

College of Applied Business (CAB)

Sent-up Examination, February 2015

BBA / Seventh Semester / BFN 203: Financial Derivatives and Risk Management
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Candidates are required to give their answers in their own words as far as practicable.

Section 'A'

Time: 20 minutes

Brief Answer Questions: (Attempt ANY NINE)

[9 × 1 = 9]

Indicate whether the following statements are true or false. Support your answer with reason.

1. The future traders may withdraw from margin account the amount above the maintenance margin without the closing the position.
2. Contango is the condition when the future price is above the expected future spot price.
3. Value of forward contract at expiration is the difference between spot price and delivery price of contract.
4. Any call with a greater time to maturity is always valued at a higher price than a call with shorter time to maturity.
5. An interest rate swap is similar to a series of forward rate transaction.
6. Value of swap doesn't refer to the gain or losses of the swap to a party.
7. An interest rate swap is a swap in which two parties agrees to exchange a series of interest payment in different currency.
8. The minimum value of call is zero.
9. The maximum value of put is strike price.
10. A covered call with a higher exercise price has higher breakeven.

Section 'B'

Time: 30 minutes

Short answer questions: (Attempt ANY TWO)

[2 × 5=10]

11. Suppose that you buy a stock index futures contract at the opening price of 452.25 on July 1. The multiplier of the contract is 500. You hold the position open until selling it on July 16 at the opening of 452.50. The initial margin requirement is Rs.9000 and maintenance margin requirement is Rs.6000. Assume that you deposit the initial margin and do not withdraw the excess money on any given day. Construct table showing the charges and credits to the margin account. The daily prices on the intervening are as follows:

Day	1/7	2/7	3/7	7/7	8/7	9/7	10/7	11/7	14/7	15/7	16/7
Price	453.95	454.5	452	443.55	441.65	442.85	444.15	442.25	438.30	435.05	435.50

12. The current price of gold is Rs.18000 per tola. The storage costs are Rs. 420 per tola per year payable quarterly in advance. Assuming that interest rates are 10% p.a. for all maturities, calculate the futures price of gold for delivery in one year.
Also calculate the future price assuming storage cost is payable at the end of each quarter.
13. As an investor you are bullish on the stock of the ABC Company. Consequently, you purchase ten-6-month ABC calls with an exercise price of Rs.50 for Rs.2600. The current price of ABC stock is Rs.50. How much would the price of ABC stock need to increase in 6 months for you to make a 10% annual rate of return on your investment? Ignore transaction cost.
14. Write short notes:
Currency swaps Vs Interest rate swap
15. Explain why a straddle is not necessary god strategy when the underlying event is well known to everyone.

Section 'C'

Time: 80 minutes

Comprehensive answer questions. (Attempt ANY THREE)

[3 × 7 = 21]

16. Find the value of American Put option using the binomial option pricing model. The parameters are $S_0 = 62$, $E = 70$, $r = 0.08$, $u = 1.1$, $d = 0.95$. There are no dividends. Use two period binomial model.

17. Consider a one year swap with semiannual payments to pay the T-bill rate and receive LIBOR minus spread with payment based on days/360 assuming 30 days in a month. The notional principal is Rs. 50 million. The term structures are as follow:

Term	LIBOR	T – Bill rate
180 days	7.01%	5.05%
360 days	7.21%	5.95%

- a) Find the swap spread
 b) Now it is 90 days into the life of the swap. The new term structure are as follows:

Term	LIBOR	T – Bill rate
90 days	7.20%	5.30%
270 days	7.35%	6.20%

Find the value of swap.

18. The two month interest rates in Switzerland and the United States are 3% and 8% per annum respectively, with continuous compounding. The spot price of the Swiss franc is \$0.6500. The futures price for a contract for a contract deliverable in two months is \$0.6600. Does this create arbitrage opportunities? If yes, shows the arbitrage process.
19. What is future contract? Explain the difference between a forward and future contract. What do forward and futures contracts have in common?
20. Explain the trading mechanism of futures. Under what circumstances are long and short hedge appropriate.