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CLASS X · INTRODUCTION TO FINANCIAL MARKETS (405) · SKILL SUBJECT · CBSE BOARD EXAMINATION 2027

PART B · UNIT 5

Derivatives

Unit Booklet · Short Notes · Board-Pattern Questions · Model Answers

Part B · 2 of 40 theory marks | 24 questions with model answers | Manish Mathur Sir | Taught: Thu 26 Nov (with Unit 6)

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STUDENT DETAILS

NAME _____

CLASS & SECTION _____

ROLL NO. _____

UNIT FINISHED ON _____

OBJECTIVE SELF-CHECK _____ / 15

1

READ THIS FIRST · SHORT NOTES

Unit Notes

What a derivative is, the main types (forwards, futures, options, swaps), the difference between futures and options, call and put options with simple profit and loss sums, why people use derivatives, and commodity derivatives.

THIS UNIT IN THE BOARD PAPER

2 / 40

Unit 5 carries **2 marks**. In the CBSE sample paper it gave **2 one-mark items**: the meaning of a **call option** and the rights of a **call buyer**. Futures vs options and commodity derivatives are also asked as 2-mark questions.

SYLLABUS 2026–27 · WHAT CBSE LISTS FOR THIS UNIT

- Derivatives: meaning and types
- Futures and options; difference between them
- Risk and return in derivative trading
- Commodity derivatives: features
- Commodity derivatives vs financial derivatives

HOW THE CBSE SKILL-SUBJECT PAPER IS SET (THEORY 50 MARKS · 2 HOURS)

1 mark
Objective: MCQ, assertion–reason, fill in the blank, true/false, match. Q1 is Part A; Q2–Q5 (answer 5 of 6 in each) are Part B.

2 marks
Short answer in **20–30 words**: two clear points. Part B: answer any 4 of 6 (Q11–Q16).

4 marks
Long answer in **50–80 words**: four points, or 2 + 2. Answer any 3 of 5 (Q17–Q21); often case-based.

Part B = 40
Objective 20 + short 8 + long 12. Part A (Employability Skills) = 10. Practical = 50.

Write in points, start each point with the key word, and stay inside the word limit. Objective answers: write the option letter **and** the answer.

1 What is a derivative?

Derivative: a contract whose value is **derived from** the price of something else, called the **underlying asset**.

- **Underlying assets:** shares, a stock index (Nifty 50, Sensex), commodities (gold, crude oil, wheat), currencies, interest rates.
- The contract is for buying or selling the asset on a **future date** at a price fixed **today**.
- Exchange-traded derivatives began in India in **2000** with index futures; they are regulated by **SEBI**.

2 Types of derivatives

Type	Meaning
Forward	Private agreement to buy or sell at a fixed price on a future date; terms made to suit both; not traded on an exchange
Futures	Like a forward but **standardised** and traded on an exchange; both sides must complete the deal
Options	Gives the buyer a **right but not an obligation** to buy or sell at a fixed price, for a fee called the premium
Swaps	Two parties exchange cash flows, e.g. fixed interest for floating interest

3 Options – key words

- **Call option:** right to **buy** the asset at the strike price on or before expiry.
- **Put option:** right to **sell** the asset at the strike price.
- **Strike (exercise) price:** the price fixed in the contract.
- **Premium:** the price the option buyer pays the seller.
- **Expiry date:** last day of the contract.
- **Buyer (holder):** pays premium, has the right. **Seller (writer):** receives premium, has the obligation if the buyer exercises.

4 Futures vs options

Basis	Futures	Options
Obligation	Both buyer and seller **must** complete the deal	Buyer has a **right**, not an obligation; seller is obliged
Advance payment	Margin money with the exchange	Premium paid by the buyer
Loss for buyer	Can be large	Limited to the **premium**
Profit for buyer	Can be large	Can be large

5 Risk and return – simple sums

CALL OPTION

Riya buys a **call**: strike ₹500, premium ₹20. At expiry the share is ₹560. She buys at 500 and can sell at 560: gain ₹60. **Profit = 60 – 20 = ₹40 per share**. If the share is ₹480, she does not exercise; **loss = premium ₹20**. Break-even = 500 + 20 = ₹520.

