

Enrollment No: \_\_\_\_\_ Exam Seat No: \_\_\_\_\_

# C.U.SHAH UNIVERSITY

## Summer Examination-2017

Subject Name: Future, Option and Risk Management

Subject Code: 5MS04FOM1

Branch: MBA

Semester: 4

Date: 20/04/2017

Time: 10:30 To 01:30

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.
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### SECTION – I

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

- a. Define Forward Contract. **01**
- b. How can we know about Cash & Carry Arbitrage? **01**
- c. What is Basis Risk? **01**
- d. What is the difference between Bid Rate and Ask Rate? **01**
- e. When the situations for imperfect hedge arise? **01**
- f. Which are the methods to control risk of your portfolio? **01**
- g. What is a Swap? **01**

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

- a. Following data as on 15<sup>th</sup> March 2017 is available. **07**  
A stock of TCS Ltd. = Rs. 2500  
1-month futures on TCS Ltd. Maturing 15<sup>th</sup> April 2017 = Rs. 2568  
Risk free Interest Rate = 12%
1. Find the value of one future contract of TCS Ltd. ( one future contract on TCS Ltd included 50 shares of TCS Ltd)
  2. Find the fair value of the future contract.
  3. Is there any opportunity to make profit from the prices prevailed in the market? If yes, how?
- b. What do you understand by Derivatives? Also discuss types of Derivatives. **07**

**OR**

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

- a. An investor holds shares of Suzlon worth Rs. 20 lacs which have standard deviation of returns at 25% with beta of 1.5. The standard deviation of market **07**



returns is 16%. Index futures on NIFTY is priced 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.

- b. What do you understand by Perfect Hedge and Imperfect Hedge? Discuss the key factors responsible for imperfect hedge. **07**

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

- a. As an exporter you expect to receive 3 months from now US \$ 20,000. The spot price of US \$ is Rs 50.00 while 3-m futures at NSE is trading at Rs.49.30 indicating depreciation of US dollar. Under what circumstances would you like to hedge? What would be the hedging strategy? **07**
- b. Explain the concept of Short Hedge and Long Hedge with suitable example. **07**

**OR**

- Q-3 a.** An industrial firm uses tin as raw material and has a requirement of 400 kgs of tin to be procured 6 months from now. The prices of tin are expected to rise substantially. The firm needs to hedge against the price rise. There are no derivative contracts available on tin but futures contract on aluminum are popular. The price of aluminum and tin are strongly correlated. A study has revealed that standard deviations of prices of tin and aluminum are 21% and 20% of their current prices of Rs 720 per Kg and Rs 90 per Kg respectively. The coefficient of correlation is placed at 0.95. One futures contract on aluminum is for 1,000 Kg. How can the firm hedge? **07**
- b. Explain the cost of carry model for futures pricing. **07**

## SECTION – II

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

- a. Which are the different types of Options? **01**
- b. What do you mean by Credit Derivative? **01**
- c. Explain Butterfly Spread. **01**
- d. Define ITM and OTM. **01**
- e. What is forward start option? **01**
- f. Which are the three different techniques for Option Valuation? **01**
- g. Define Chooser option.

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

- a. A 3 month Put Option on the Tata Tea with strike price of Rs 550 is selling for Rs 60. The share of Tata tea is presently trading at Rs 500 in the market. Calculate the following: **07**
1. What is the Intrinsic Value of this Put Option?
  2. What is the Time Value of this Put Option? Give Comments.
  3. Find out Put Option breakeven price.
- b. Suppose you buy Bear Spread of IDFC wherein the premium for put option with Strike price of Rs 120 and Rs 100 are Rs 27.20 and Rs 9 respectively. Calculate the payoff if the stock price at expiry is 75, 85, 95,100,120,135,145 and 160. Draw the graph and cut-off price. Assume lot size of 2000 shares. **07**



**OR**

- Q-5**     **a.**     Given the following information about a share: **07**  
Current Market Price Rs 50  
Annual Volatility: 30%  
Risk Free Interest Rate: 10%  
Find out:  
    1. The value of 3-month Call Option with exercise price of Rs 40.  
    2. Find out the Intrinsic Value and Time Value of the Call.
- b.**     Suppose you sell a Strangle of TATA Steel wherein the details are as follows: **07**  
Put Option – Strike Price 370, March Expiry , Premium= 29.30  
Call Option- Strike Price 400, March Expiry, Premium = 1.25  
Lot Size= 500 Shares  
Find pay-off, graph and cut-off prices if the stock price at expiry is 350, 360, 370, 380, 400, 450, 470, 500.

- Q-6**     **Attempt all questions** **(14)**
- a.**     Stock of Hindalco is trading at Rs 90. A 6-m European Call with strike of Rs 80 **07**  
is available.  
    1. What would be the minimum price of the call if risk free rate is 10% p.a.?  
    2. If the call is actually selling for Rs 12 what minimum profit can you  
    make? Demonstrate how you would derive such profit.
- b.**     Suppose you buy a Strip of United Spirits wherein the details are as follows: **07**  
Put Option – Strike Price 2800, January Expiry , Premium= 171.35  
Call Option- Strike Price 2800, January Expiry, Premium = 3.40  
Lot Size= 125 Shares  
Find pay-off, graph and cut-off prices if the stock price at expiry is 2500, 2550, 2600, 2700, 2900, 3000, 3050, 3100

**OR**

- Q-6**     **Attempt all Questions**
- a.**     Suppose you sell a Strap of ICICI Bank wherein the details are as follows: **07**  
Put Option – Strike Price 1100, March Expiry , Premium= 74.75  
Call Option- Strike Price 1100, March Expiry, Premium = 9.50  
Lot Size= 250 Shares  
Find pay-off, graph and cut-off prices if the stock price at expiry is 900, 950, 975, 1025, 1100, 1150, 1200, 1250, 1300.
- b.**     “ The American put option which allows for early exercise may be more valuable **07**  
than the European Put Option”- Justify this statement.

