

CUET 2026 May 19 Physics Shift 2

Question Paper (Memory-Based)

Conducted by National Testing Agency (NTA)



General Instructions

- (i) The examination will be conducted in Computer-Based Test (CBT) mode.
- (ii) Each question carries +5 marks for correct answer and -1 mark for wrong answer.
- (iii) The total number of questions are 50.
- (iv) Duration of the exam is 1 hour (60 minutes).

1. A balanced Wheatstone bridge consists of four resistances $P = 10\ \Omega$, $Q = 20\ \Omega$, $R = 15\ \Omega$, and S . If the positions of the galvanometer and the battery are interchanged, the balancing condition will remain valid. What is the value of the unknown resistance S under the balanced condition?

- (A) $15\ \Omega$
- (B) $30\ \Omega$
- (C) $45\ \Omega$
- (D) $60\ \Omega$

2. Three point charges $+q$, $+q$, and $-q$ are placed at the vertices of an equilateral triangle of side length L . The net electrostatic potential energy of this system of charges is given by:

- (A) $\frac{1}{4\pi\epsilon_0} \frac{q^2}{L}$
- (B) $-\frac{1}{4\pi\epsilon_0} \frac{q^2}{L}$
- (C) $-\frac{3}{4\pi\epsilon_0} \frac{q^2}{L}$
- (D) 0

3. A particle carrying a positive charge q moves with a velocity vector $\vec{v} = v\hat{i}$ into a uniform magnetic field region specified by $\vec{B} = B\hat{j}$. What is the vector direction of the magnetic Lorentz

force acting on this particle at that instant?

- (A) $+\hat{k}$
 - (B) $-\hat{k}$
 - (C) $+\hat{i}$
 - (D) $-\hat{j}$
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4. A material specimen exhibits a small, negative magnetic susceptibility ($\chi < 0$) at room temperature. When placed inside a non-uniform magnetic field, this specimen experiences a net force pushing it. How will this material behave?

- (A) It will be strongly attracted toward the stronger fields.
 - (B) It will be weakly attracted toward the stronger fields.
 - (C) It will be weakly repelled away from the stronger field regions.
 - (D) Its properties change completely above its Curie temperature.
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5. A straight metallic rod of length L is oriented horizontally and dropped vertically downward with a speed v perpendicular to the horizontal component of the Earth's uniform magnetic field B_H . The instantaneous motional electromotive force (EMF) induced across the two ends of this rod is:

- (A) $\frac{1}{2}B_H v L^2$
 - (B) $B_H v L$
 - (C) $\frac{B_H v}{L}$
 - (D) 0
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6. In a series LCR circuit connected to an AC source of variable frequency, the values are given as $L = 2\text{ H}$, $C = 32\ \mu\text{F}$, and $R = 10\ \Omega$. What is the resonant angular frequency ω_r of this circuit system?

- (A) 125 rad/s
 - (B) 250 rad/s
 - (C) 500 rad/s
 - (D) 1000 rad/s
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7. Which of the following choices correctly sequences the designated segments of the electromagnetic wave spectrum in an increasing order of their respective photon energies?

- (A) Radio waves < Microwaves < Infrared < X-rays
 - (B) X-rays < Infrared < Microwaves < Radio waves
 - (C) Microwaves < Radio waves < Infrared < X-rays
 - (D) Radio waves < X-rays < Infrared < Microwaves
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8. An object is placed at a distance of 20 cm in front of a concave mirror of focal length 15 cm. What is the nature and magnification (m) of the image produced by the mirror?

- (A) Virtual, Erect and $m = +3$
 - (B) Real, Inverted and $m = -3$
 - (C) Real, Inverted and $m = -0.75$
 - (D) Virtual, Erect and $m = +0.75$
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9. What is the ratio of the shortest wavelength present in the Lyman series of hydrogen spectral emissions to the shortest wavelength present in the Balmer series?

- (A) 1 : 4
 - (B) 4 : 1
 - (C) 1 : 2
 - (D) 2 : 1
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10. When an external operating bias voltage is applied to a standard P-N junction semiconductor diode under a forward bias configuration, how do the width of the internal depletion region and the height of the contact barrier potential change?

- (A) The depletion width increases and the barrier height increases.
 - (B) The depletion width decreases and the barrier height decreases.
 - (C) The depletion width increases and the barrier height decreases.
 - (D) The depletion width decreases and the barrier height increases.
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