PUT OPTION

Karan buys a **put**: strike ₹300, premium ₹10. At expiry the share is ₹270. He can sell at 300 what is worth 270: gain ₹30. **Profit = 30 – 10 = ₹20 per share**.

FUTURES

Buy futures on 100 shares at ₹1,000. Price at expiry ₹1,050: **profit = 100 × 50 = ₹5,000**. If ₹960: **loss = 100 × 40 = ₹4,000**.

Brokerage and taxes are ignored in these sums.

6 Why people use derivatives

- **Hedging:** protecting against a fall or rise in price (a farmer fixes the price of wheat in advance).
- **Speculation:** trying to profit from price changes with a small amount of money – high risk.
- **Arbitrage:** making a safe small profit from a price difference in two markets.
- **Price discovery:** futures prices show what the market expects future prices to be.

7 Commodity derivatives

> **Commodity derivative:** a futures or options contract whose underlying asset is a **commodity** – a physical good.

- **Bullion and metals:** gold, silver, copper. **Energy:** crude oil, natural gas. **Agriculture:** wheat, cotton, soybean, guar.
- Traded on **MCX** (Multi Commodity Exchange) and **NCDEX**; regulated by SEBI since 2015.
- **Features:** quality (grade) is fixed in the contract; goods may be **delivered** from approved warehouses; prices depend on season, weather, storage and world demand; used by farmers, traders and factories to hedge.

Basis	Commodity derivative	Financial derivative
Underlying	Physical goods	Shares, index, currency, interest rate
Quality	Grade matters	No quality question
Delivery	Physical delivery through warehouses possible	Mostly settled through the exchange and depository
Price factors	Season, weather, storage cost	Company results, economy, interest rates

Key terms

15 terms

Derivative: contract whose value depends on another asset

Underlying asset: the asset a derivative is based on

Forward: private, customised future contract

Futures: standardised exchange-traded contract; both obliged

Option: right but not obligation

Call option: right to buy

Put option: right to sell

Strike price: price fixed in the option

Premium: price paid by the option buyer

Expiry date: last day of the contract

Option writer: seller; receives premium

Hedging: reducing price risk

Speculation: taking risk to profit from price moves

Commodity: physical good such as gold or wheat

MCX · NCDEX: commodity exchanges of India

Common mistakes and exam tips

AVOID THESE

- Call = right to **buy**; put = right to **sell** ('put it away').
- Option **buyer**: right, pays premium, loss limited to premium. Option **seller**: obligation, receives premium.
- In futures, **both** parties are obliged.
- Call profit = (market price – strike) – premium. Put profit = (strike – market price) – premium.
- Commodity derivatives are now regulated by **SEBI**.

A

PART A · 1 MARK EACH

Objective Questions

15 questions: MCQs, assertion–reason, fill in the blanks and true/false, like Q2–Q5 of the board paper. Answers in Part E.

ASSERTION–REASON: HOW TO ANSWER

(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

A1. A derivative gets its value from: [1]

(a) Its printed face value
(b) An underlying asset
(c) The RBI
(d) The company's logo

A2. A call option gives its buyer the right to: [1]

(a) Sell the asset
(b) Buy the asset at the strike price
(c) Receive dividends
(d) Vote in meetings

A3. The buyer of a call option: [1]

(a) Must buy the asset
(b) Has the right but not the obligation to buy
(c) Receives the premium
(d) Must sell the asset

A4. A put option gives the right to: [1]

(a) Buy **(b)** Sell **(c)** Borrow **(d)** Lend

A5. The price paid by an option buyer to the seller is the: [1]

