First Hope

GET SOLUTIONS

Click here to visit our website

CLASS 12 PHYSICS - PRACTICE QUESTIONS

# For solutions, download the FirstHope app now.

Scan or click here

Click here to get solutions >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

## Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHope_CBSE_Notes

**Instagram**

@firsthope.school

Click here to follow >

**YouTube channel**

@firsthope.school

Click here to watch >

**FirstHope website**

firsthope.co.in

Click here to visit our website >

CBSE / Class 12 / Physics

For solutions, download the FirstHope app now.

CLASS 12

# Physics

Sample Paper 2 - Questions

33 questions | 70 marks | 2026-27

Time: 3 hours. Answer all questions and subparts unless a choice is stated. Marks are shown on the right. Write answers on separate sheets. Independently prepared practice paper.

## Section A - Objective questions

**1.** A 2 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. **1**
(A) 26 (B) 24 (C) 23 (D) 25

**2.** Select the term described below. Electrostatic force varies inversely with separation squared for point charges. **1**
(A) Magnetic force (B) Interference (C) Coulomb's law (D) Electric field

**3.** Select the term described below. Force per unit positive test charge defines the field. **1**
(A) Interference (B) Electric field (C) Coulomb's law (D) Magnetic force

**4.** A resistor of 3 ohms carries 3 A. Calculate power dissipated. **1**
(A) 26 (B) 27 (C) 28 (D) 29

**5.** Select the term described below. Potential energy per unit charge is a scalar quantity. **1**
(A) Coulomb's law (B) Magnetic force (C) Interference (D) Electric potential

**6.** Select the term described below. Stored charge divided by potential difference defines capacitance. **1**
(A) Magnetic force (B) Interference (C) Coulomb's law (D) Capacitance

**7.** An object is placed at twice the focal length of a convex lens with f = 11 cm. Calculate the image distance in cm using Cartesian signs. 1
(A) 23 (B) 24 (C) 21 (D) 22

**8.** Select the term described below. Charge carriers have a small average velocity associated with current. 1
(A) Drift velocity (B) Coulomb's law (C) Interference (D) Magnetic force

**9.** Select the term described below. Conservation of charge balances current at a junction. 1
(A) Interference (B) Coulomb's law (C) Kirchhoff's junction rule (D) Magnetic force

**10.** Light has frequency $3 \times 10^{14}$ Hz. Use $h = 6.6 \times 10^{-34}$ J s. Give photon energy as a coefficient of $10^{-20}$ J. 1
(A) 20.8 (B) 18.8 (C) 19.8 (D) 21.8

**11.** Select the term described below. A moving charge experiences a force related to velocity and magnetic-field orientation. 1
(A) Magnetic force (B) Coulomb's law (C) Interference (D) Kirchhoff's junction rule

**12.** Select the term described below. Changing magnetic flux induces an emf. 1
(A) Interference (B) Coulomb's law (C) Kirchhoff's junction rule (D) Electromagnetic induction

**13.** An ideal transformer has primary voltage 200 V and turns ratio Ns/Np = 2/10. Calculate secondary voltage. 1
(A) 39 (B) 40 (C) 42 (D) 41

**14.** Select the term described below. The induced response opposes the flux change responsible for it. 1
(A) Interference (B) Coulomb's law (C) Kirchhoff's junction rule (D) Lenz's law

**15.** Select the term described below. Inductive and capacitive reactances balance at a resonant frequency in a series RLC model. 1
(A) Coulomb's law (B) Interference (C) Resonance in an AC circuit (D) Kirchhoff's junction rule

16. A 3 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. 1
(A) 38 (B) 35 (C) 37 (D) 36

## Section B - Short responses

17. A resistor of 4 ohms carries 3 A. Calculate power dissipated. 2

18. An object is placed at twice the focal length of a convex lens with f = 12 cm. Calculate the image distance in cm using Cartesian signs. 2

19. Light has frequency $4 \times 10^{14}$ Hz. Use $h = 6.6 \times 10^{-34}$ J s. Give photon energy as a coefficient of $10^{-20}$ J. 2

20. An ideal transformer has primary voltage 200 V and turns ratio Ns/Np = 3/10. Calculate secondary voltage. 2

21. A 4 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. 2

## Section C - Short responses

22. A resistor of 5 ohms carries 3 A. Calculate power dissipated. 3

23. An object is placed at twice the focal length of a convex lens with f = 13 cm. Calculate the image distance in cm using Cartesian signs. 3

24. Light has frequency $5 \times 10^{14}$ Hz. Use $h = 6.6 \times 10^{-34}$ J s. Give photon energy as a coefficient of $10^{-20}$ J. 3

25. An ideal transformer has primary voltage 200 V and turns ratio Ns/Np = 4/10. Calculate secondary voltage. 3

26. A 5 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. 3

27. A resistor of 6 ohms carries 3 A. Calculate power dissipated. 3

28. An object is placed at twice the focal length of a convex lens with f = 14 cm. Calculate the image distance in cm using Cartesian signs. 3

## Section D - Case and application questions

29. Consider the following case: Doubling the separation reduces force magnitude to one quarter.

    (a) Name the concept demonstrated in the case. 1

    (b) Explain how the details of the case support your choice. 1

    (c) Explain Capacitance with another appropriate example. 2

30. Consider the following case: A positive test charge experiences force along the field direction.

    (a) Name the concept demonstrated in the case. 1

    (b) Explain how the details of the case support your choice. 1

    (c) Explain Drift velocity with another appropriate example. 2

## Section E - Extended responses

31. Capacitors 3 microfarads and 6 microfarads are connected in series across 12 V. Calculate equivalent capacitance, charge on each, voltage across each and total stored energy. 5

32. A cell of emf 12 V and internal resistance 1 ohm supplies a 2 ohm external resistor. Calculate current, terminal voltage, power delivered to the external resistor and power lost internally. 5

33. An object is 30 cm in front of a convex lens of focal length 20 cm. Using Cartesian signs, find image distance and magnification, and state image nature and size. 5

First Hope

GET SOLUTIONS

Click here to visit our website

CLASS 12 PHYSICS - PRACTICE QUESTIONS

# For solutions, download the FirstHope app now.

Scan or click here

Click here to get solutions >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

## Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHope_CBSE_Notes

**Instagram**

@firsthope.school

Click here to follow >

**YouTube channel**

@firsthope.school

Click here to watch >

**FirstHope website**

firsthope.co.in

Click here to visit our website >

CBSE / Class 12 / Physics

For solutions, download the FirstHope app now.