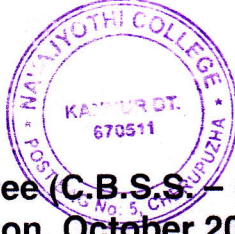




K23P 1444

Reg. No. :

Name :



**III Semester M.Com. Degree (C.B.S.S. – Reg./Supple./Imp.)
Examination, October 2023
(2020 Admission Onwards)**

COM3C14 : DERIVATIVES AND RISK MANAGEMENT

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **any four** questions in this Section. **Each** question carries **1** mark for Part (a), **3** marks for Part (b) and **5** marks for Part (c).

1. a) What are 'Currency Derivatives' ?
b) Determine the futures price from the following :
Spot price – ₹ 8,50,000/-
Cost of carry – 12%
Carry period – 6 months
Use cost of carry model.
c) Cite out the need and importance of risk management in the recent scenario.
2. a) State the expectancy hypothesis in future pricing.
b) Distinguish between straddle and strangle.
c) Enumerate the process of hedging through futures.
3. a) State the key differences between spot contract and forward contract.
b) Evaluate the assumptions in capital asset pricing model.
c) The stock price of Grace Ltd. in spot market is ₹ 450/- and the two-month option contract is ₹450/-. The price of the option is ₹ 20 per share. At what price will the option be at-the-money, in-the-money and out-of-money, if the options are both call and put ?

P.T.O.



4. a) What is 'Option Pay-off' ?
- b) The current market price of a share is ₹ 19 and the call option and put option at a strike price of ₹ 20 are available for ₹ 3 for a period of 3 months. If the risk-free rate is 10%. Identify the arbitrage opportunities. Apply the put-call parity.
- c) Distinguish between 'Systematic Risk' and 'Unsystematic Risk' with examples.
5. a) Expand LIBOR and LIBID.
- b) What is Margin System ? Give its types.
- c) An investor buys 500 shares of X Ltd. at ₹ 210 per share in the cash market. In order to hedge, he sells 300 futures of X Ltd. at ₹ 195 each. Next day, the share price and futures decline by 5% and 3% respectively. He closes his positions the next day by counter transactions. Find out his profit or loss position.
6. a) Support the price of a stock is ₹ 100 and in two periods, it may go up by 20% or down by 20% in each period. Construct the 'Binomial Tree' (Single period).
- b) Calculate the lower bound from the following data :
- Stock price : ₹ 270 per share
- Style of option : European
- Type of option : Call
- Strike price : ₹ 265 per share
- Interest rate : 10% p.a.
- Time to expiry : 6 months
- Dividend : Nil
- c) Outline the important applications of interest rate futures. (4×9=36)



SECTION – B

Answer the **two** questions in this Section. **Each** question carries **12** marks.

7. a) "The limitations of forwards and futures led to the emergence of options". Examine this statement keeping in mind the limitations of forwards and futures. Also, tabulate the differences between options, forwards, and futures.

OR

- b) From the following information, compute the call option and put option values :-

Current market price (S) : ₹ 100 per share

Striking price (X) : ₹ 890 per share

Volatility of share price (σ) : 30%

Risk-free rate (R_f) : 10% p.a.

Time to expiration (t) : 3 months

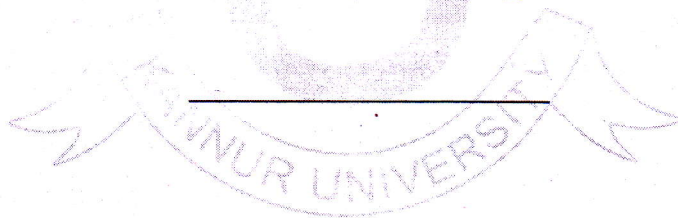
Use Black-Scholes formula.

8. a) Who are the players in the Indian derivatives market ? Narrate their functions in detail.

OR

- b) Write an essay on the "Types of options". Support with valid examples.

(2×12=24)





K22P 1444

Reg. No. :

Name :

**III Semester M.Com. Degree (CBSS – Reg./Sup./Imp.)
Examination, October 2022
(2019 Admission Onwards)
COM3C14 : DERIVATIVES AND RISK MANAGEMENT**

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **any four** questions in this Section. **Each** question carries **1** mark for Part (a), **3** marks for Part (b) and **5** marks for Part (c).

