CUET 2026 May 25 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. A circular plane sheet of radius 10 cm is placed in a uniform electric field of 5×10^5 N C^{-1}, making an angle of 60° with the field. The electric flux through the sheet is:

(A) 1.36×10^2 N m^2C^{-1}

(B) 1.36×10^4 N m^2C^{-1}

(C) 0.515×10^2 N m^2C^{-1}

(D) 0.515×10^4 N m^2C^{-1}

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2. Two parallel infinite line charges $+\lambda$ and $-\lambda$ are placed with a separation distance R in free space. The net electric field exactly mid-way between the two charges is:

(A) zero

(B) $\frac{2\lambda}{\pi\varepsilon_0 R}$

(C) $\frac{\lambda}{\pi\varepsilon_0 R}$

(D) $\frac{\lambda}{2\pi\varepsilon_0 R}$

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3. An electric dipole of moment $\vec{p}$ is placed in a uniform electric field $\vec{E}$. Then

(i) the torque on the dipole is $\vec{p} \times \vec{E}$.

(ii) the potential energy of the system is $\vec{p} \cdot \vec{E}$.

(iii) the resultant force on the dipole is zero.

Choose the correct option.

(A) (i), (ii) and (iii) are correct

(B) (i) and (iii) are correct and (ii) is wrong

(C) Only (i) is correct

(D) (i) and (ii) are correct and (iii) is wrong

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4. A parallel plate capacitor having area A and separated by distance d is filled by a copper plate of thickness b. The new capacity is:

(A) $\frac{\varepsilon_0 A}{d + \frac{b}{2}}$

(B) $\frac{\varepsilon_0 A}{2d}$

(C) $\frac{\varepsilon_0 A}{d - b}$

(D) $\frac{2\varepsilon_0 A}{d + \frac{b}{2}}$

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5. A parallel plate capacitor of capacitance $5\ \mu F$ and plate separation 6 cm is connected to a 1 V battery and charged. A dielectric of dielectric constant 4 and thickness 4 cm is introduced between the plates of the capacitor. The additional charge that flows into the capacitor from the battery is:

(A) $2\ \mu C$

(B) $3\ \mu C$

(C) $5\ \mu C$

(D) $10\ \mu C$

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6. A slab of material of dielectric constant K has the same area A as the plates of a parallel plate capacitor, and has thickness $\left(\frac{3}{4}d\right)$, where d is the separation of the plates. The capacitance when the slab is inserted between the plates is:

(A) $\frac{\varepsilon_0 A}{d}\left(\frac{K+3}{4K}\right)$

(B) $\frac{\varepsilon_0 A}{d}\left(\frac{2K}{K+3}\right)$

(C) $\frac{\varepsilon_0 A}{d}\left(\frac{K}{K+3}\right)$

(D) $\frac{\varepsilon_0 A}{d}\left(\frac{4K}{K+3}\right)$

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7. A wire has a resistance of $2.5\ \Omega$ at $28^\circ C$ and a resistance of $2.9\ \Omega$ at $100^\circ C$. The temperature coefficient of resistivity of the material of the wire is:

(A) $1.06 \times 10^{-3}\ ^\circ C^{-1}$

(B) $3.5 \times 10^{-2}\ ^\circ C^{-1}$

(C) $2.22 \times 10^{-3}\ ^\circ C^{-1}$

(D) $3.95 \times 10^{-2}\ ^\circ C^{-1}$

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8. Choose the correct combination of three resistances $1\ \Omega$, $2\ \Omega$ and $3\ \Omega$ to get equivalent resistance $\frac{11}{5}\ \Omega$.

(A) All three are combined in parallel

(B) All three are combined in series

(C) $1\ \Omega$ and $2\ \Omega$ are in parallel and $3\ \Omega$ is in series with both

(D) $2\ \Omega$ and $3\ \Omega$ are combined in parallel and $1\ \Omega$ is in series with both

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9. A battery of emf 15 V and internal resistance of $4\ \Omega$ is connected to a resistor. If the current in the circuit is 2 A, the resistance of the resistor and terminal voltage of the battery will be:

(A) $2.5\ \Omega,\ 6$ V

(B) $3.5\ \Omega,\ 6$ V

(C) $2.5\ \Omega,\ 7$ V

(D) $3.5\ \Omega,\ 7$ V

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10. Two cells ε_1 and ε_2 are connected in opposition to each other as shown in the figure. The cell ε_1 is of emf 9 V and internal resistance $3\ \Omega$. The cell ε_2 is of emf 7 V and internal resistance $7\ \Omega$. The potential difference between the points A and B is:

(A) 8.4 V

(B) 5.6 V

(C) 7.8 V

(D) 6.6 V

