

**JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA**

**PGDM / PGDM (M) / PGDM (SM)**

**V TRIMESTER (Batch 2020-22)**

**END TERM EXAMINATIONS**

**SET – I**

Course Name	Financial Derivatives & Risk Management (FDRM)	Course Code	FIN404
Max. Time	2 Hours	Max. Marks	40

**INSTRUCTIONS:**

- Attempt all Questions. This is an open book exam. All questions need to be done in an excel file with separate sheets for each question.

**Case: Please read the data carefully and answer below mentioned questions (Q1 to Q5)**

Nifty 50: 18416	365 days % change: 55.13	30 days % change: 4.74	Tomorrow's movement Prediction of Nifty 50 as on 20 Oct 2021 appears undecisive. It can be Bearish or Bullish.
Symbol	Underlying Value (October 8 <sup>th</sup> 2021)	Volume Freeze Quantity	Annualized (Implied) Volatility
TATAMOTORS	492.90	85,501	64.97

INSTRUMENT TYPE	EXPIRY DATE	OPTION TYPE	STRIKE PRICE	OPEN PRICE	HIGH PRICE	LOW PRICE	CLOSE PRICE	PREV. CLOSE
Stock Futures (TATAMOTORS) October 8 <sup>th</sup> 2021	28-OCT- 2021	-	-	482.45	498.25	472.75	495	483.55

Market Lot: 2850 shares

10 years Government Bond yield is 6.14%.

## OPTION CHAIN

CALLS							PUTS					
LTP	CHNG	BID QTY	BID PRICE	ASK PRICE	ASK QTY	STRIKE PRICE	BID QTY	BID PRICE	ASK PRICE	ASK QTY	CHNG	LTP
45.95	11.25	2,850	44.3	45.9	2,850	455	2,850	6.95	7.05	17,100	-1.45	7.05
42	9.7	5,700	41.1	41.7	2,850	460	39,900	8.15	8.3	22,800	-1.4	8.3
39.85	7.75	2,850	37.5	38.15	2,850	465	8,550	9.55	9.7	11,400	-1.75	9.6
34.3	7.6	2,850	34.25	34.6	5,700	470	2,850	11.25	11.35	8,550	-2.1	11.35
32	8.6	2,850	31.2	31.6	2,850	475	11,400	13.15	13.25	5,700	-2.55	13.2
28.5	7.1	2,850	28.35	28.55	2,850	480	11,400	15.15	15.25	5,700	-3.2	15.2
26.1	6.25	11,400	25.85	26.1	8,550	485	8,550	17.65	17.8	2,850	-3.4	17.85
23.95	5.6	2,850	23.8	24	17,100	490	2,850	20.55	20.6	2,850	-3.5	20.55
22	5.4	5,700	21.75	21.9	2,850	495	2,850	23.4	23.65	5,700	-4.4	23.3
20	4.5	11,400	20	20.05	2,850	500	2,850	26.5	26.7	5,700	-4.9	26.55
18.3	4.05	2,850	18.25	18.35	2,850	505	2,850	29.85	30.05	2,850	-5.25	29.8
16.9	3.45	5,700	16.75	16.85	14,250	510	8,550	33.2	33.65	8,550	-6.85	32.75
15.5	3.05	8,550	15.35	15.5	8,550	515	2,850	36.25	37.9	2,850	-6.4	36.45
14.15	2.55	5,700	14.15	14.25	11,400	520	8,550	40.6	41	5,700	-7.45	40.35
13	2.2	8,550	13	13.15	5,700	525	5,700	44.4	44.95	2,850	-7.4	42.6
12.05	2	5,700	12	12.1	11,400	530	2,850	48.45	48.95	2,850	-10.6	46.45
11.55	2.1	25,650	10.95	11.1	2,850	535	17,100	49.6	57.15	11,400	1.6	53.25
10.15	1.35	5,700	10.1	10.15	8,550	540	2,850	56.55	57.3	8,550	1.95	59.5

Q1. Suppose you are planning to invest in Tata motors on 8<sup>th</sup> Oct 2021. Determine the risk associated with your investment and suggest a hedging strategy with the help of Tata motors future contract. Also assess the risk and return in your position at expiry if stock price becomes 499 and future contract becomes 505. (6 marks)

Q2. Determine the put-call parity relationship between an ITM (in the money) call and OTM (out the money) put option of Tata motors today. Evaluate the arbitrage opportunities available if Tata motors price is (i) above than 490 and (ii) below than 490 at expiry. (6 marks)

Q3. If you are holding a short position in 500 puts of Tata Motors with strike price 500 today. Determine the strategy to make the portfolio delta and gamma neutral. (6 marks)

Q4. Based on the market trends and predictions, Evaluate the most appropriate trading strategy by using Tata motors options with the help of payoffs and profit/loss diagram. (6 marks)

Q5. If Tata motors prediction to increase or decrease by 25% and 15% respectively at expiry. Determine the value of a call option today with a strike price of 480? Explain the arbitrage opportunities and suggest a strategy to receive the arbitrage benefits. (6 marks)

Q6. "Firms can hedge their currency mismatches by using currency derivatives". Explain the statements from the view point of exporters and importers. (5 marks)

Q7. Companies with high credit risk cannot access fixed rate markets directly. For such companies, you suggest firm to enter into an interest rate swap or current swap agreement to take comparative advantages? Also, do you think it increase or decrease the risk of an intermediary financial institution swap portfolio? Justify your answer with an example. (5 marks)