MBA- Semester- IV Examination, May 2014
KadiSarvaVishwavidyalayaUniversity
Derivatives and Risk Management(FS421)
Duration: 2 Hours & 30 Minutes Total weightage: 40%

Notes:
1. Working notes must form part of Calculation.
2. Figure to right side indicates weightage of question.

Que 1 (A) An investor holds shares of Suzlon worth Rs 20 lacs which has standard deviation of returns at 25% with beta of 1.5. The standard deviation of market returns is 16%. An Index future on NIFTY is price at 4,000 with contract size of 50. If investor hedges with the futures find out what position he must take in NIFTY futures. Also find what risk the investor would face in the hedged portfolio. 4%

Que 1 (B) What is Forward Contract? Explain various features of forward Contracts. 4%

Or

Que 1 (B) What is derivative? Explain different derivative products. 4%

Que 2 (A) Explain options strategies with examples. 4%

Que 2 (B) Futures contract expiring on 28 October in US dollar at National Stock Exchange is selling for Rs 48.6800. Your bank has offered a forward contract for delivery on 28 October at Rs 48.9000. How can you take advantage of the disparity in the futures and forward market? How the position does of think would correct? 4%

Or

Que 2 (A) A treasurer is expecting to receive funds of Rs 1.25crore in next three months which would be surplus for next three months. 3-m futures contract on T-bills expiring in 90 days is quoted at Rs 89.50 indicating the yield of 10.50% likely to prevail for the 90-day T bills. Treasurer is apprehensive about yield falling in the times to come. What can treasurer do to hedge against falling yields? 4%

Que 2 (B) Explain the principles of put-call parity with suitable example. 4%

Que 3 (A) 'There is a difference between Future & Forward contract.' Do you agree? Justify. 4%

Que 3 (B) A trader in gold hold stock of 1 Kg valued at Rs 15 lacs at the spot price of Rs 15,000 per 10 gms. The 3-m futures contract for size of 100 gms on gold is Rs 15,400 per 10 gms. In order to protect against the fall in value of the gold the trader decides to sell 10 contracts in gold for 3-m delivery. However after one month the trader is required to sell the stock of gold at Rs 14,500 and therefore also cancels his position in futures at Rs 14,700. Find out the price the trader realised. 4%

Or

Que 3 (A) What is Interest Rate Swaps? Explain how Interest rate swap works? 4%

Que 3 (B) An Indian firm in order to convert its US dollar loan into rupee loan had entered a swap with a bank receiving US dollar and paying Indian rupee. The swap was fixed for a principal of Rs 100 lacs with rupee interest of 6% p.a. payable semi-annually. At an exchange rate prevailing then at Rs 40.00 per dollar the equivalent dollar were 2.50 lacs and the interest rate fixed was 3% p.a. payable semi-annually. 4%

The yields in the Indian as well as US markets have changed since then. The yields for the remaining 4 years in rupee and dollar are as below:

Time (months)	6	12	18	24	30	36	42	48
Yield- Rupee	5.00%	5.50%	5.60%	5.80%	6.00%	6.10%	6.20%	6.30%
Yield- Dollar	3.60%	3.70%	3.80%	4.00%	4.40%	4.50%	4.80%	5.00%

Assuming simple interest rate and all semi-annual period equal and next payments due exactly after 6 months.Find what value must be paid/received by the Indian firm if it wants to cancel the swap.

Que 4 (A) Briefly Explain factors affecting option pricing. 4%

Que 4 (B) You are required to value a 12-m option on an asset currently trading at Rs 100 using 4-stage binomial tree. The risk free rate is 8% p.a. with quarterly compounding. The stock can take only two values at the end of each quarter with either 10% up or 10% down. Answer the following: 4%

1. How many end-values the asset can have?
2. Find out all the end values.
3. What is the probability of each end value?

Or

Que 4 (A) Explain the terms in the money, At the money & out of Money with suitable example. 4%

Que 4 (B) Following is the term structures of interest rates as on today; 4%

Term to maturity (months)	**3**	**6**	**9**	**12**
Yield % p.a.	3.40	3.55	3.65	3.95

Assuming 360 days in a year, annual compounding and bid ask spread of 20 basis points find the quotation of a) 3/6 FRA b) 9/12 FRA and c) 6/12 FRA.

