

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Fourth Semester MBA Degree Examinations, August 2026

CURRENCY DERIVATIVES & RISK MANAGEMENT

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FOUR full questions from Question No. 1 to 7.

2. Question No. 8 is compulsory

3. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PO)</u>
1.	a. Analyze the differences between OTC and exchange-traded derivatives.	03	(2 :1 : 1)
	b. Discuss the important economic functions performed by the derivative market.	07	(2:1 : 4)
	c. Explain the types of financial derivatives instruments.	10	(2 :1 : 2)
2.	a. Explain the concept of Put–Call parity and discuss the relationship between the prices of a European call option, put option.	03	(2 :2: 1)
	b. Describe financial swap. Discuss the different types of financial swaps and their basic features.	07	(2 :2 : 1)
	c. Price of non-dividend paying share is Rs.155, A 3-month European call option has strike price of Rs.150, Volatility is 30 % & risk free interest rate is 6 % pa. What is the Black Scholes price for a call?	10	(4:3: 2)
3.	a. Explain the circumstances under which a margin call is triggered.	03	(2 :2 : 2)
	b. A three months Futures contract on Equity share is available at Rs.327 which currently trading at Rs.320 in the spot market. Assume that the continuously compounded annual risk free rate of return is 7 %. Is there is any arbitrage opportunity? If yes, explain the process of arbitrage and find the amount of profit to be made.	07	(4 :2 : 2)
	c. The current market price of ABC Ltd. is ₹100. An investor expects the price to rise moderately over the next three months. The investor purchases a ₹100 Call option by paying a premium of ₹8 and sells a ₹120 Call option by receiving a premium of ₹3. Both options have the same expiry date. Analyse the investor's profit or loss if the stock price at expiry is ₹90, ₹105, ₹115, ₹120, and ₹130.	10	(3 :3 : 3)
4.	a. Explain the foreign exchange market and list its major characteristics.	03	(2 :4 : 4)
	b. Discuss the balance of payments and identify its major components.	07	(2 :4 : 1)
	c. List the major participants in the foreign exchange market.	10	(2 :4 : 4)
5.	a. Explain the different methods of quoting exchange rates with suitable example.	03	(2 :4 : 2)

- b. The following exchange rates are quoted: 07 (3 :5 : 1)
- (i) INR /USD = ₹83.00/₹83.10
- (ii) USD/EUR = \$1.0800/\$1.0810
- Calculate the INR /EUR cross exchange rate.

- c. The following USD/INR exchange rates are quoted by a bank: 10 (3:5: 4)

Currency Pair	Spot Rate	1-Month Forward Points	3-Month Forward Points
INR/USD	₹95.1010 – ₹95.1100	225/275	300/350

- (i) Determine the 1-month outright forward INR/USD rates.
- (ii) Determine the 3-month outright forward INR/USD rates.
- (iii) Calculate the forward spread for the 1-month and 3-month quotations.

6. a. Explain American Depository Receipts (ADRs) and Global Depository Receipts (GDRs). 03 (2 :5 : 2)

- b. List and discuss the major types of foreign exchange exposures. 07 (2 :5 : 2)

- c. An Indian exporter is expected to receive USD 1 million after six months. 10 (3 :4 : 4)

The exchange rates are:

Spot rate: INR/USD: ₹94

6-month forward rate: INR/USD :₹96

The exporter is exposed to exchange-rate fluctuations and is considering alternative hedging strategies.

Required:

(i) If the exporter fears that the US dollar may depreciate, recommend an appropriate foreign exchange risk-management strategy. Justify the choice of the hedging instrument.

(ii) If the exporter expects the US dollar to appreciate and the exchange rate is expected to reach ₹96.96/USD after six months, evaluate whether the exporter should hedge the receivable or remain unhedged.

7. a. Explain different global stock markets instruments. 03 (2 :5 : 1)

- b. Explain the use of options and futures instruments for hedging the company's foreign currency exposures. 07 (2 :4 : 2)

- c. An Investor 'A' has taken Long position and investor 'B' has taken a Short position in Nifty futures at Rs. 9,900. The multiple associated with the contract is 75. The initial margin is assumed to be 10 % and the maintenance margin is 90 % of the initial margin. The settlement prices on the following 5 days are as follows: Design margin account for Long on future contract holder. 10 (3 :5 : 3)

Day	1	2	3	4	5
Settlement prices	9.950	9.920	9,850	9,800	9780

Case Study

On August 2026 an investor has portfolio consisting of eight securities

Security	Price	No. of shares	Beta
Reliance Industries	1,270	100	0.95
HDFC Bank	748	120	0.90
Bharti Airtel	1,931	50	0.75
ICICI Bank	1,434	90	1.05
TCS	2,900	75	0.60
Infosys	1,550	125	0.75
State Bank of India	1,013	100	1.15

Additional Information:

Risk free rate of interest (continuously compounded) is 18 % PA

Current S&P CNX Index= 23,869.60 (unit of 50), October Future Contract: 23,950

- a. Calculate the market value and beta of the investor's portfolio. 05 (4 :5 : 5)
- b. Calculate the theoretical value of the October Nifty futures contract. 05 (4 :5 : 5)
- c. Determine the number of Nifty futures contracts the investor should sell to hedge:
 (i) 100% of the portfolio. 05 (4 :5 : 5)
 (ii) 90% of the portfolio.
- d. Determine the number of futures contracts required to reduce the portfolio beta to **0.65**. 05 (4 :5 : 5)

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