Enrollment No: ______________________ **Exam Seat No:**______________________

C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Future, Option and Risk Management

Subject Code: 5MS04FOM1 **Branch: MBA**

Semester: 4 **Date: 12/05/2016** **Time: 02:30 To 05:30** **Marks: 70**

Instructions:

(1) Use of Programmable calculator and any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

SECTION – I

Q-1 **Attempt the Following questions** **(07)**

a. List the different derivatives. **01**
b. What do you mean by contango? **01**
c. Define Hedging. **01**
d. What is Basis Risk? **01**
e. What is a cash and carry arbitrage? **01**
f. What is a cross hedge? **01**
g. What is the meaning of tick size in a futures contract? **01**

Q-2 **Attempt all questions** **(14)**

a What is future contract? What are key specification parameters of a futures contract? **07**

b An aggressive fund A has the following portfolio of 10 stocks aggregating Rs 202.75 lakh **07**

Script	No.of shares	Price	Beta
ABB	2500	930	1.1
Bharti	6000	180	1.25
BHEL	8000	140	1.40
Bharat forge	2000	530	1.3
Cadila	7000	350	1.7
Crisil	2000	1500	1.25
DLF	6000	340	1.05
FAG	4000	550	1.25
HAL	1000	2500	1.40
ICICI	5000	500	0.8

The fund expects the market to fall in the next 3 months, and therefore wants to have a defensive portfolio with a beta of 0.8. What alternative fund has to achieve the desired beta of 0.8. Compare the alternatives Following information is available: Current level of market index Nifty = 2600 No. of indices in a futures contract = 200 3 months futures price = 2675

OR

Q-2 **Attempt all questions** **(14)**

a Explain the concept of Cash & Carry Arbitrage and Reverse Cash & Carry Arbitrage with suitable example. **07**

b Pro. Investment Ltd is expecting a receipt of Rs. 10 crore for 3 months investment after 3 months. The yield for contemplated investment is currently at 7% but is likely to fall. A bank has offered 3/6 FRA at 7% based on 3-month MIBOR as benchmark. How can Pro Investment hedge against falling interest rates? Find out the effective return if **07**

a. MIBOR rises to 9% and
b. MIBOR falls to 6%.

Assume equal changes in MIBOR and investment yields and 90 days in 3 months and 360 days in a year.

Q-3 **Attempt all questions** **(14)**

a A jute packaging unit has planned production of 4300 kg of jute to be sold six months later. The spot price of jute is Rs. 1900 per kg and 6-m futures on the same is trading at Rs.1850 per kg. The price is expected to fall to as low as Rs.1700 per kg six months later. What can the jute packaging unit do to mitigate its risk of reduced profit? If it decides to make use of futures market what would be the effective realized price for its sale when the spot and futures price were Rs.1750 and Rs.1755? **07**

b What are the typical features of foreign exchange market as compared to market for other financial assets? Differentiate between (i) Bid Rate and Ask Rate (ii) Spot Rate and Forward Rate **07**

OR

Q-3 **a** The spot price of crude oil is Rs. 3000 per barrel. In the futures market 3 months and 6 months contracts are trading at Rs 3125 and Rs3200. The cost of carry inclusive of storage and insurance is placed at 15% p.a. If cost of carry model applies find the following: **07**

a. If at the end of three months the spot price were Rs 3500 and futures market stood corrected, what would be the profit of the arbitrageur?
b. If at the end of three months the spot price were Rs 2700 and futures market stood corrected, what would be the profit of the arbitrageur?

b “The Futures and forwards are same contracts". Do you agree. **07**

SECTION – II

Q-4 **Attempt the Following questions** **(07)**

- **a.** What is an interest rate swap? **01**
- **b.** How does an American option differ from European option? **01**
- **c.** What is time value of option? **01**
- **d.** What is a calendar spread? **01**
- **e.** What do you mean by covered call? **01**
- **f.** What is a chooser option? **01**
- **g.** Explain collateralized debt obligation. **01**

Q-5 **Attempt all questions** **(14)**

a Suppose you buy a put option of IDFC at a strike price of Rs.100 with a premium of Rs.9 and sell a put option with a strike price of Rs. 120 with a premium of Rs. 27.20. Draw the pay-off graph along with the cut-off prices if the market prices at expiration are 75, 85, 95,100,120,135,145,160. Assume lot size of 2000 shares. **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 6 months. If the risk-free interest rate is 8% p.a find the value of the put with exercise price of Rs.45 and maturity of 3 months using risk neutral method under two period binomial model. **07**

OR

Q-5 **07**

a Suppose you sell strangle of TATA Steel for May 2016 expiry. The details for call and put options are as follows: **07**
Call option = Rs 1.25 for Strike price = Rs. 400
Put option = Rs. 29.30 for Strike price = Rs.370
Draw the pay off of the strangle along with the cut-off prices. Assume the lot size of 500 shares. Market prices at expiration are 350,360,370,380,400,450,470,500

b Given the following information about the share: **07**
Current market price = Rs. 50, Annual volatility = 30%, risk free interest rate = 10%. Find out the value of 3-month put option with exercise price of Rs. 60

Q-6 **Attempt all questions** **(14)**

a What is Option Contract? Explain the factors affecting options pricing. **07**

b Nifty is currently at 4,500. If the risk-free interest rate is 8% and continuous dividend yield on Nifty is assumed at 3% what would be the value of 3-m put option with exercise of 4,600? The volatility of Nifty is 25% p.a **07**

OR

Q-6 **Attempt all Questions**

a Suppose you sell a strap of ICICI Bank with a strike price of Rs.1100, May expiry. The premium for call option is Rs. 9.50 and premium for put option is Rs. 74.75 and lot size is of 250 shares. Draw the pay off graph along with the cut-off prices. Market prices at expiration are 900,950,975,1025,1100,1150,1200,1250,1300 **07**

b Explain the concept of moneyness in options. How does it affect the options premium? **07**