(a) Strike price
(b) Premium
(c) Margin
(d) Coupon

A6. In which contract are BOTH parties obliged to complete the deal? [1]

(a) Call option
(b) Put option
(c) Futures
(d) None

A7. A call has strike ₹200 and premium ₹15. At expiry the share is ₹240. Profit per share is: [1]

(a) ₹40
(b) ₹25
(c) ₹15
(d) ₹55

A8. Which exchange is mainly for commodity derivatives? [1]

(a) MCX
(b) SEBI
(c) NSDL
(d) RBI

A9. A wheat farmer sells wheat futures before harvest to protect against a price fall. This is: [1]

(a) Speculation
(b) Arbitrage
(c) Hedging
(d) Dematerialisation

A10. ASSERTION–REASON [1]

Assertion (A): The maximum loss of an option buyer is limited to the premium.

Reason (R): The buyer can choose not to exercise the option.

(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

A11. ASSERTION–REASON [1]

Assertion (A): Forwards are traded on stock exchanges.

Reason (R): Futures contracts are standardised.

(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

A12. FILL IN THE BLANK [1]

The fixed price at which an option can be exercised is the _____ price.

A13. FILL IN THE BLANK [1]

The seller of an option is also called the option _____.

A14. TRUE OR FALSE [1]

Commodity derivatives in India are regulated by SEBI.

A15. TRUE OR FALSE [1]

In a commodity contract, the quality (grade) of the goods does not matter.

B — Short Answer Questions

PART B · 2 MARKS EACH

Answer in 20–30 words: two clear points. Model answers in Part E.

B1. Differentiate between futures and options. MUST DO [2]

B2. What is a call option? Who pays the premium? [2]

B3. State two features of commodity derivatives. [2]

B4. Give two uses of derivatives. [2]

B5. A put has strike ₹150 and premium ₹8. At expiry the share is ₹130. Find the profit per share. [2]
MUST DO

C — Long Answer Questions

PART C · 4 MARKS EACH

Answer in 50–80 words: four points, or two points with an example each. Model answers in Part E.

C1. Explain four types of derivatives. MUST DO [4]

C2. Distinguish between commodity derivatives and financial derivatives on four points. [4]

C3. Aman buys a call: strike ₹800, premium ₹30. Find his profit or loss if the share at expiry is (a) ₹870 (b) ₹780. What is the break-even price? [4]

D

PART D · CASE AND COMPETENCY BASED

Case-Based Questions

Read the situation, then answer from it and from the unit. These are the 4-mark board questions that test application.

D1. Case-Based · Gold for the wedding [4]

A jeweller must supply gold jewellery for a wedding in three months at a price agreed today. He fears gold prices will rise before he buys the gold. His friend suggests he buy gold futures on MCX now, while another friend suggests a call option on gold.

(i) What risk is the jeweller facing? [1]

(ii) What is this use of derivatives called? [1]

(iii) Give one advantage of the call option over futures, and one cost. [2]

E

PART E · ANSWERS IN CBSE MARKING-SCHEME STYLE

Answers

Objective key with a reason, then model answers: numbered value points, key word first, the mark for each point in orange, and the word count under each answer. Any other correct, relevant point also earns the mark.

Objective questions – answer key

Part A

Write the option letter **and** the answer, as the marking scheme does.

Q	Answer	Why (one line)
A1	**(b) An underlying asset**	Shares, index, commodity etc.
A2	**(b) Buy the asset at the strike price**	Call = buy.
A3	**(b) Has the right but not the obligation to buy**	Pays premium; may choose not to exercise.
A4	**(b) Sell**	Put = sell.
A5	**(b) Premium**	Paid upfront.
A6	**(c) Futures**	Options give the buyer only a right.
A7	**(b) ₹25**	(240 – 200) – 15 = 25.
A8	**(a) MCX**	Multi Commodity Exchange.
A9	**(c) Hedging**	Reducing price risk.
A10	**(a) Both true; R explains A**	R explains A.
A11	**(d) A false, R true**	A false (forwards are private deals); R true.
A12	**strike (exercise)**	Set in the contract.
A13	**writer**	Receives the premium.
A14	**True**	Since 2015.
A15	**False**	Correct: the grade is fixed in the contract; quality affects value.

