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 1 - 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 11 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. **1**
(A) 134 (B) 131 (C) 133 (D) 132

2. Which concept best explains the following situation? A diode can be used for rectification under suitable circuit conditions. **1**
(A) Kirchhoff's junction rule (B) Total internal reflection (C) Coulomb's law (D) Semiconductor diode

3. Which concept best explains the following situation? Mass defect corresponds to energy through the mass-energy relation. **1**
(A) Total internal reflection (B) Kirchhoff's junction rule (C) Binding energy (D) Coulomb's law

4. A resistor of 12 ohms carries 3 A. Calculate power dissipated. **1**
(A) 109 (B) 110 (C) 107 (D) 108

5. Which concept best explains the following situation? Greater momentum corresponds to shorter wavelength. **1**
(A) Kirchhoff's junction rule (B) Total internal reflection (C) de Broglie wavelength (D) Coulomb's law

6. Which concept best explains the following situation? Frequency affects maximum photoelectron kinetic energy. 1
(A) Total internal reflection (B) Kirchhoff's junction rule (C) Coulomb's law (D) Photoelectric effect

7. An object is placed at twice the focal length of a convex lens with f = 20 cm. Calculate the image distance in cm using Cartesian signs. 1
(A) 42 (B) 40 (C) 39 (D) 41

8. Which concept best explains the following situation? Two suitable slits produce alternating bright and dark fringes. 1
(A) Kirchhoff's junction rule (B) Coulomb's law (C) Total internal reflection (D) Interference

9. Which concept best explains the following situation? An optical fibre can guide light through repeated internal reflection. 1
(A) Coulomb's law (B) Kirchhoff's junction rule (C) Total internal reflection (D) Interference

10. Light has frequency 12×10^{14} Hz. Use $h = 6.6 \times 10^{-34}$ J s. Give photon energy as a coefficient of 10^{-20} J. 1
(A) 78.2 (B) 81.2 (C) 79.2 (D) 80.2

11. Which concept best explains the following situation? The circuit's impedance is then purely resistive under ideal assumptions. 1
(A) Kirchhoff's junction rule (B) Interference (C) Coulomb's law (D) Resonance in an AC circuit

12. Which concept best explains the following situation? An induced current resists the change that produced it. 1
(A) Lenz's law (B) Interference (C) Coulomb's law (D) Kirchhoff's junction rule

13. An ideal transformer has primary voltage 200 V and turns ratio Ns/Np = 11/10. Calculate secondary voltage. 1
(A) 220 (B) 219 (C) 221 (D) 222

14. Which concept best explains the following situation? Moving a magnet relative to a coil can produce an induced signal.
(A) Coulomb's law (B) Electromagnetic induction (C) Interference (D) Kirchhoff's junction rule 1

15. Which concept best explains the following situation? A charge moving parallel to a magnetic field has zero magnetic force.
(A) Kirchhoff's junction rule (B) Coulomb's law (C) Magnetic force (D) Interference 1

16. A 12 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs.
(A) 144 (B) 146 (C) 143 (D) 145 1

Section B - Short responses

17. A resistor of 13 ohms carries 3 A. Calculate power dissipated. 2

18. An object is placed at twice the focal length of a convex lens with f = 21 cm. Calculate the image distance in cm using Cartesian signs. 2

19. Light has frequency 13 x 10^{14} Hz. Use h = 6.6 x 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 = 12/10. Calculate secondary voltage. 2

21. A 13 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. 2

Section C - Short responses

22. A resistor of 14 ohms carries 3 A. Calculate power dissipated. 3

23. An object is placed at twice the focal length of a convex lens with f = 22 cm. Calculate the image distance in cm using Cartesian signs. **3**

24. Light has frequency 14 x 10^{14} Hz. Use h = 6.6 x 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 = 13/10. Calculate secondary voltage. **3**

26. A 14 microfarad capacitor is connected across 12 V. Calculate stored charge in microcoulombs. **3**

27. A resistor of 15 ohms carries 3 A. Calculate power dissipated. **3**

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

Section D - Case and application questions

29. Consider the application below: A diode can be used for rectification under suitable circuit conditions.

(a) Name the relevant concept. **1**

(b) Explain why it applies. **1**

(c) Explain Coulomb's law with a suitable example. **2**

30. Consider the application below: Mass defect corresponds to energy through the mass-energy relation.

(a) Name the relevant concept. **1**

(b) Explain why it applies. **1**

(c) Explain Semiconductor diode with a suitable example. **2**

Section E - Extended responses

31. (a) Analyse Semiconductor diode with reference to this application: A diode can be used for rectification under suitable circuit conditions. **5**
(b) Explain Electric field with a different relevant example. Develop the reasoning behind both parts.

32. (a) Analyse Lenz's law with reference to this application: An induced current resists the change that produced it. **5**
(b) Explain Total internal reflection with a different relevant example. Develop the reasoning behind both parts.

33. (a) Analyse Kirchhoff's junction rule with reference to this application: Total incoming current equals total outgoing current in steady operation. **5**
(b) Explain Electromagnetic induction with a different relevant example. Develop the reasoning behind both parts.

First Hope

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.