

Roll No. 24488 to be filled in by the candidate.

(For all sessions)

Paper Code	8	4	7	1
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Physics (Objective Type)**RWP-21**

Time: 20 Minutes

Marks: 17

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A, B, C & D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or pen ink on the answer sheet provided.

- Unit of electric flux is:
 (A) Nm^2C^{-2} (B) Nm^2C^{-1} (C) $\text{N}^{-1}\text{m}^2\text{C}^{-1}$ (D) Nm^{-2}C
- The statement $\Phi_e = \frac{1}{\epsilon_c} Q$ was given by:
 (A) Faraday (B) Dersted (C) Gauss (D) Coulomb
- Reciprocal of resistance is:
 (A) Capacitance (B) Conductance (C) Inductance (D) Resistance
- Lorentz force is given by:
 (A) $\vec{F} = I(\vec{L} \times \vec{B})$ (B) $\vec{F} = q(\vec{V} \times \vec{B})$ (C) $\vec{F} = q\vec{E} + q(\vec{V} \times \vec{B})$ (D) $\vec{F} = q\vec{E}$
- A power line 10m high carries a current 200A. The magnetic field of the wire at the ground is:
 (A) $4 \times 10^{-6}\text{T}$ (B) $40 \times 10^{-6}\text{T}$ (C) $4 \times 10^{-4}\text{T}$ (D) $4 \times 10^{-3}\text{T}$
- Relation for energy density in case of an inductor is:
 (A) $\frac{B^2}{2\mu_0}$ (B) $\frac{\mu_0}{2B^2}$ (C) $\frac{B}{2\mu_0}$ (D) $\frac{B}{2\mu_0^2}$
- The Lenz's law is also a statement of:
 (A) Law of conservation of momentum (B) Law of conservation of charge
 (C) Law of conservation of energy (D) Faraday's law
- Peak to Peak value of an alternating voltage is:
 (A) $2V_0$ (B) 0 (C) $\frac{V_0}{\sqrt{2}}$ (D) V_0
- In RLC series resonance circuit, the condition for resonance is:
 (A) $X_L = X_C$ (B) $X_L < X_C$ (C) $X_L > X_C$ (D) $X_L > Z$
- Young's modulus of lead is:
 (A) $1.5 \times 10^{19}\text{Nm}^{-2}$ (B) $7.7 \times 10^9\text{Nm}^{-2}$ (C) $5.6 \times 10^9\text{Nm}^{-2}$ (D) $2.2 \times 10^9\text{Nm}^{-2}$
- Number of diodes used in half wave rectifier is:
 (A) 4 (B) 3 (C) 2 (D) 1
- S.I unit of current gain of transistor is:
 (A) Coulomb (B) Ampere (C) Farad (D) No unit
- When platinum wire is heated, it appears cherry red at:
 (A) 1300°C (B) 1100°C (C) 900°C (D) 500°C
- The value of Wein's constant is:
 (A) $2.9 \times 10^3\text{mK}$ (B) $2.9 \times 10^{-3}\text{mK}$ (C) 2.9mK (D) $2.9 \times 10^{-2}\text{mK}$
- In Helium-Neon laser, the value of Helium is:
 (A) 85% (B) 75% (C) 65% (D) 60%
- Half life of Uranium-238 is:
 (A) 4.5×10^{12} years (B) 4.5×10^{11} years (C) 4.5×10^{10} years (D) 4.5×10^9 years
- The dead time of the counter is:
 (A) $\sim 10^{-7}\text{s}$ (B) $\sim 10^{-6}\text{s}$ (C) $\sim 10^{-5}\text{s}$ (D) $\sim 10^{-4}\text{s}$

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