Short answers

Part B · 2 marks

B1. Differentiate between futures and options. **[2]**

1. **Obligation:** futures oblige both sides; an option gives the buyer only a right. 1
2. **Payment:** futures need margin; option buyer pays premium. 1

21 words · CBSE asks 20–30 words | Marking: 1 + 1 = 2 | 1 + 1 | MUST DO

B2. What is a call option? Who pays the premium? **[2]**

1. **Call option:** right, not obligation, to buy at the strike price before expiry. 1
2. **Premium:** paid by the buyer to the seller. 1

21 words · CBSE asks 20–30 words | Marking: 1 + 1 = 2 | 1 + 1

B3. State two features of commodity derivatives. [2]

1. **Physical goods:** underlying is gold, oil or wheat; grade is fixed. 1
2. **Delivery:** goods may be delivered through approved warehouses. 1

19 words · CBSE asks 20–30 words | Marking: 1 + 1 = 2 | 1 + 1

B4. Give two uses of derivatives. [2]

1. **Hedging:** protects against price changes. 1
2. **Speculation or arbitrage:** profit from price moves or price differences. 1

15 words · CBSE asks 20–30 words | Marking: 1 + 1 = 2 | 1 + 1

B5. A put has strike ₹150 and premium ₹8. At expiry the share is ₹130. Find the profit per share. [2]

1. **Gain:** 150 − 130 = ₹20. 1
2. **Profit:** 20 − 8 = ₹12 per share. 1

14 words · CBSE asks 20–30 words | Marking: 1 + 1 = 2 | 1 + 1 | MUST DO

Long answers

Part C · 4 marks

C1. Explain four types of derivatives. [4]

1. **Forward:** private, customised deal; not on exchange. 1
2. **Futures:** standardised, exchange-traded; both obliged. 1
3. **Options:** right, not obligation, for a premium. 1
4. **Swaps:** exchange of cash flows, e.g. fixed for floating interest. 1

29 words · CBSE asks 50–80 words | Marking: 1 + 1 + 1 + 1 = 4 | 1 mark each | MUST DO

C2. Distinguish between commodity derivatives and financial derivatives on four points. [4]

1. **Underlying:** physical goods vs shares, index or currency. 1
2. **Quality:** grade matters vs no quality issue. 1
3. **Delivery:** warehouse delivery possible vs settled through exchange. 1
4. **Price factors:** season and weather vs company results and economy. 1

33 words · CBSE asks 50–80 words | Marking: 1 + 1 + 1 + 1 = 4 | 1 mark each

C3. Aman buys a call: strike ₹800, premium ₹30. Find his profit or loss if the share at expiry is (a) ₹870 (b) ₹780. What is the break-even price? [4]

1. **At ₹870:** (870 − 800) − 30 = ₹40 profit. 1½
2. **At ₹780:** does not exercise; loss = ₹30 premium. 1½
3. **Break-even:** 800 + 30 = ₹830. 1

25 words · CBSE asks 50–80 words | Marking: 1½ + 1½ + 1 = 4 | 1½ + 1½ + 1

Case-based answers

Part D

D1. Case-Based · Gold for the wedding (passage printed in Part D) **[4]**

(i) What risk is the jeweller facing? [1]

The risk of a **rise in the price of gold** (price risk).

(ii) What is this use of derivatives called? [1]

Hedging.

(iii) Give one advantage of the call option over futures, and one cost. [2]

Advantage: if gold prices fall, he need not buy at the higher strike – his loss is limited to the premium. **Cost:** he must pay the **premium** up front.

Marking: 1 + 1 + 2 = 4 | 1 + 1 + 2