

END SEMESTER EXAMINATION, MAY - 2026**B. Com. (Hons.) Semester - VI****Subject Name: Derivatives & Risk Management****Subject Code: BCMFI202****Time allotted: 03 Hours****Max. Marks: 100****Note: Read all the instructions carefully**

Q.1 VERY SHORT ANSWER QUESTIONS – Attempt All.		(10x2 = 20 Marks)
a.	Define default risk.	CO1
b.	What is initial margin?	CO1
c.	What is an American option?	CO1
d.	Define OTC traded derivatives.	CO1
e.	What is risk transfer?	CO1
f.	The underlying asset ofis currency or exchange rate.	CO2
g.	Identify which option will be in-the-money when the spot price is greater than the exercise price.	CO2
h.	Explain who is referred to as a trader holding a position for a very short period.	CO2
i.	Classify whether a forward contract is OTC traded or exchange traded.	CO2
j.	Explain which type of derivative has currency or exchange rate as its underlying asset	CO2
Q.2 SHORT ANSWER QUESTIONS – Attempt any Five.		(5x4 = 20 Marks)
a.	Examine the key factors influencing the derivative market and illustrate how these factors affect pricing and trading decisions with suitable examples.	CO3
b.	Differentiate between forward contracts and futures contracts by applying their features to real-life financial scenarios, highlighting their practical implications.	CO3
c.	A company, Mangal Gold Traders Ltd., expects an increase in gold prices and enters into a long forward contract on 1st June 2025 to purchase 1500 grams of gold at a forward price of ₹5,250 per gram, with delivery scheduled on 1st December 2025. Calculate the profit or loss incurred by the company if the spot price of gold on the delivery date (1st December 2025) turns out to be ₹5,450 per gram.	CO3
d.	Apply the concepts of hedging, speculation, and arbitrage to a real or hypothetical market scenario and distinguish how a hedger, speculator, and arbitrageur would behave under the same conditions.	CO3
e.	Analyze the assumptions of the Cost of Carry Model and evaluate how each assumption affects the pricing of futures contracts under different market conditions.	CO4
f.	A speculator has taken a long position in four futures contracts on crude oil at a current futures price of ₹3,200 per barrel, with each contract representing a standard lot size of 120 barrels. The initial margin requirement is ₹35,000 per contract, and the maintenance margin is ₹28,000 per contract. 1. Determine the change in the futures price that would result in a margin call. 2. Under what conditions can the speculator withdraw ₹60,000 from the margin account? Explain with appropriate reasoning.	CO4
g.	Analyze the components of the Cost of Carry Model by evaluating how spot price, storage cost (paid at the beginning), and continuously compounded risk-free rate influence the fair value of a six-month cotton futures contract. Using the given data (spot price ₹18,000 per bale, storage cost ₹250 per bale, risk-free rate 7% p.a., and contract size of 25 bales), determine the fair price of the contract and interpret the impact of each factor on the final valuation	CO4

Q.3		STRUCTURED QUESTIONS – Attempt any Three.					(3x10 = 30 Marks)																																							
	a.	Analyze the structure and key features of option contracts and examine how these features influence the risk-return profile of investors in derivative markets.								CO4																																				
	b.	Analyze the given data of a three-month put option on Dabur India Ltd. (strike price ₹320, premium ₹25.75, spot price ₹300) to determine the intrinsic value and time value, and interpret what these values indicate about the option’s pricing and moneyness.								CO4																																				
	c.	Critically evaluate the factors influencing margin requirements in derivative markets and assess their impact on risk management practices for different market participants.								CO5																																				
	d.	Ms. Anita has taken a long position in three zinc futures contracts at a futures price of ₹280 per kg. The initial margin requirement is 20% of the contract value, and the maintenance margin is 75% of the initial margin.								CO5																																				
		The settlement prices for the next five days are as follows:																																												
		Day	1	2	3	4	5																																							
		Settlement Price (₹/kg)	275.40	278.60	270.20	265.80	272.50																																							
		The lot size of each contract is 800 kg. Prepare a margin account of the investor assuming that all margin calls are honoured immediately and lot size of the contract is 800 kg.																																												
Q.4		Case Analysis/ Situation Based QUESTIONS – Attempt any Two.					(2*15 = 30 Marks)																																							
	a	Critically evaluate the classification of a call option as In-the-Money (ITM), At-the-Money (ATM), or Out-of-the-Money (OTM) under varying market price scenarios. Justify your evaluation by comparing different cases and assessing their implications for investor decision-making and potential profitability.								CO5																																				
	b	Mr. Suresh, on 1st May 2018, has constructed a portfolio consisting of the following five stocks: <table><tr><td>Scrips</td><td>Market Price (₹)</td><td></td><td>No. of Shares</td><td></td><td>Beta</td></tr><tr><td>Infosys</td><td>1,200</td><td></td><td>6,000</td><td></td><td>1.10</td></tr><tr><td>TCS</td><td>2,000</td><td></td><td>3,500</td><td></td><td>0.95</td></tr><tr><td>ONGC</td><td>180</td><td></td><td>12,000</td><td></td><td>0.85</td></tr><tr><td>NTPC</td><td>150</td><td></td><td>15,000</td><td></td><td>0.70</td></tr><tr><td>SBI</td><td>300</td><td></td><td>10,000</td><td></td><td>1.20</td></tr></table> The annual cost of capital to the investor is 8% (continuously compounded) and the current value of the Nifty index is 11,000. The Nifty July futures contract expires in 3 months. You are required to: (i) Calculate beta of the portfolio. (ii) Calculate the fair value of the Nifty June futures. (iii) If the Nifty futures contract has a lot size of 50 units, calculate the number of contracts the investor needs to short to achieve a full hedge for his portfolio. Assume that the Nifty futures are trading at their fair value.								Scrips	Market Price (₹)		No. of Shares		Beta	Infosys	1,200		6,000		1.10	TCS	2,000		3,500		0.95	ONGC	180		12,000		0.85	NTPC	150		15,000		0.70	SBI	300		10,000		1.20	CO6
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	c	Consider the following data about August 2018 NIFTY options (Opening values of the day are taken): Exercise Price (K) 10100 10150 10200 10250 10300 10350 10400 10450 10500 Call Premium (₹) NA NA 52.40 34.20 21.80 16.50 12.60 10.25 8.90 Put Premium (₹) 9.80 11.20 13.50 17.60 22.40 28.75 NA NA NA The August NIFTY opened at 10300 on 1st August 2018.Classify each of the above options and find out intrinsic and time values of the options. (NA = Options are not available)								CO6																																				
