

**VPM's**  
**DR VN BRIMS, Thane**  
**Programme: MMS (2018-20) (Finance)**  
**Third Semester Examination October 2019**

<b>Subject</b>	<b>Derivatives and Risk Management</b>		
<b>Roll No.</b>		<b>Marks</b>	<b>60 Marks</b>
<b>Total No. of Questions</b>	<b>7</b>	<b>Duration</b>	<b>3 Hours</b>
<b>Total No. of printed pages</b>	<b>2</b>	<b>Date</b>	<b>18.10.2019</b>

		<b>Instructions:-</b> <ul style="list-style-type: none"> <li>• <b>Q. No 1</b> is compulsory.</li> <li>• Attempt <b>Any Four</b> from the Remaining Six Questions.</li> <li>• Figures to the right indicate marks in full.</li> </ul>	<b>Marks</b>
<b>Q. 1</b>		Case/Case-let Study (500-800 words)	<b>20</b>
	<b>a.</b>	India VIX fell down by 2.50% from 17.58 to 17.14 levels. On the option front, maximum put OI is at 11000 followed by 11200 (Premium 36) strikes while maximum call OI is at 11500 (Premium 17), followed by 12000 (Premium 10) strike. Marginal put writing is seen at 11000 (Premium 10) then, 11300 (Premium 70) strike while call unwinding is seen at all the immediate strike. Option data suggest wider range between 11000 to 11600 ranges. a) From the above data build an option strategy that is best for the market situation? b) Draw the payoff diagram and find the breakeven point	
	<b>b.</b>	A textile manufacturing company gets into a contract with a buyer, in which the buyer will buy cotton worth 100000 bales at the market price three months from now, i.e. 31 July, 2018. The company wants to hedge the risk against a fall in the price of cotton and book profits. In this case, the company fears that the price of cotton per bale will fall. The company has to identify a derivative instrument that can generate profit when the price of the cotton falls. Analyze the profit and loss situation after strategy (assuming the hypothetical prices) when i) The market moves up (5 Marks) ii) When the market moves down. (5 Marks)	
<b>Q. 2</b>		Answer <b>Any two</b> from the following.	<b>5x2 = 10</b>
	<b>a.</b>	Compare and contrast between forwarding contracts and futures contracts with suitable examples.	
	<b>b.</b>	Outline the different types of risks involved in derivative market	
	<b>c.</b>	A short forward contract with a delivery price of Rs. 40 was negotiated sometime ago and will expire in 3 months. The current forward price for a 3-month forward contract is Rs. 42. The 3-month risk-free interest rate is 8% with continuous compounding. What is the value of the short forward contract?	
<b>Q. 3</b>		Answer <b>Any two</b> from the following.	<b>5x2= 10</b>
	<b>a.</b>	Elaborate the meaning of gamma of an option position? What are the risks in the situation where the gamma is highly positive and the delta is zero?	
	<b>b.</b>	What is meant by protective put? Analyze the situation when it is useful?	
	<b>c.</b>	Analyze the scenario where the delta hedging strategies can give profit?	

<b>Q. 4</b>		Answer <b>Any two</b> from the following.	<b>5x2 = 10</b>
	<b>a.</b>	Illustrate with a help of example long hedging strategy in interest rate future.	
	<b>b.</b>	Outline the difference between implied volatility and historical volatility?	
	<b>c.</b>	On March 1 the spot price of oil is \$20 and the July futures price is \$19. On June 1 the spot price of oil is \$24 and the July futures price is \$23.50. A company entered into a futures contract on March 1 to hedge the purchase of oil on June 1. It closed out the position on June 1. Analyze the profit and loss situations for the company?	
<b>Q. 5</b>		Answer <b>Any two</b> from the following.	<b>5x2 = 10</b>
	<b>a.</b>	Illustrate with the help of example the effect on dividend payment in binomial option pricing model?	
	<b>b.</b>	Explain the concept of Value at risk?	
	<b>c.</b>	What is upper and lower bound for call option. Find the lower bound for the price of a 6-month European put option on a stock when the stock price is \$40, the strike price is \$46, the risk-free interest rate is 6%.?	
<b>Q. 6</b>		Answer <b>Any two</b> from the following.	<b>5x2 = 10</b>
	<b>a.</b>	Outline the concept of STT tax in derivative market?	
	<b>b.</b>	A 3-month call with a strike price of 25 costs Rs. 2. A 3-month put with a strike price of 20 costs Rs.3. A trader uses the options to create a strangle. For what 2 values of the stock price 3 months from now will the trader breakeven?	
	<b>c.</b>	A speculator decides to create a butterfly spread involving the following 3 one-year European call options on a stock with exercise prices (and corresponding call premia in parentheses): \$40 (premium \$3), ATM \$45 (premium \$2.30) and \$50 (premium \$2). Analyze the payoff?	
<b>Q. 7</b>		Answer <b>Any two</b> from the following	<b>5x2 = 10</b>
	<b>a.</b>	"If most of the call options on a stock are in the money, it is likely that the stock price has risen rapidly in the past few months". Discuss this statement.	
	<b>b.</b>	Elaborate with the help of an example put call parity equation in options?	
	<b>c.</b>	A company enters into a long futures contract involving 1,000 barrels of oil for \$20 per barrel. The initial margin is \$6,000 and the maintenance margin is \$4,000. What oil futures price will allow \$2,000 to be withdrawn from the margin account?	