

Faculty of Management Studies

End Semester Examination May 2025

MS3EF08 Financial Derivatives

Programme	:	BBA	Branch/Specialisation	:	-
Duration	:	3 hours	Maximum Marks	:	60

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary.
 Notations and symbols have their usual meaning.

Section 1 (Answer all question(s))

Marks CO BL
 1 1 1

Q1. What is the primary characteristic of a financial derivative?

Rubric	Marks
A contract deriving value from an underlying asset	1

- A physical asset A contract deriving value from an underlying asset
 A government bond Equity shares

Q2. The primary role of financial derivatives is to-

1 1 1

Rubric	Marks
Transfer risk between parties	1

- Guarantee fixed returns Transfer risk between parties
 Control inflation Increase government revenue

Q3. Which regulatory body oversees the derivatives market in India?

1 2 2

Rubric	Marks
SEBI	1
<input type="radio"/> RBI	<input type="radio"/> IRDA
<input checked="" type="radio"/> SEBI	<input type="radio"/> Ministry of Finance

Q4. The Securities Contracts (Regulation) Act was enacted in which year?

1 2 2

Rubric	Marks
1956	1
<input type="radio"/> 1992	<input type="radio"/> 2002
<input type="radio"/> 1985	<input checked="" type="radio"/> 1956

Q5. How do forward contracts differ from futures contracts?

1 3 3

Rubric	Marks
Futures contracts are settled daily while forward contracts are settled at maturity	1

- Forward contracts are standardized while futures contracts are customized
- Futures contracts are settled daily while forward contracts are settled at maturity
- Forward contracts are traded on exchanges
- Both contracts have identical structures

Q6. What is a forward rate agreement (FRA)?

1 3 3

Rubric	Marks
A contract that allows the locking of future interest rates	1

- A contract to buy/sell foreign currency
- A contract that allows the locking of future interest rates
- A contract to exchange interest payments
- A financial security issued by companies

Q7. What is put-call parity?

1 4 4

Rubric	Marks
Relationship between the price of a put option, a call option, and the underlying asset	1

- Relationship between options and bonds
- A pricing model for futures contracts
- Relationship between the price of a put option, a call option, and the underlying asset
- A risk-free arbitrage opportunity

Q8. The Black-Scholes model is used to price which type of derivative?

1 4 4

Rubric	Marks
Options	1

- Futures
- Options
- Forwards
- Swaps

Q9. What is the primary purpose of interest rate swaps?

1 5 3

Rubric	Marks
Hedging against interest rate fluctuations	1

- Speculation
- Arbitrage
- Hedging against interest rate fluctuations
- Trading commodities

Q10. Which type of swap involves exchanging fixed-rate payments for floating-rate payments?

1 5 3

Rubric	Marks
Interest Rate Swap	1

- Currency Swap
- Interest Rate Swap
- Equity Swap
- Commodity Swap

Section 2 (Answer all question(s))

Marks CO BL

Q11. Define financial derivatives and list their basic types.

2 1 2

Rubric	Marks
Financial derivatives are contracts whose value is derived from underlying assets like stocks, bonds, or commodities. Basic types include Futures, Options, Forwards, and Swaps with explanation	2

Q12. Explain the roles of different traders in the financial derivatives market.

3 1 2

Rubric	Marks
Roles & explanation	3

Q13. (a) Explain the uses and risks associated with financial derivatives.

5 1 2

Rubric	Marks
4 uses and 4 risks associated with financial derivatives.	5

(OR)

(b) Discuss the types of traders in the derivative market.

Rubric	Marks
Traders in the derivative market.	5

Section 3 (Answer all question(s))

Marks CO BL

Q14. Discuss the role of the following:

4 2 2

- (i) SEBI in financial derivatives regulation
- (ii) Securities Contracts (Regulation) Act, 1956

Rubric	Marks
Explain both role each 2 marks	4

Q15. (a) Compare and contrast the SEBI Act, 1992, and the Securities Contracts (Regulation) Act, 1956.

