

CUET 2026 May 20 Shift 1 Physics

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. The electric and magnetic field vectors of a plane electromagnetic wave propagating along the positive x-axis are represented by $\vec{E}$ and $\vec{B}$ respectively. Which of the following vector expressions correctly defines the direction of propagation of this wave?

- (A) $\vec{B} \times \vec{E}$
- (B) $\vec{E} \times \vec{B}$
- (C) $\vec{E} \cdot \vec{B}$
- (D) $\vec{E} + \vec{B}$

2. In a Young's Double Slit Experiment (YDSE), the separation between the two coherent slits is halved, and the perpendicular distance between the plane of the slits and the viewing screen is doubled. If the initial fringe width was β , what will the new modified fringe width β' be?

- (A) β
- (B) 2β
- (C) 4β
- (D) $\frac{\beta}{4}$

3. A galvanometer has a resistance of 50Ω and gives a full-scale deflection for a current of 2 mA. To convert this galvanometer into an ammeter capable of measuring currents up to 2 A,

what is the value of the shunt resistance that must be connected in parallel with it?

- (A) $0.05\ \Omega$
 - (B) $0.50\ \Omega$
 - (C) $0.02\ \Omega$
 - (D) $5.00\ \Omega$
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4. In a moving coil galvanometer, the pole pieces of the permanent magnet are systematically sculpted into a cylindrical shape to create a radial magnetic field. What is the primary operational purpose of applying this radial field configuration?

- (A) To minimize the net magnetic flux passing through the coil.
 - (B) To ensure the magnetic deflecting torque remains constant and independent of the coil's rotation angle.
 - (C) To increase the overall internal electrical resistance of the galvanometer suspension.
 - (D) To completely eliminate electromagnetic damping effects.
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5. According to Kirchhoff's Loop Rule (Second Law) applied across a closed network mesh, the algebraic sum of all potential variations around any closed loop must equal zero. This fundamental circuit law is a direct consequence of which physical conservation principle?

- (A) Conservation of Linear Momentum
 - (B) Conservation of Electric Charge
 - (C) Conservation of Mass
 - (D) Conservation of Energy
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6. An alternating current source driving a circuit is represented by the voltage equation $V = 220\sqrt{2}\sin(100\pi t)$. What are the Root Mean Square (RMS) voltage value V_{rms} and the alternating frequency f of this source supply?

- (A) 220 V and 50 Hz
 - (B) $220\sqrt{2}$ V and 100 Hz
 - (C) 110 V and 50 Hz
 - (D) 220 V and 100π Hz
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7. A parallel-plate air capacitor has an initial capacitance value of $8\ \mu\text{F}$. If the space between the plates is completely filled with a solid dielectric slab having a dielectric constant $K = 5$,

what will the new capacitance value of the component be?

- (A) $1.6\ \mu\text{F}$
 - (B) $40\ \mu\text{F}$
 - (C) $20\ \mu\text{F}$
 - (D) $80\ \mu\text{F}$
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8. Two long, straight parallel wires separated by a distance r carry steady currents I_1 and I_2 in the exact same direction. What type of magnetic force interaction do they experience?

- (A) A repulsive force driving them apart.
 - (B) Zero force interaction because the lines run parallel.
 - (C) An attractive force pulling them together.
 - (D) A rotational torque twisting them perpendicular to each other.
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9. Which segment of the electromagnetic wave spectrum is primarily used in line-of-sight radar systems for aircraft navigation and to cook food inside kitchen appliances?

- (A) Infrared Waves
 - (B) Microwaves
 - (C) Ultraviolet Rays
 - (D) Radio Waves
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10. A straight wire loop carrying a current I sits flat inside a uniform, external magnetic field $\vec{B}$. Under what orientation angle θ between the normal vector of the loop surface and the magnetic field lines will the loop experience maximum torque?

- (A) $\theta = 0^\circ$
 - (B) $\theta = 45^\circ$
 - (C) $\theta = 90^\circ$
 - (D) $\theta = 180^\circ$
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