**JAIPURIA INSTITUTE OF MANAGEMENT, INDORE**

**PGDM**

**FIFTH TRIMESTER (Batch 2019-21)**

**END TERM EXAMINATION, JAN-2021**

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| --- | --- | --- | --- |
| Course Name | **Financial Derivatives & Risk Management** | Course Code |  |
| Max. Time | **2 hours** | Max. Marks | **40** |

**INSTRUCTIONS:**

All the questions are compulsory.

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**Question.1 (10 Marks)**

Deepak, advisor, has a client who believes the common stock price of KEI Industries could move substantially in either direction in reaction to an expected court decision involving the company. The current market price is Rs.58 per share. The client currently owns no KEI shares but asks Deepak for advice about implementing a strangle strategy to capitalize on the possible stock price movement. Deepak gathers the KEI option pricing data shown in the following table: KEI Industries Option Pricing Data

|  |  |  |
| --- | --- | --- |
| **Particulars** | **Call Option** | **Put Option** |
| Option Price | Rs.5 | Rs.4 |
| Strike Price | Rs.60 | Rs.55 |
| Time to Expiration | 3 months | 3 months |

1. Recommend whether Deepak should choose a long strangle strategy or a short strangle strategy to achieve the client’s objective. Justify your recommendation with one reason.
2. Indicate, at expiration for the appropriate strangle strategy in Part a, the

(i). Maximum possible loss

(ii). Maximum possible gain

(iii). Break-even Price

1. The delta of the call option is 0.625 and KEI share does not pay any dividends. Calculate the appropriate change in option price of the call if KEI share price immediately increase to Rs.59.

**Question.2 (10 Marks)**

Calculate the value of an eight month European put option on US dollar with a strike price of 1$ = Rs. 50. The current exchange rate is 1$ = Rs. 52, the volatility of the exchange rate is 15%, the risk-free rate in India is 8% per annum and the risk-free rate in US is 6% per annum.

**Question.3 (10 Marks)**

Connect Catering, British Company wishes to borrow US Dollars at a fixed rate of interest. Questcor Pharmacy, a US Multinational, wishes to borrow sterling at a fixed rate of interest. They have been quoted the following rates per annum.

|  |  |  |
| --- | --- | --- |
| Particulars | Sterling | US Dollars |
| Connect Catering | 8 % | 4 % |
| Questcor Pharmacy | 7.6 % | 3.2 % |

Design a swap that will net a bank, acting as intermediary, 10 basis points per annum.

**Question.4 (a) (5 Marks)**

On January 2 of a particular year, an American Firm decided to close out its account at a Canadian bank on February 28. The firm is expected to have 5 million Canadian dollars in the account at the time of withdrawal. It would convert the funds to U.S.Dollars and transfer them to a New York bank. The relevant forward exchange rate was $0.7564. The March Canadian dollar futures contract priced at $0.7541. Determine the outcome of a future hedge if on February 28 the spot rate was $0.7207 and the future rate was).7220. All prices are in US Dollars per Canadian dollar. The Canadian dollar futures contract covers CD 1, 00,000.

**Question.4 (b) (5 Marks)**

R is an independent observer of the market. His funds position does not allow him to take risks so he has been avoiding trading in securities. However, R keeps a close watch for an arbitrage opportunity that is present. R has funds under his control worth Rs.1 million which can currently earn a risk free rate of 7 %. He finds that L ltd. is presenting quoting at Rs.520 in the stock market. The two month future is quoting at Rs.546. Is there a arbitrage opportunity? Is so, give the chronological steps involved?