1. a) Define the term, '*Derivatives*'.
- b) From the following data, calculate the Optimal Hedge Ratio :
Correlation Coefficient between ΔS and $\Delta F = 0.93$.
Standard Deviation of $\Delta S = \sigma_S = 0.04$.
Standard Deviation of $\Delta F = \sigma_F = 0.06$.
- c) Distinguish between Hedging and Speculation.
2. a) Clarify the meaning of the terms, '*Contango*' and '*Backwardation*'.
- b) What is meant by '*Value at Risk*' ? State its significance.
- c) From the following information, determine the Put Option value using the Black and Scholes formula :

$$S = ₹ 280/-$$

$$E \text{ or } X = ₹ 260/-$$

$$r = 8\% \text{ p.a.}$$

$$t = 0.6667$$

$$N(d_1) = 0.6336$$

$$N(d_2) = 0.4470$$

Assume that no dividend is expected during the life of the option.

P.T.O.



3. a) Who are 'Arbitrageurs' ?
 b) Compare Options from Swaps.
 c) The present value of the NIFTY Index is 3,150. The three-month interest rate is 12% p.a. the dividend yield on this index is estimated to be 6%, compute the fair value of Futures with 90 days remaining for maturity.
4. a) Define 'Swaps'.
 b) Distinguish between OTC Derivatives and Exchange-traded Derivatives.
 c) A put and a call option, each has an expiration date of 6 months hence and, an exercise price of ₹ 10. The interest rate for the 6 months period is 3%.
 i) If the put has a market value of ₹ 2 and the share is worth ₹ 9 per share, calculate the value of the call.
 ii) If the call has a market value of ₹ 5 and market price of the share is ₹ 12 per share, compute the value of the put.
5. a) What are 'Currency Futures' ?
 b) Highlight the economic functions of Swaps.
 c) Shares of Ram Ltd. are being sold at ₹ 3,000/-, following options are available for one month duration.

Call Options		Put Options	
Strike Price (₹)	Premium (₹)	Strike Price (₹)	Premium (₹)
2,900	120	3,100	125
3,000	35	3,000	40
3,100	5	2,900	10

Determine the Intrinsic Value and the Time Value of Call and Put Options.

6. a) Calculate the expected rate of return for an underlying asset from the given information : $R_f = 12\%$; $R_m = 16\%$; $\beta = 1.25$.
 b) Examine the measures taken by SEBI to protect the investors in the Derivative Market.
 c) Define the concept of 'Risk Management'. Outline its functions. (4×9=36)



SECTION – B

Answer the **two** questions in this Section. **Each** question carries **12** marks.

7. a) "Derivatives are financial products for managing exchange risk". Elaborate on the economic functions and risks faced in the Derivative market in India.

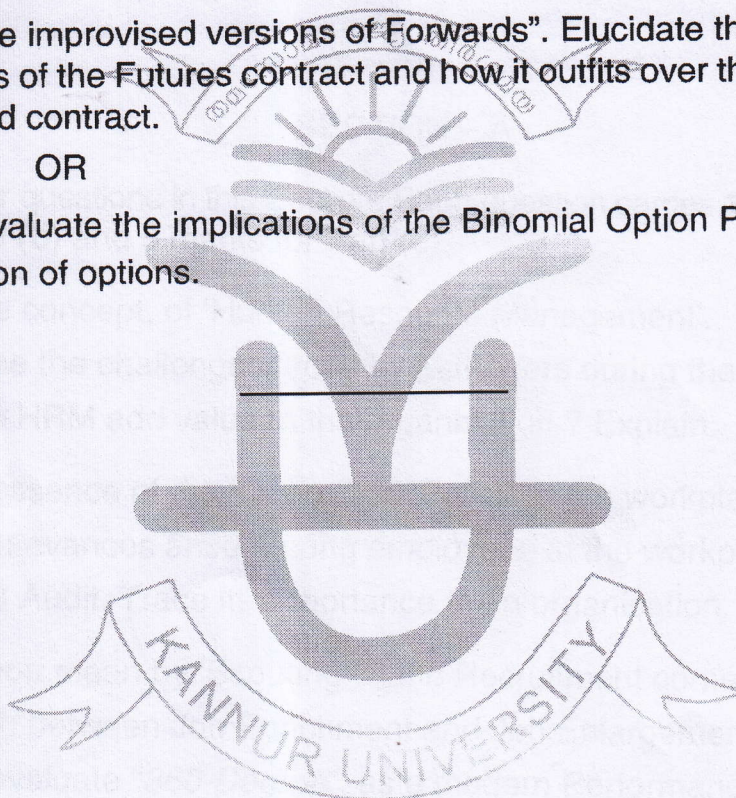
OR

- b) Discuss in detail the fundamental option strategies with suitable examples.

