Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MBA - SEMESTER–IV • EXAMINATION–WINTER • 2014

Subject Code: 2840202 Date: 28-11-2014

Subject Name: Risk Management (RM)

Time: 10.30am - 13.30pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** "Forward Rate Agreement is also known as Interest Rate Forward Contract." Discuss in detail an interest rate forward contract with its objective, process, pay off and uses. **07**

(b) What is upside and downside risk? Explain how "Derivative" market can help an investor to formulate the strategy when he wants to Speculate, Hedge or wants to do Arbitrage. **07**

Q.2 **(a)** What is counter party risk and how exchange minimizes this risk through its margin system? **07**

(b) The standard deviation of monthly changes in the spot price of Sugar is 1.2. The standard deviation of monthly changes in the future price of sugar contract is 1.4. The correlation between the future price changes and the spot price changes is 0.7. It is now October 15. A sugar trader is committed to purchase 2 lakh Kgs of sugar on November 15. The trader wants to use the December future contract to hedge its risk. Each contract of sugar is for the delivery of 40000 kgs of sugar. What strategy the sugar trader should follow? **07**

OR

(b) A company has a Rs.20 million portfolio with a beta of 1.2. It would like to use the futures contract on index future to hedge its risk. The index future is currently standing at 1080 and each contract is for delivery of 250 times the index. How the investor hedge to minimize his risk? What should the company do if it wants to reduce the beta of the portfolio to 0.6? **07**

Q.3 **(a)** What is contango and normal backwardation? Explain the perfect and imperfect hedging with suitable examples. **07**

(b) The current stock index is 3450 and its annualized dividend yield is 4%. A six month future is currently trading at Rs. 3585. The risk free rate is 10% .Verify whether there is any scope for a risk free arbitrage if 50% of stocks of the index pay dividend. **07**

OR

Q.3 **(a)** Write notes on the following terms :- (i) Short and long hedge (ii) Static and Dynamic Hedge (iii) Strip Hedge and Stack Rolling Hedges. **07**

(b) A trader has gone long on 5 brent crude futures for December settlement at $26.32 per barrel. The minimum contract size for brent crude futures contract is 100000 barrel. The initial margin is $50000 and the maintenance margin is $30000. The trader will take out the profit out of the margin account whenever he gets the opportunity to do so. The future closes at the following prices on the next ten trading days. **07**

Day	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Price in $	**26.19**	**26.30**	**26.45**	**26.48**	**26.34**	**26.21**	**25.98**	**25.87**	**25.90**	**25.95**

You are required to prepare the margin account showing all cash flows.

Q.4 **(a)** What is the price of a 3 month European put option on a non dividend paying stock when the stock price is Rs.54, strike price is Rs.52, risk free rate is 10% per annum and the volatility is 32% per annum. **07**

(b) Explain the Black Scholes model by clearly stating all its assumptions. **07**

OR

Q.4 **(a)** A stock price is currently Rs100. Over each of the next two six month periods it is expected to go up by 10% and down by 10%. The risk free interest rate is 8% per annum with continuous compounding. What is the value of a one year European call option with a strike price of Rs.100. **07**

(b) The current price of stock is Rs.45. A speculator found the following options being traded in the market. **07**

Strike Price(Rs)	47	51	53	56
Call Premium(Rs)	1.95	1.50	1.10	0.85

He is of the opinion that significant price movements in the next three months are unlikely though the direction is not clear. Suggest a suitable strategy using all strike prices and mention the initial Cash outflow, Maximum profit amount and Break Even Point.

Q.5 **(a)** Explain Butterfly and Condor spread strategy with suitable example. When one should use these strategies. **07**

(b) ”Delta hedging reduces the risk associated with price movements in the underlying security “ Explain the concept of delta hedging in details **07**

OR

Q.5 **(a)** What is meant by exotic option? Explain Asian option, Binary option and Look back option. **07**

(b) What do you mean by credit derivative? Explain the credit default swap with a suitable example. **07**

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