G.V.M.'S G.G.P.R. College of Commerce & Economics, Ponda Goa
M.Com Semester-II End Examination-May 2023
COTC-412-Financial Derivatives

Duration-02 Hours **Maximum Marks: 40**

Instructions:
1. This paper consists of six (6) questions carrying equal marks.
2. Question No. 1 is compulsory.
3. Answer any three (3) questions from 2,3,4,5 and 6.
4. Each question carries 10 marks. Figures to the right indicate full marks.

Q.1. Answer the following questions :- **(5x2= 10 marks)**

a) Explain Options Contracts.

b) Explain Long position and Short position with example.

c) Explain Reverse Cost of Carry approach.

d) State & explain any two types of swaps.

e) December 2020, Company X and Company Y enters into a two-years swap with the following terms:- (2 mks)

- Company X pays Company Y an amount equal to 8.50% (fixed interest rate) as per annum on o notional principal of Rs. 5,00,000.
- Company Y pays Company X an amount equal to one-year MIBOR +2% per annum on a notional principal of Rs. 5,00,000.

Describe the payoff for both the parties for two year if one year MIBOR as on 31st Dec, 2021 & 2022 are 7% & 8% respectively.

Q.2. Answer the following questions :- **(2x5= 10 marks)**

a) Explain the Applications of Financial Derivatives.

b) State and explain any five critiques of derivatives.

Q.3. Answer the following questions :- **(10 marks)**

a) On April 1, 2023, two parties enter into a forward contract for delivery of 5 kg of Silver on December 31,2023 at a price of ₹ 69.5 per gram. Assume future spot price of silver on December 31, 2023, both higher and lower to forward price, say, 69 and 70.5 per gram of silver, respectively. Calculate Gain/Loss for long and short position. **(3 Marks)**

b) Suppose on 1st May 2023, the cash price of Nestle India is ₹ 21736 and the price for 31st December 2023 future contract was ₹ 22,000. Financing Cost was 9% per annum. Calculate the Carrying cost for 8 months and also calculate the implied annualised convenience yield. **(3 Marks)**

c) Explain any 3 types of Hedging. **(4 marks)**

Q.4. Answer the following questions :- **(2x5= 10 marks)**

a) Rajesh buys a call option of ABC Ltd. at an exercise price of Rs. 100 with a premium of Rs. 3.Calculate the profit/loss on the option position for Rajesh along with the diagram if the spot prices are as follows:-

Rs. 95, Rs.96, Rs. 97, Rs. 98, Rs. 99, Rs. 100, Rs. 101, Rs. 102, Rs. 103 & Rs. 104.

b) State and explain any five factors affecting the option premium.

Q.5. The following information about XYZ Company's shares and call options is available:- **(10 marks)**

- Current share price, S= Rs. 160
- Option exercise price, K=Rs. 150
- Risk-free interest rate=3%
- Time to option expiry=2 years
- Standard deviation=12%

Calculate the value of the option as per Black Scholes Model.

Q.6. Answer the following questions :- **(2x5= 10 marks)**

a) Explain the two types of Interest rate futures & its contract specification.

b) Current market price of HP Ltd. is Rs. 5,800. At the end of each quarter there is 40% probability that price will increase by Rs. 60 and 60% probability that price will decrease by Rs. 20. A six month call option is available on this share with exercise price of Rs. 5,830, risk-free interest rate is 12% per annum. Determine the present value of this call option by using binomial model.

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