

1. Unique Paper Code : 2923060049
2. Name of the Paper : DERIVATIVES AND FINANCIAL RISK MANAGEMENT
3. Name of the Course : BMS
4. Semester : VII
5. Max Marks : 90 Marks
6. Max Time : 3 Hrs

Instructions

1. Attempt any five out of the six questions.
2. Use of a **non-programmable scientific calculator** is permitted.
3. Maintain accuracy up to four decimal places.
4. All questions carry equal marks

Q1: Explain the following:

1. Long Hedge
2. Price Risk
3. Counterparty Risk
4. Direct Quote
5. Cross Currency Pair
6. Risk

Q2: Answer the following:

1. Spot value of Nifty is 26157. An investor buys a one-month nifty 26140 call option for a premium of Rs.27. Calculate Net and Gross P/L of buyer and seller of option, If nifty close at 27300 P/L.
2. SBI trades in the spot market at Rs. 950. Money can be invested at 11.5% p.a. Calculate 1 month Future of SBI futures contract.
3. USDINR = 89; USDPKR = 280. Calculate INRPKR.

Q3: On 1st Jan 2025, Mr. Alok an exporter enters into a forward contract with SBI bank to sell 100,000 USD on 31st March 2025 @ 89.40.

1. Mr. Alok received information about the cancelation of the original deal from the counterparty on the date i.e., 26th Feb 2025. Therefore, Mr. Alok requested the SBI bank to cancel forward before the due date i.e., 28th Feb 2025.

Inter Bank rate on 26th Feb 2025 was as follows:

Spot: 89.22 – 89.27

One-month premium 15/20

2. Mr. Alok received information about the cancelation of the original deal from the counterparty on the date of maturity of the contract. Therefore, Mr. Alok requested the SBI bank to cancel forward contract.

Inter Bank rate on 31st March 2025 was as follows:

Spot: 89.52 – 89.57

One-month premium 15/20

Additional Information for both parts

Interest rate @ 12%.

The bank charge 1% on each trade

Calculate the net cash Inflow/Outflow of Mr. Alok

Q4: Given:

- 1st Period Up Factor = **1.23**
- 2nd Period Up Factor = **1.17**
- 1st Period Down Factor = **0.87**
- 2nd Period Down Factor = **0.87**
- Spot Price = **400**
- Strike Price = **405**
- Interest Rate = **5.55%**

Calculate:

1. **Call premium** (two-period model).
2. **Put premium** (two-period model).

Q5: Draw the payoff diagrams of the following spreads/combinations along with all the trades executed to construct each spread/combination. Payoff diagrams without drawing the executed trades used to construct the spreads/combinations will be awarded **zero marks**.

1. Butterfly Spread (Call)
2. Bull Spread (Put)
3. Bear Spread (Call)

Q6: Calculate the Call and Put delta. Construct zero delta portfolio with call and spot and, zero delta portfolio with call and spot

- S (stock price) = 402
- X (strike price) = 400
- r (risk-free rate) = 5.5%
- σ (daily volatility) = 1%
- (time to expiry) = 45 days