



**Programme: MBA**

**Course: Financial Derivatives**

**Course Code: 11.671.7**

**Enrolment no. \_\_\_\_\_**

**Full Marks: 70**

**Time: 3 Hrs.**

Q.No	Questions	CO	Bloom Taxonomy Category	Marks																		
<b>Section I</b>																						
1	<b>Short Answer type questions.</b>			<b>4 x 5 = 20</b>																		
a	Narrate in brief on the fundamental linkages between spot and derivative markets	CO1	Apply																			
	or																					
b	Classify the various categories of traders in the Derivative market.	CO1	Understand																			
	Discuss the types of margin requirements	CO3	Understand																			
c	“Hedging is the basic function of futures market”. Discuss the statement in the light of uses of futures contract.	CO3	Apply																			
	What do you understand by the term spread in option trading? Discuss the types of spreads with suitable diagrams?	CO4	Understand																			
d	or																					
	Pricing of currency is not different from other financial options”. Comment on the statement with suitable examples.	CO4	Analyze																			
e	What do you mean by equity swap? Explain its types and applications.	CO5	Remember																			
	Define the concept of financial swap? Discuss its importance and advantages.	CO5	Understand																			
<b>Section II</b>																						
	<b>Long Answer type questions.</b>			<b>3 x 10 = 30</b>																		
2	“Derivatives became very popular because of their unique nature to offer a combination of characteristics not found in underlying assets.” What are the features of Derivatives that distinguish them from underlying assets?	CO1	Analyze																			
	or																					
3	“Derivatives play a significant role in Price Discovery.” Justify	CO1	Analyze																			
	<p>A trader has gone long on 5 Brent crude futures for December settlement at \$26.32 per barrel. The minimum contract size for Brent futures contract is 100,000 barrels. The initial margin is \$50,000 and the maintenance margin is \$30,000. The futures close at the following prices on the next ten trading days:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Day 1</td><td>\$ 26.19</td></tr> <tr><td>Day 2</td><td>\$ 26.30</td></tr> <tr><td>Day 3</td><td>\$ 26.45</td></tr> <tr><td>Day 4</td><td>\$ 26.48</td></tr> <tr><td>Day 5</td><td>\$ 26.34</td></tr> <tr><td>Day 6</td><td>\$ 26.21</td></tr> <tr><td>Day 7</td><td>\$ 25.98</td></tr> <tr><td>Day 8</td><td>\$ 25.87</td></tr> <tr><td>Day 9</td><td>\$ 25.90</td></tr> <tr><td>Day 10</td><td>\$ 25.95</td></tr> </table> <p>The trader will take out the profit out of the margin account whenever he gets the opportunity to do so. You are required to: a. Prepare the margin account showing all the cash flows. b. Find the profit/loss for the trader after 10 trading days.</p>	Day 1	\$ 26.19	Day 2	\$ 26.30	Day 3	\$ 26.45	Day 4	\$ 26.48	Day 5	\$ 26.34	Day 6	\$ 26.21	Day 7	\$ 25.98	Day 8	\$ 25.87	Day 9	\$ 25.90	Day 10	\$ 25.95	CO3
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	or										
	“Speculators like to make gains by taking long & Short positions on the derivatives.” Discuss how speculation is done in a future Market.	CO3	Analyze								
4	The current stock index is 3500 and the annualized dividend yield is 6%. A six-month future is now currently trading at Rs 4000. The risk-free rate is 12%. Verify whether there is any scope for a risk-free arbitrage if 25% stocks pay dividend.	CO3	Evaluate								
	or										
	Explain the relationship between forward and futures prices with examples.	CO3	Understand								
<b>Section III</b>											
	<b>Application based questions</b>										
5	The Current Spot Rate is Rs 44.30. A speculator found that the following options are traded in the market: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Strike Price</th> <th>Call Premium</th> </tr> </thead> <tbody> <tr> <td>44.00</td> <td>1.75</td> </tr> <tr> <td>44.50</td> <td>1.50</td> </tr> <tr> <td>45.00</td> <td>0.75</td> </tr> </tbody> </table> <p>She is of the opinion that the Spot Rate is likely to experience wide variation though the direction is not clear. Work out the pay-off profile over a range of spot rates from Rs 43.00 to Rs 46.00 if a Butterfly strategy is used. (Round off the price to 25 Paise.)</p>	Strike Price	Call Premium	44.00	1.75	44.50	1.50	45.00	0.75	CO4	Evaluate
	Strike Price	Call Premium									
	44.00	1.75									
44.50	1.50										
45.00	0.75										
or											
	Consider a two-year American put option with a strike price of Rs 175 on a stock whose current market price is Rs 150. There are two time periods of one year and in each year the stock either moves up or down by 10% in next one year and by 15% in the second year. The value of risk-free interest rate is 6%. Calculate the value of put option using Binomial pricing Model.	CO4	Evaluate								
<b>1 x 20 = 20</b>											

Course Outcomes:

On successful completion of the course students will be able to:

CO 1: Appraise the fundamental features of a range of key financial derivative instruments

CO 2: Analyze and price diverse derivatives products to generate an optimal risk management strategy.

CO 3: Demonstrate an understanding of pricing forwards and futures contracts.

CO 4: Explain the binomial model and its extension in continuous time to the Black-Scholes model and understanding of the option trading strategies.

CO 5: Demonstrate knowledge relating to the techniques used for determining the fair value of the Swap contracts.