **Unfair Means.** In case of rough work please use answer sheet.

Part A (Attempt any three, 3*5 = 15 Marks)

Q 1 . RIL April FUT is available at 1050 & spot RIL is 1055 with a dividend of Rs. 100 per share on 21st of April. You are required to find dividend arbitrage. What will be the profit/loss if on Ex date 22nd April price of FUT is 975 & spot is 960. Advice your client when should he book profit. on expiry or on EX date.

Q 2. An investor bets a substantial change in the price of a stock but is not sure of the direction in which the change would take place. What different strategies involving options could he adopt? Explain the strategies.

Q 3 . a)Differentiate between call and put options. What are the rights and obligations of the holders of long and short positions?

b) How are European style options different from American style options?

Q 4. Discuss the various factors affecting the prices of options. Also indicate as to how each of these would affect the price of

i) call option, and ii) put option

Q 5. a) Explain the concept of cost of carry.

b) Also explain the concept of roll over.

Part B (Attempt any two, 2*10 = 20 Marks)

Q 1. October Soybean Oil futures are selling at 19.44 cents per Ib. The standard size of the contract is 60000 Ibs. Initial margin requirement is $3000 while the maintenance margin is $ 1500. If a trader goes long in October futures contracts and the prices on the subsequent 4 days are 19, 19.4, 19.6 and 19.8 cents/Ib, explain how the margin account changes & MTM account.

Q 2. P decides to create a 'Bull spread' by way of buying a Febuary 2013 call option on a stock, with an exercise price of Rs. 100 for Rs. 5 and selling a call option on it involving an exercise price of Rs. 110 for Rs. 2. find out how much profit / loss he makes in each of the following conditions;

(i) On settlement day, the price of the underlying stock is Rs. 95 per share.
(ii) On settlement day, the price of the underlying stock is Rs. 106 per share.
(iii) On settlement day, the price of the underlying stock is Rs. 113 per share.

Q 3. American call option on a non dividend paying stock where the stock price is $45, the strike price is $41, the risk free rate is 4% per annum, the volatility is 30% per annum, and the time to maturity is 6 months. Calculate the Value of option using binomial model.

Part C (Compulsory Case Study, 15 Marks)

Case Study

On January 2014, an investor has portfolio consisting of eight securities as shown below:

	Quantity	Price	Beta
A	500	50	1.59
B	700	40	1.32
C	1000	100	1.00
D	1200	80	0.35
E	500	60	1.16
F	400	80	1.24
G	300	10	1.05
H	200	20	0.75

The fund manager is willing to hedge the portfolio using nifty future and nifty options.

You are required to answer the following questions:

(a) Calculate the beta of his portfolio.

(b) How many lots of nifty futures are required to be sold or purchased in order to hedge the portfolio completely? What will be your answer in case the desired beta is .6. Using nifty future is 8000, Lot size = 50.

(c) Calculate the total premium required to buy put option contracts for hedging the above portfolio, put delta = -0.428, Exercise value =8100, Price of an option =Rs.48, Lot size=50.