8. a) "Futures are improvised versions of Forwards". Elucidate the features and advantages of the Futures contract and how it outfits over the limitations of the Forward contract.

OR

- b) Critically evaluate the implications of the Binomial Option Pricing Model in the valuation of options. (2×12=24)





K21P 1030

Reg. No. :

Name :

III Semester M. Com Degree (C B S S- Reg./Suppl./Imp.)
Examination, October 2021
(2018 Admission Onwards)
COM 3C14 : DERIVATIVES AND RISK MANAGEMENT

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **any four** questions in this Section. **Each** question carries **1** mark for part (a), **3** marks for part (b) and **5** marks for Part (c).

1. a) Explain the term exotic options.
b) What do you mean by "strangle" ?
c) What do you mean by "collar width" ?
2. a) Explain the term 'out-of-money'.
b) Differentiate between hedging and speculations.
c) Explain the risk involved in derivative markets.
3. a) What do you mean by ration spread ?
b) Expand and explain STRIPS.
c) Differentiate between forwards and futures.
4. a) Expand and explain FTSE.
b) What do you mean by commodity feature ?
c) What is call options ? What are its features ?
5. a) What do you mean by American option ? Explain its features.
b) Explain the parties in future contract.
c) What is put bear spread ? Explain its features.

P.T.O.



- 6. a) What is meant by forwards ?
- b) Explain the term hedging.
- c) How do you classify the forwards and future ? (4×9=36)

SECTION – B

Answer **any two** questions in this Section. **Each** question carries **12** marks.

- 7. a) Define currency futures. What are its features ? Discuss the hedging with currency futures.

OR

- b) Current market price of the shares of A Ltd. is Rs. 100 and an option with exercise price of Rs. 115 for a call option with twelve months to expiration. It is expected that spot price of these shares at the end of three months from now might increase by 60% of the current spot price or it might decline by 20% of the current spot price. If risk free rate of interest is 10% p.a., find out the price of the call option.

- 8. a) Discuss the regulatory framework of derivative trading in India.

OR

- b) Explain briefly the different classification of options. (2×12=24)
-



K20P 1142

Reg. No. :

Name :

**III Semester M.Com. Degree (CBSS – Reg./Suppl./Imp.) Examination,
October 2020
(2017 Admission Onwards)
COM3C14 : DERIVATIVES AND RISK MANAGEMENT**

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **any four** questions in this Section. **Each** question carries **1** mark for Part (a), **3** marks for Part (b) and **5** marks for Part (c).

1. a) Explain the term performance bond.
b) What do you mean by “straddle” ?
c) What do you mean by Monte Carlo valuation ?
2. a) What do you mean by Quasi-arbitrage ?
b) Explain spot price.
c) What do you mean by Imperfect hedge ? Explain the reason for imperfect hedging.
3. a) What do you mean by options ?
b) What do you mean by put options and call options ?
c) Explain the term option writer and what are the risk factors of option writer ?
4. a) Expand and explain FTSE.
b) What do you mean by commodity feature ?
c) What are the different types of margin in future contract ?
5. a) What do you mean by European option ? Explain its features.
b) Explain the parties in option contract.
c) How do you classify option and future ?

P.T.O.



6. a) What is meant by forwards ?
 b) Explain the term hedging.
 c) How do you classify the forwards and future ? (4×9=36)

SECTION – B

Answer **any two** questions in this Section. **Each** question carries **12** marks.

7. a) What are the advantages and disadvantages of derivatives ? Explain.

OR

- b) What is the price of a European put option on a non-dividend paying stock when the stock price is Rs. 69, the strike price is Rs. 70, the risk-free interest rate is 5% per annum, the volatility is 35% per annum, and the time to maturity is six months ?

8. a) What are the different option strategies ? Explain in detail.

OR

- b) The price, strike price and time until expiration are given below for 3 European call options on the same non-dividend paying stock.

