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Fourth Semester MBA Degree Examination, Dec.2015/Jan.2016
Risk Management

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any THREE questions from Q.No. 1 to Q.No. 6.**
2. Question No. 7 and 8 are compulsory.
3. Use of N.D. tables is permitted.

- 1 a. Distinguish between Pure risk and Speculative risk. (03 Marks)
b. Explain in brief Risk Management Process. (07 Marks)
c. On December 8, 2002 an investor bought 10 T – bill futures contract trading on IMM at ₹ 96.72. The initial margin requirement is ₹ 2000 per contract with maintenance margin of ₹ 1500 per contract. The settlement prices of T – bill futures contract for 9 Trading days are as follows :

Date	Dec 9	10	11	12	13	16	17	18	19
Settlement Price (₹)	96.75	96.68	96.63	96.59	96.54	96.50	96.55	96.60	96.64

On Dec. 20, the investor closes his position when future price was ₹ 96.67. Show the margin account balance and the gains from futures contract. Size of a contract = 2500. (10 Marks)

- 2 a. Distinguish between Maintenance margin and Variation margin. (03 Marks)
b. How do option contracts differ from Forwards and Futures? (07 Marks)
c. Nifty spot is trading at 4000. Wipro, which is currently trading at ₹ 500 per share has a weight of 10% in Nifty. It is expected to declare a dividend of ₹ 20 per share after 15 days of purchasing the future contract. Cost of borrowing is 15% p.a. Find out the value of a new 2 months futures contract on Nifty (Market lot of Nifty is 50). (10 Marks)
- 3 a. Differentiate between Coupon swap and Basis swap. (03 Marks)
b. What are the assumptions of 'cost of carry' model? (07 Marks)
c. An investor bought 2000 shares of Reliance at ₹ 540 per share on January 15. He wants to hold this investment till April 30. He wants to hedge his market exposure by selling Nifty futures contracts which are available at 1890 at that moment (size of a contract is 200 points). If the beta of Reliance stock is 1.4, find out how the investor can hedge his position and work out his profit or loss if on April 30. i) Nifty raises to 1960 and Reliance stock to ₹ 610. (10 Marks)
ii) Nifty falls to 1810 and Reliance falls to ₹ 500.
- 4 a. How is Created Bear spread strategy? (03 Marks)
b. What is Forward Market Commission? What are its functions? (07 Marks)
c. A commercial bank (CB) wants \$ floating LIBOR rate loan. A manufacturing company (MC) wants fixed rate \$ funds. An US financial institution (FI) wants \$ floating prime rate loans. The cost of accessing funds in each market is as below :

	Fixed	Floating LIBOR	Floating Prime
CB	12 %	LIBOR + 0.2 %	Prime + 0.3 %
MC	11 %	LIBOR + 0.2 %	Prime + 0.4 %
FI	10 %	LIBOR	Prime + 0.8 %

Explain how a Swap can be structured if the total benefit is to be shared equally. (10 Marks)

- 5 a. What is LIBID Rate? (03 Marks)
- b. Mr. Prashant bought a ₹ 360.50 call option contract involving 1000 shares of a company. He paid a premium of ₹ 5.50 per share on this. On the expiry of the contract, the settlement price was ₹ 365.50. What was profit / loss on this contract? (07 Marks)
- c. Consider the following data about call options on BHEL for which one contract involves 1100 shares.

Strike Price (₹)	170	180	190
Premium (₹)	21.10	14.00	8.00

Help an investor to create a butterfly spread. Find the pay off at various ranges of stock prices of ₹ 168, 176, 185, 189 and 198. (10 Marks)

- 6 a. What is FRA? (03 Marks)
- b. Suppose that the daily change in the value of a portfolio is to a good approximation, linearly dependent on two factors, calculated from a principal components analysis. The delta of a portfolio with respect to the first factor is 6 and the delta with respect to the second factor is 4. The standard deviations of the factor are 20 and 8 respectively. What is the 5 – day 90% VaR? (07 Marks)
- c. A stock is currently selling for ₹ 60. The call option on the stock exercisable a year from now at an exercise price of ₹ 55 is currently selling for ₹ 15. The risk-free interest rate is 12% P.a. The stock can either raise or fall after a year. It can fall by 30%. By what percent can it rise? (10 Marks)

7 Skill – Based Questions :

- a. An investor enters into short futures contract to sell January cotton for ₹ 50 per kg on the commodity exchange. The size of a contract is 5000 kg. Initial margin is ₹ 40,000 and maintenance margin is ₹ 30,000. What price change will lead to margin call to investor? (05 Marks)

- b. Consider the following data about put option on a share :

	Option – 1	2	3	4	5
Strike Price (₹)	80	85	90	92	97
Stock Price (₹)	90	90	90	90	90

Find out category of option (ITM, ATM or OTM). (05 Marks)

- c. Delta of a call option is 0.60 and Delta of a put option is – 0.40. Write the interpretation of the above results. (05 Marks)
- d. What strategy would the following lead to?
Buy one put with highest Strike price (E_3) ; Buy one put with lowest strike price (E_1)
Sell two puts with medium strike price (E_2). (05 Marks)

8 CASE STUDY :

Using the following data, calculate values of call and put options on a stock (20 Marks)

Spot value	243
Exercise price	250
Risk – free rate of return (continuously compounded)	8.6% p.a
Standard deviation of rate of return	0.54
Time to expiration	65 days