P P SAVANI UNIVERSITY

Fourth Semester of MBA Examination

May 2022

SLMB8230 Financial Derivatives and Risk Management

06.05.2022, Friday **Time: 09:00 a.m. To 11:30 a.m.** **Maximum Marks: 60**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in same answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is not allowed.

SECTION – I

Q - 1 Answer the Following by selecting correct alternative (Any Five). **[05]**

(i) For how many months, Nifty future contract is available to trade ?
(a) One
(b) Three
(c) Six.
(d) Twelve

(ii) A contract that requires the investor to buy securities on a future date is called a
(a) short contract.
(b) long contract.
(c) hedge.
(d) cross.

(iii) Prime objective of Financial derivatives is
(a) Speculation
(b) Hedging
(c) Investment
(d) none of the above

(iv) In India, futures contracts are regularly traded on the
(a) Ahmedabad Stock Exchange.
(b) Bombay Stock Exchange.
(c) National Stock Exchange.
(d) None of the above

(v) Index Future in India is
(a) Cash Settled
(b) Physically settled
(c) Left open to carry over
(d) Prohibited for trading

(vi) Taking short position means trader is expecting price to
(a) Remain steady
(b) Rise substantially
(c) Go down
(d) either (b) or (c)

Q – 2 (a) What will be the price of Reliance's two month's future contract if the spot rate of Reliance is ₹ 2,500 and dividend is expected at ₹ 50 after 15 days, if r=7%. **[05]**
If Reliance two month future is available at ₹ 2,545, what course of action will you take assuming cost of carry model holds true.

Q - 2 (b) A portfolio manager owns three stocks : **[05]**

Stock	No. of Shares owned	Stock price	Beta
1	100,000	400	1.1
2	200,000	300	1.2
3	300,000	100	1.3

The spot Nifty Index is 16,980 and Future price is 17,000. Examine the position of hedged portfolio if

(a) Portfolio beta decreases to 0.8 and

(b) Portfolio beta increases to 1.5

OR

Q - 2 On April 15 when the spot price of TCS is ₹ 3,370, Mr Harshad bought 10 contracts of TCS Future at ₹ 3,400. Assume that the initial margin is ₹ 70,000 per contract and maintenance margin is ₹ 30,000 per contract. Lot size is 300. Daily settlement price for next few days are as follows : **[10]**

April 16	3,450
April 17	3,487
April 18	3,333
April 19	3,320
April 23	3,430

Assume that Mr Harshad withdraws half of maximum amount allowed profits from his margin account only once i.e. on April 17. Compute the balance in the account at the end of each of these 5 days.

Q - 3 Himadri Chemicals has the following information about LPDE Granuels (Raw Material) – **[10]**

Stock Item	**LPDE Granules**
Spot Rate	₹ 75 per kg
Carrying Cost	4% p.a. continuously compounded
3 months Future Contract (500kgs)	₹ 39,000

If the risk free rate of interest is 12 %. Advice the company on the course of action be to be taken.

OR

Q - 3 JK Paper trades in paper boards and manufactures carton boxes. Following Information is available in the future market on Paper Boards : **[10]**

Stock Item	**Single Layer Paper Board (SLPB)**
Spot rate	₹ 500/kg
Carrying cost (₹ per quintal per quarter)(Payable at the end of each quarter)	₹ 150
Cash rebate for bulk purchases –	₹ 10 per kg

receivable after 4 months	
6 month's forward contract rate (1 tonne)	₹ 5,20,000

Risk free interest rate is 9% p.a. Advice the company on the course of action be to be taken if company wants to take contract for 2 tonnes.

Q - 4 Attempt any one : **[05]**

(i) A speculator hopes that the IDEA is going to rise sharply. He has a long position on cash market of ₹ 1 crore on the IDEA. The beta of the IDEA is 1.8. Which position on the index future and how many contracts gives him a complete hedge assuming Nifty is trading at 15,000 with lot size of 50.

(ii) The beta of SBI is 0.8. A person has a long SBI position of ₹ 2,000,000 coupled with a short Nifty position of ₹ 1,000,000 (Nifty is trading at 15,000 with lot size 50). Is he hedged completely ? Advice.

SECTION – II

Q - 1 From the following Nifty Option chain data for the month of May Expiry, you need to state the following for each strike price: **[05]**

1. In the Money Option along with its range
2. Out of The money Option along with its range
3. At the Money Option
4. Intrinsic value of each Option
5. Time value of each Option.

Call LTP (₹)	Strike Price	Put LTP(₹)
473	**16,850**	254
449	**16,900**	270
422	**16,950**	278
390	**17,000**	308
364	**17,050**	329
331	**17,100**	349
304	**17,150**	372

Assume Nifty spot last closed at 17,000.

Q - 2 Zenith company's share is currently selling for ₹ 60. It is expected that after two months, the share price may either increase by 15% or fall by 10%. The risk free rate is 9 %. What should be the value of a two month European Call and Put option with an exercise price of 65. **[10]**

OR

Q - 2 A stock currently priced at ₹ 50. It is known that in the first 6 months of current year from now price will either go up by 20% or go down by 20%. Further in the later half of the year price may go up by 20% or go down by 20%. If risk free rate is 5 % continuously compounded and Strike price is 52. **[10]**

Calculate the value of European Put option.

Q – 3 Being a Fund manager in a broking firm, consider the following weekly expiry data of Nifty : **[10]**

Call LTP (₹)	Strike Price	Put LTP(₹)
231	**16,850**	57
190	**16,900**	72
163	**16,950**	86
133	**17,000**	108
107	**17,050**	133
85	**17,100**	163
65	**17,150**	193

Assuming Nifty spot close at 17,015, your client wants to create Long Straddle but he is not aware about the risk and likely scenario that may prevail at the time of expiry. You need to make a detailed note explaining maximum possibilities with different strike price what would be his likely profitability along with pay off matrix , graph, breakeven point etc. You can assume reasonable premium for the strike price which is not there in the above table.

OR

Q - 3 Being a Fund manager in a broking firm, consider the following weekly expiry data of Nifty : **[10]**

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Assuming Nifty spot close at 17,015, your client wants to create Short Strangle but he is not aware about the risk and likely scenario that may prevail at the time of expiry. You need to make a detailed note explaining possibilities with different strike price, what would be his likely profitability along with pay off matrix , graph, breakeven point etc. You can assume reasonable premium for the strike price which is not there in the above table.

Q - 4 Explain the following price sensitive behavior (Any One) **[05]**

(i) (a)Call Long
(b) Put Short

(ii) (a) Call Short
(b) Put long

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