

VNR12P


Virudhunagar District  
First Revision Exam, January - 2025

**Standard 12**  
**PHYSICS**  
**Part - I**

Marks: 70

Time: 3.00 Hrs.

**15×1=15****Answer all the questions:**

- If voltage applied on a capacitor is increased from  $V$  to  $2V$ , choose the correct conclusion
  - 'Q' remains the same, 'C' is doubled
  - 'Q' is doubled, 'C' is doubled
  - 'C' remains same, 'Q' is doubled
  - Both 'Q' and 'C' remain same
- An electric field in a region is given by  $(6\hat{i} + 5\hat{j} + 3\hat{k}) \text{ N/C}$ . The electric flux through a surface area  $30\hat{i} \text{ m}^2$  lying in the y-z plane is
  - $100 \text{ Nm}^2\text{C}^{-1}$
  - $180 \text{ Nm}^2\text{C}^{-1}$
  - $90 \text{ Nm}^2\text{C}^{-1}$
  - $60 \text{ Nm}^2\text{C}^{-1}$
- A toaster operating at  $240 \text{ V}$  has a resistance of  $120 \Omega$ . Its power is
  - $400 \text{ w}$
  - $2 \text{ w}$
  - $480 \text{ w}$
  - $240 \text{ w}$
- A carbon resistor of  $(47 \pm 4.7) \text{ K}\Omega$  to be marked with rings of different colours for its identification. The colour code sequence will be
  - yellow-green-violet-gold
  - yellow-violet-orange-silver
  - violet-yellow-orange-silver
  - green-orange-violet-gold
- In the circuit given below, the ideal ammeter reads  $0.9 \text{ A}$ . The value of 'R' is 
  - $20\Omega$
  - $10\Omega$
  - $5\Omega$
  - $15\Omega$
- A circular coil of radius  $5 \text{ cm}$  and  $50$  turns carries a current of  $3 \text{ ampere}$ . The magnetic dipole moment of the coil is nearly
  - $1 \text{ Am}^2$
  - $1.2 \text{ Am}^2$
  - $0.5 \text{ Am}^2$
  - $0.8 \text{ Am}^2$
- If a charged particle moves in a region of uniform magnetic field such that its velocity is not perpendicular to the magnetic field, the path of the charged particle inside the field is
  - circular
  - straight line
  - elliptical
  - helical
- In a transformer, the number of turns in the primary and the secondary are  $410$  and  $1230$  respectively. If the current in primary is  $6 \text{ A}$ , then the current in the secondary coil is
  - $2 \text{ A}$
  - $18 \text{ A}$
  - $12 \text{ A}$
  - $1 \text{ A}$
- In an oscillating LC circuit the maximum charge on the capacitor is 'Q'. The charge on the capacitor when the energy is stored equally between the electric and magnetic fields is
  - $\frac{Q}{2}$
  - $\frac{Q}{\sqrt{3}}$
  - $\frac{Q}{\sqrt{2}}$
  - $Q$
- In a coil, current changes from  $-2 \text{ A}$  to  $+2 \text{ A}$  in  $0.2 \text{ s}$  and induces an emf of  $0.1 \text{ V}$ . The self-inductance of the coil is
  - $5 \text{ mH}$
  - $1 \text{ mH}$
  - $2.5 \text{ mH}$
  - $0.1 \text{ mH}$
- Fraunhofer lines are an example of \_\_\_\_\_
  - line emission spectrum
  - line absorption spectrum
  - band emission spectrum
  - band absorption spectrum
- Which of the following electromagnetic radiations is used for viewing objects through fog
  - microwave
  - gamma rays
  - x-rays
  - infrared
- The source of time varying magnetic field may be
  - a permanent magnet
  - an electric field changing linearly with time
  - a decelerating charged particle
  - direct current



