GL BAJAJ
Institute of Management & Research
Greater Noida
FIND YOUR SPARK

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POST GRADUATE DIPLOMA IN MANAGEMENT (2024-26)
END TERM EXAMINATION (TERM -IV)

Subject Name: **Financial Derivatives**	Time: **02.00 hrs**
Sub. Code: **PGF41**	Max Marks: **40**

Note:
Note: All questions are compulsory. Section A carries 12 marks: 6 questions of 2 marks each, Section B carries 18 marks having 3 questions (with internal choice question in each) of 6 marks each and Section C carries 10 marks one Case Study having 2 questions of 5 marks each.

Kindly write the all the course outcomes as per your TLEP in the box given below:

S. No.	Course Outcomes (COs)	Bloom's Taxonomy Level
CO-1	**Apply** the principles of forward contract valuation and utilize forwards to design basic hedging strategies against various business risks.	Apply -L-3
CO-2	**Analyze** the concept of basis risk and **determine** the optimal hedge ratio for various financial assets using futures contracts.	**Analyze** -L-4
CO-3	**Evaluate** various single-leg and combination option strategies to **justify** their suitability under different market conditions (bullish, bearish, volatile, or neutral).	**Evaluate** -L-5
CO-4	**Explain** the role and impact of key option sensitivities (**Delta, Theta, Gamma, Vega, and Rho**) in managing risk and generating income.	Understand -L-2
CO5	**Design** and **construct** a financial risk mitigation plan for a corporation by **structuring** and **valuing** appropriate Interest Rate or Currency Swap agreements.	Create - L-6

SECTION - A

Attempt all questions. All questions are compulsory.   2×6 = **12 Marks**

Questions	CO	Bloom's Level
Q. 1: (A). Explain the concept of "Mark-to-Market" and how it impacts the margin account daily.	CO-1	L-3
Q. 1: (B). What is the "Cost of Carry" model? Write the formula for a stock that pays no dividends.	CO-1	L-3
Q. 1: (C). How would you calculate the profit or loss for a call option seller when the option is exercised?	CO-1	L-3
Q. 1: (D). How Open Interest data define the direction of the market?	CO-2	L-4
Q.1: (E). How can a business use a Future contract to manage currency exchange risk?	CO-2	L-4
Q.1: (F). Define "Basis Risk." When is the basis considered to be strengthening?	CO-2	L-4

SECTION – B

All questions are compulsory (Each question have an internal choice. Attempt any one (either A or B) from the internal choice)   **6 x 3 = 18 Marks**

Questions	CO	Bloom's Level
Q. 2: (A). Futures contracts are standard while Forward contracts are custom." Analyze this statement by comparing the two instruments on the basis of Liquidity, Credit Risk, and Settlement Mechanism.	CO-2	L-4
Or		
Q. 2: (B). On January 1, the spot price of a commodity is $160 and the June futures price is $166. On May 1, the spot price is $190 and the June futures price is		

	CO	Bloom's Level
$194. A company entered into a futures contract on January 1 to hedge the sale of the commodity on May 1. The company closes out its position on May 1. What is the effective price received by the company for the commodity?	CO-2	L-4
Q. 3: (A). Assume you're an options trader and you decide to initiate a short strangle strategy, anticipating a sideways move in the stock price of Infosys. You buy one out-of-the-money call option and one out-of-the-money put option on Infosys stock. Details of the options: Current stock price of Infosys : Rs 1500 Call option strike price: Rs 1520 Premium paid for call: Rs 25 Put option strike price: RS 1480 Premium paid for put: Rs 22 Calculate: a) The total premium received for the strangle. b) The break-even points for the strategy. c) The profit or loss if Infosys stock ends up at 1600 at expiration. d) The profit or loss if Infosys stock ends up at 1420 at expiration.	CO-3	L-5 L-5
Or **Q. 3: (B).** Compare and contrast a Bull Call Spread and a Bear Put Spread. Under what specific market views would a trader choose one over the other? Provide a payoff diagram for the Bull Call Spread.	CO-3	L-5
Q. 4: (A) You are managing a portfolio of options. Consider a Call Option with a current premium of Rs. 15. The spot price is Rs 100 with strike price of Rs 98. Following Option Chain data is available: Delta of the Strike: 0.60, Gamma: 0.04 Stock Price Change: The underlying stock price suddenly increases by Rs. 5. Estimate the new price of the Call Option using the Delta-Gamma approximation method. Explain why using Gamma provides a more accurate estimate than using Delta alone.	CO-5	L-2
Or Q. 4: (B). Define Theta and Vega . Explain the concept of "Time Decay" in options and discuss how it impacts a Long Call position versus a Short Call position as the expiration date approaches.	CO-5	L-2

SECTION – C

Read the case and answer the questions   **5×02 = 10 Marks**

Questions	CO	Bloom's Level
Q. 5: Case Study: Two companies, **Alpha Corp** and **Beta Ltd**, are looking to borrow **Rs. 50 Crores** for a period of 5 years. They have been offered the following rates:	CO-5	L-6

Company	Fixed Rate Cost	Floating Rate Cost
Alpha Corp	10.0%	MIBOR + 0.3%
Beta Ltd	11.2%	MIBOR + 1.0%

Alpha Corp prefers a **Floating Rate** loan but has a comparative advantage in the Fixed Rate market.

Beta Ltd prefers a **Fixed Rate** loan.

A financial institution (Bank) acts as an intermediary to facilitate a swap and charges a fee of **0.1%**.

Questions

Q 5: (A): Analyze the "Quality Spread Differential" (QSD) available in this scenario. Determine if a mutually beneficial swap is possible.

5: (B). Design a Swap structure that distributes the net gain equally between Alpha Corp and Beta Ltd (after paying the Bank's fee).

Calculate the effective interest rate for both companies after the swap.

Kindly fill the total marks allocated to each CO's in the table below:

COs	Marks Allocated
CO1	06 Marks
CO2	12 Marks
CO3	06 Marks
CO4	06 Marks
CO15	10 Marks