

MOCK TEST PAPER # 1

HINTS & SOLUTION

PHYSICS (CLASS-XII)

1. Since, $\vec{F} = q(\vec{v} \times \vec{B})$
 \therefore Force is perpendicular to both \vec{v} and \vec{B} .
 2. $I_{rms} = \frac{I_0}{\sqrt{2}} = 3.54 \text{ A}$
 3. $\mu = \tan i_p = \tan 60^\circ = \sqrt{3}$
 5. Nuclear density is independent of mass number.
 \therefore Ratio will be 1:1
 7. (i) $\lambda = 6.7 \times 10^{-3} \text{ m}$
 (ii) $E_z = 2400 \sin(2 \times 10^{11}t + 300 \pi x) \text{ V m}^{-1}$
 15. (iii) ${}_{72}^{180}\text{D}$
 16. (i) $V = 5 \text{ V}$
 (ii) $U_i = 4.5 \times 10^{-3} \text{ J}; U_f = 0.75 \times 10^{-3} \text{ J}$
- Hence energy is lost in the form of heat.
18. (i) As $\lambda \propto \frac{1}{\sqrt{qm}} \Rightarrow \lambda_e > \lambda_p$
 (ii) As $p \propto \sqrt{qm} \Rightarrow p_e > p_p$
 20. A convex lens of focal length $f = 20 \text{ cm}$

OR

 Objects $|u| = 15 \text{ cm}$
 Image distance $|v| = 60 \text{ cm}$
 21. (ii) $m = 10$
 22. $\frac{e'}{e} = 3.64$
 23. Thickness $t = 3.375 \times 10^{-7} \text{ m}$

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