Que 5 A stock is trading at Rs 105.00. You are willing to write a call on the stock exercisable at the end of 3 months with strike price of Rs 110.00. If the risk free rate of interest is 12% p.a. and stock has exhibited volatility of 30% based on the past data, what premium for the call would you like to charge for writing the call? 8%

Seat No._____ Enrollment No._____

KADI SARVA VISHWAVIDHYALAYA

MBA Semester IV May Examinations 2015

Derivatives and Risk Management (FS 421)

Date: 04-05-2015 **Duration: 2 hours 30 Mins** **Total Marks: 40%**

Instructions:

(1) All the questions carry equal marks.

(2) Right side of questions indicates marks.

Q-1

(a) Define derivatives and state the reasons for using the derivatives in India. **(4%)**

(b) Discuss the Clearing and settlement system of derivatives exchanges in India **(4%)**

OR

(b) What do you mean by Hedging? Explain the difference between hedging and Speculation. **(4%)**

Q-2

(a) Hyundai Motors exports cars to Germany, and every three months, it receives EUR 5,00,000 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 the interest rate in India is 9% p.a. Hyundai wants to hedge its euro receipt through forward contracts for next 6 months. The 180 day forward rate is EUR 1 = INR 71.5642. (i) calculate the 180 day theoretical forward rate, (ii) identify arbitrage opportunity and calculate arbitrage profit for EUR 5,00 000. **(4%)**

(b) Differentiate Forward contracts with Futures. Discuss the problems with Forwards and advantages of Forward contracts. **(4%)**

Or

Q-2

(a) What is meant by open interest? What is the difference between open interest and trading volume? What do you mean by marking to market feature of Futures **(4%)**

(b) Mahesh, a cashew merchant, wants to buy five cashew contracts on March 5 at Rs. 5600 each. The initial margin for mukund is 5.5% of the contract value. The futures price is for each carton, and the contact size is 50 cartons. Mahesh closes out his position on March 16. The futures price from March 6 to March 16 are shown below. The variation Margin is Rs. 50,000. Prepare a margin account for Mahesh based on following settlement prices: **(4%)**

Date	Settlement Price
March 5	Rs. 5600
March 6	Rs. 5650
March 8	Rs. 5610
March 12	Rs. 5520
March 15	Rs. 5570
March 16	Rs. 5650

Q-3

(a) Explain carefully the concept of Cost of carry. What is the relationship between future price, spot price and cost of carry? **(4%)**

(b) On September 3, BSE sensex is at 16,140. BSE sensex 30 futures with expiry on October 27 are available at price 16,311. The contract multiplier is 15. Calculate the cash flow for the following if BSE sensex 30 has a value of 16,660 at the end. **(4%)**

(i) You take a long position in five futures contract on September 3

You take a short position in five futures contract on September 3.

Or

Q-3

(a) When and how would you enter into Butterfly spread strategies? **(4%)**

(b) SBI shares are selling on January 1 at Rs. 2500. Call options are available on SBI with expiry on January 29 and exercise price of Rs. 2600. These options are priced at Rs. 70. The contract size is 132. Calculate the terminal values and gain-loss for these call options buyer and seller if SBI share price of Rs. 2400, 2500, 2600, 2700,2800. **(4%)**

Q-4

(a) What do you mean by Put-Call parity model? Explain the Binomial option Pricing Model **(4%)**

(b) Assume that tata motors stock is currently selling for Rs. 750. There is a call option on Tata Motors with a maturity of 90 days and an exercise price of Rs. 800. The volatility (Standard deviation) in stock price is expected to be 22%. The risk free rate is 8%. What will be the price of a call option that has a maturity of 90 days **(4%)**

OR

(a) Explain the benefits of Commodity futures in India **(4%)**

(b) Define Swaps and Discuss the various types of currency swaps **(4%)**

Q-5 Explain the Call and put options with examples. **(8%)**