Seat No.: ________ Enrolment No.___________

GUJARAT TECHNOLOGICAL UNIVERSITY

MBA – SEMESTER 4 – EXAMINATION – SUMMER 2018

Subject Code: 2840202 **Date:30/05/2018**

Subject Name: Risk Management (RM)

Time: 02:30 PM To 05:30 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Provide Table of Standard Normal Distribution, N(d), for Values of d ≤**

Q. No. Choose the correct option: **6**

Q.1 (a)

1. Spot value of Nifty is 2140. An investor buys one month Nifty 2157 call option for a premium of Rs. 7. The option is:
   A. ITM B. OTM
   C. ATM D. None of the above
2. Which of the following cannot be an underlying asset for the financial Derivative contract?
   A. Equity Index B. Commodities
   C. Interest Rate D Foreign Exchange
3. Typically option premium is :
   A. Less than the sum of intrinsic value and time value B. Equal to the sum of intrinsic value and time value
   C. Greater than the sum of intrinsic value and time value D. Independent of intrinsic value and time value.
4. The regulatory framework for the derivatives market in India has been developed by the :
   A. L C Gupta Committee B. A C Gupta Committee
   C. J R Verma Committee D. None of the Above
5. The NEAT- F & O trading system supports an:
   A. Order Driven market B. Price Driven Market
   C. Demand driven Market D. None of the above
6. A Stock is currently selling at INR 70. The call option to buy the stock at INR 65 costs INR 9. What is the time value of the option?
   A. INR 4 B. INR 3
   C. INR 5 D. INR 2

Q.1	**(b)**	Define the following terms: (i) Over the counter market (ii) Greeks in Option (iii) Marking- to- Market (iv) Market order and Limit order	**04**
Q.1	**(c)**	Discuss: Interest Rate derivative in India.	**04**
Q.2	**(a)**	What do you mean risk and Derivatives? What are the Derivatives and how it is used for management of Risk? Explain in detail.	**07**
	(b)	Define the forward and futures contract. Explain features of it and the various hedging strategies using futures contract.	**07**
		OR	
	(b)	Explain the Principle of Put call Parity with example.	**07**
Q.3	**(a)**	What do you mean by option contract? Explain the features option. Also explain the factors which affect option price.	**07**
	(b)	British airline uses 20000 barrels of aviation fuel every month. On January 1, British Airlines would like to hedge the price risk of aviation fuel for March and would like to enter into a futures contract with expiry on February 28. Since there are no futures on aviation fuel, the chief financial officer of British Airlines decides to enter into February Crude oil futures. The crude oil futures contract size is 100 barrels and the price of these futures on January 1, is USD 72 per barrel. The standard deviation of the fuel price is USD6, and the standard deviation of the crude oil futures price is USD 4. The Correlation between the aviation fuel price and the crude oil price is 0.90. How many futures contracts should British Airlines should enter into and what will be hedging effectiveness?	**07**
		OR	
Q.3	**(a)**	Gujarat Motors are selling are INR 991.55 on May 10. The contract size for Gujarat Motors is 200, and the futures expire on June 29. The Risk free interest rate is 7% (Continuous compounding) What will be the June futures price on May if no dividend will be paid before June 29?	**07**
	(b)	ITC share shares are selling at for INR 235 on April 18. Futures contract are available with maturity on April 29 and June 29. ITC is expected to pay dividend of INR 40 per share on June. The Risk free rate is 8%. Calculate the price at which futures contract of April 29, and June 29 is selling?	**07**
Q.4	**(a)**	Discuss the combination strategy of option trading with payoff in detail.	**07**

(b) The Contract Size of Bank of India options are 950. Bank of India shares are selling at INR 338 on September 1. Call options and put options are available with expiry on October 29 and with an exercise price of INR 350. It is expected that the Bank of India share price will be either INR 360 or INR 320. The risk free rate is 9%. Using Binomial option pricing Model, Calculate the call option price on 1st September. **07**

OR

Q.4 **(a)** How Option Spread strategy- Bull spread, Bear spread, and protective put can be created? Explain with examples. **07**

(b) Assume that Tata Motors is currently selling for INR 480. There is call option on Tata Motors with maturity of 90 days and an exercise price of INR 500. The volatility in the stock price is estimated to be 20%. The risk free rate is 8%. What will be the price of a call & put option that has maturity of 90 days as per Black and Scholes Model? **07**

Q.5 Hyundai motors exports cars to Germany, and every three months, it receives EUR 500,000 from car shipments. On March 1, the exchange rate between the Indian Rupee and Euro is EUR 1= INR 70.7242. The euro interest rate is 6% per annum, while interest rate in India is 9% per annum. Hyundai wants to hedge its euro receipt through forward contract for the next 6 months. The 180-days forward rate is EUR 1= INR 71.5642. **14**

(i) What type of hedging strategy could be suitable for Hyundai?
(ii) Calculate 90 days and 180 days theoretical forward rate.
(iii) Identify whether there is any arbitrage opportunity.
(iv) If there is an arbitrage opportunity, calculate the arbitrage profit for EUR 500,000.

OR

Q.5 You believe that the share price of Biocon is likely to increase from its price of INR 238.50 on March 15. There are futures contracts available on Biocon with expiry on June 30 at a futures price of INR 245. The contract size for Biocon futures is 1800 shares. You plan to buy 9000 Biocon shares on 30th June. Since the price at which you can buy Biocon shares on 30th June, is uncertain on March 15, you plan to hedge using futures. **14**

(i) What do you mean by hedge?
(ii) What type of hedging is appropriate?
(iii) Explain how you would hedge?
(iv) What would be the result of your hedge, that is, what is the effective price at which you would sell the shares if the price of Biocon shares on 30th June is INR 260?

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