	Option Price	Strike Price	Expiration
Option A	8.00	50.00	1 year
Option B	7.70	52.00	1.5 years
Option C	7.50	53.00	2.0 years

An arbitrageur sees an arbitrage opportunity and therefore buys or sells exactly one of Option B at time 0. Subsequently, the actual stock prices emerge as described in the table below :

Time	Stock Price
1 year	50.00
1.5 years	52.50
2.0 years	52.50

The continuously compounded risk-free rate of return is 6%. Arbitrage profits are accumulated at the risk-free rate of return. Determine the value of the arbitrage profits at the end of 2 years. (2×12=24)



0141826

K19P 1142

Reg. No. :

Name :

III Semester M.Com Degree (CBSS-Reg./Suppl./Imp.)
Examination, October - 2019
(2017 Admn. Onwards)
COM3C14 : DERIVATIVES AND RISK MANAGEMENT

Time : 3 Hours

Max. Marks : 60

SECTION - A

Answer any **four** questions in this section. Each question carries **1** mark for Part (a), **3** marks for Part (b) and **5** marks for Part(c). **(4×9=36)**

1. a) What is a future contract?
b) Explain the uses of futures.
c) Explain the different types of Futures
2. a) Who are speculators?
b) Which are the various commodity exchanges in India?
c) Describe the significance of derivatives.
3. a) What do you mean by option pricing?
b) Discuss the pricing of American Options.
c) Explain the long and short straddle.
4. a) What is hedging?
b) Explain hedging through forwards.
c) A one year long forward contract on a non dividend paying stock is entered into when the stock price is Rs.420 and the risk free rate is 10% p.a with continuous compounding. What should be the forward price of the contract?
5. a) What do you mean by Time value of options?
b) Differentiate between options and futures.
c) Discuss the various types of options.

P.T.O.



6. a) What is strike price?
b) Explain how put call parity is used in calculating put option prices.
c) Explain the Black Scholes model of option pricing.

SECTION - B

Answer any **two** questions in this section. Each question carries **12** marks.
(2×12=24)

7. a) Explain the cost of carry model in perfect and imperfect market environment.

(OR)

- b) Discuss the uses, merits and demerits of forwards.

8. a) What do you mean by derivatives? Explain the different types of derivatives.

(OR)

- b) The current market price of ABC Ltd is Rs. 120. The volatility of the stock is 30%. The risk free interest rate is 10% p.a. calculate the value of European call option on the stock with a strike price of Rs. 130 using Binomial model with monthly intervals. Also depict the possible stock price after two time intervals on binomial tree.



K18P 0917

Reg. No. :

Name :

Third Semester M.Com. Degree (Reg./Suppl./Imp.)
Examination, October 2018
(2017 Admission)
COM3C14 : DERIVATIVES AND RISK MANAGEMENT

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **any four** questions in this Section. **Each** question carries **1** mark for Part (a), **3** marks for Part (b) and **5** marks for Part (c).

1. a) What is put option ?
b) What are the functions of derivative Market ?
c) Write a note on put-call parity.
2. a) What do you mean by spot price ?
b) Explain about Hedging.
c) Explain about the commodity exchanges in India.
3. a) What do you mean by speculation ?
b) Discuss the expectation approach in futures pricing.
c) Write a short notes on :
i) Intrinsic value of the option ii) Time value of money.
4. a) What do you mean by American option ?
b) Consider a six month long forward contract of a non-income paying security. The risk free rate of interest is 6 percent per annum. The stock price is Rs. 30 and the delivery price is Rs. 28. Compute the value of forward contract.
c) What are the differences between options and futures ?

P.T.O.



5. a) What is initial margin ?
 b) What are the features of forward contract ?
 c) The stock price of Reliance industries in spot market is Rs. 450 and two-month option contract is of Rs. 450. The price of the option is Rs. 20 per share. At what price the option will be at the money, out-of-money and in the money of the option is both call as well as put option ?
6. a) What is Arbitrage ?
 b) Discuss the cost of carry model in futures pricing.
 c) What are the importance of commodity exchanges ? (4×9=36)

SECTION – B

Answer either a) or b) in **each** of the following. **Each** question carries **12** marks.

7. a) What is option pricing ? What are the factors influencing option prices ?
 b) Calculate the value of a European call option.
 Current market price of a stock : Rs. 92 per share
 Exercise price : Rs. 80 per share
 Time to expiry : 50 days
 Risk free interest rate : 7.12%
 Volatility of stock : 3.5%
 The above stock does not pay dividends. Use Black-Schold formula.
8. a) Discuss the Evolution of derivative markets in India.
 b) Explain in detail the Black-Schold option pricing model. (2×12=24)