

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA (AM) – SEMESTER 8 • EXAMINATION – SUMMER 2018

Subject Code: 4180507

Date: 30/04/2018

Subject Name: Risk Management

Time: 10:30 am to 1:30 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Figures to the right indicate full marks.

- Q.1 (a) Explain the following term with appropriate example. 07
- i) Open Interest and Volume
 - ii) Cross Hedging
 - iii) Stack and Rolling Hedge
 - iv) Money-ness of Call and Put Option
- (b) “Futures contracts are improvised forward contracts.” Do you agree with the statement – Explain the statement in the light of difference between forward and future contract. 07

- Q.2 (a) Using the following data, prepare the margin account of the investor. 07
Assume that if a margin call is made at any time, the investor would deposit the amount called for.

Position	:	Short
Contract Size	:	500 units
Unit Price	:	Rs.22
No. of contracts	:	8
Initial Margin	:	12 %
Maintenance Margin	:	3/4ths of Initial margin
Date of Contract	:	June 3

Closing Prices :

Date	June 4	June 5	June 6	June 7	June 10	June 11	June 12
Price	22.30	23.10	22.90	23.00	23.15	22.85	22.95

- (b) An investor purchases a call option on 1200 shares with an exercise price of Rs.80 for Rs.7.75. What is the maximum loss that he could possible incur on this? What is the maximum profit which could accrue to him? Also, determine the break-even stock price. 07

OR

- (b) From the following data, calculate the value of call option using Black and Scholes model and put option using put-call parity relationship: 07
- | | | |
|------------------------------------------------|---|---------|
| Current price of the share | = | Rs.486 |
| Exercise price | = | Rs.500 |
| Time to expiration (Assume 365 days in a year) | = | 65 days |
| Standard Deviation | = | 0.54 |
| Continuously compounded rate of interest | = | 9% |

- Q.3 (a) In the recent past i.e. February and March 2018, the equity market faced high volatility. But after this mayhem in equity market, an investor now expects that the market is likely to remain stable in near future and hence the stocks. The following information is available on call options, with two months expiration date, on a stock: 07

Call	Exercise Price	Call Price
1	50	8.00
2	55	4.50
3	60	2.00

You are requested to suggest appropriate strategy with the help of the above data. Also, construct a table to show how profit/loss would vary with the stock price if it is (i) Rs.45, (ii) Rs.54 ,(iii) Rs.57 and (iv) Rs.68.

- (b) ABAN Offshore, a company, needs 1100 barrels of crude oil in the month of July whereas the current price of crude oil is Rs.3000 per barrel at the end of January month. July futures contract at MCX is trading at Rs.3200. The firm expects the price to go up further and beyond Rs.3200 in July. It has the option of buying the stock now or it can hedge through futures contract. Assume the size of futures contract is 100 barrels. 07
- a. If the cost of capital, insurance and storage is 15% continuously compounding, examine if it is beneficial for the firm to buy now?
- b. If the firm decides to hedge through futures, find out the effective price it would pay for crude oil if at the time of lifting the hedge (i) the spot and futures price are Rs.2930 and Rs2940 respectively and (ii) the spot and futures price are Rs.3330 and Rs.3345 respectively.

OR

- Q.3 (a) Explain the factors affecting Option Pricing. 07
- (b) A stock is currently trading at Rs.50. It can either go up by 20% or fall by 20% in a period of three months. If the risk-free interest rate is 8% continuously compounded, find the value of a call with an exercise price of Rs.50 and maturity of six months using the risk-neutral method under the binomial model for two periods. 07

- Q.4 (a) Explain put-call parity relationship. 07
- (b) Suppose that a call option involving 100 shares is selling for Rs.6.25 at maturity when the share price is Rs.69 and exercise price is Rs.65. Is arbitrageur can make any profit from the given scenario? 07

OR

- Q.4 (a) Explain the Bull Spread Strategy with suitable example 07
- (b) Explain various Greek Letters with respect to option pricing. 07

- Q.5 (a) Explain various types of Exotic Options. 07
- (b) Define Swap and briefly explain various types of Swaps. 07

OR

- Q.5 (a) A stock is currently available at Rs.150 per share. The stock is expected to provide the dividend of Rs.3 per share after one month. If the continuously compounded interest rate is 10% and time to maturity of the contract is 6 months then, calculate the price and value of future contract. 07
- (b) Explain the different types of participants in the Derivative Market. 07