6 2 2

Rubric	Marks
Compare the SEBI Act, 1992, and the Securities Contracts (Regulation) Act, 1956.	3
Contrast the SEBI Act, 1992, and the Securities Contracts (Regulation) Act, 1956.	3

(OR)

(b) Explore the regulatory framework for risk management in Indian financial markets. How do regulatory measures aim to mitigate risks and ensure market stability?

Rubric	Marks
Regulatory framework for risk management in Indian financial markets	3
Measures aim to mitigate risks and ensure market stability	3

Section 4 (Answer all question(s))

Marks CO BL

Q16. Explain the concept of forward rate agreements with examples. Discuss the valuation of forward contracts. 4 3 3

Rubric	Marks
Concept of forward rate agreements with examples	2
Valuation of forward contracts.	2

Q17. (a) A trader enters into a forward contract to buy 500 shares of XYZ Ltd. at ₹500 per share. If the spot price on the settlement date is ₹520, calculate the gain/loss for the trader. 6 3 4

Rubric	Marks
$\text{Gain/Loss} = (\text{Spot Price} - \text{Forward Price}) * \text{Number of Shares}$ $= (\text{₹520} - \text{₹500}) * 500$ $= \text{₹10,000 (Profit)}$	6

(OR)

(b) An FRA contract is signed for ₹10,00,000 notional principal for 90 days. The agreed interest rate is 5%, and the market interest rate on settlement is 6%. Find the settlement amount.

Rubric	Marks
Solution: Using the settlement formula: $\text{Settlement} = \left(\frac{10,00,000 \times (0.05 - 0.06) \times \frac{90}{360}}{1 + 0.06 \times \frac{90}{360}} \right)$ $= \left(\frac{10,00,000 \times (-0.01) \times 0.25}{1 + 0.015} \right)$ $= \left(\frac{-2,500}{1.015} \right) = -\text{₹2,464.08}$ Since the result is negative, the buyer pays ₹2,464.08 to the seller.	6

Section 5 (Answer all question(s))

Marks CO BL

Q18. Explain different types of options and their payoffs. 4 4 2

Rubric	Marks
4 types with payoffs	4

Q19. (a) Discuss the factors affecting option pricing in detail.

6 4 4

Rubric	Marks
6 factors.	6

(OR)

- (b)** A stock is trading at ₹100, the strike price is ₹95, the risk-free rate is 5% per annum, volatility is 20%, and the time to expiration is 6 months. Find the price of the European call option using the Black-Scholes Model.

Rubric	Marks
<p>Solution:</p> <p>Given:</p> <ul style="list-style-type: none"> • $S_0 = 100$ • $K = 95$ • $r = 0.05$ • $\sigma = 0.20$ • $T = 0.5$ $d_1 = \frac{\ln(100/95) + (0.05 + 0.02) \times 0.5}{0.2 \times \sqrt{0.5}}$ $= \frac{\ln(1.0526) + 0.035}{0.1414}$ $= \frac{0.0513 + 0.035}{0.1414} = \frac{0.0863}{0.1414} = 0.61$ $d_2 = d_1 - 0.2 \times \sqrt{0.5} = 0.61 - 0.1414 = 0.4686$ <p>Using normal distribution values:</p> <ul style="list-style-type: none"> • $N(d_1) = N(0.61) \approx 0.7291$ • $N(d_2) = N(0.4686) \approx 0.6803$ $C = 100 \times 0.7291 - 95e^{-0.05 \times 0.5} \times 0.6803$ $= 72.91 - 92.68 \times 0.6803$ $= 72.91 - 63.06 = ₹9.85$ <p style="text-align: center;">↓</p> <p>Thus, the call option price is ₹9.85.</p>	6

Section 6 (Answer any 2 question(s))

Q20. Differentiate between interest rate swaps, currency swaps, and cross-currency swaps with examples.

Marks CO BL

5 5 3

Rubric	Marks
5 Differences of each.	5

Q21. Explain the structure of an interest rate swap.

5 5 4

Rubric	Marks
Proper explanation	5

Q22. Explain the trading mechanism of currency swaps in detail.

5 5 4

Rubric	Marks
Mechanism with diagram.	5
