

## MOCK TEST PAPER # 5

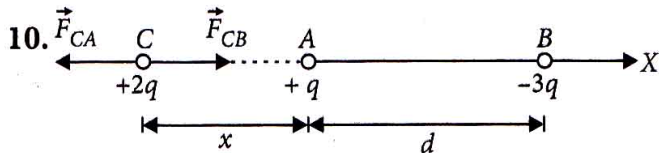
### SOLUTION

#### PHYSICS (CLASS-XII)

7.  $v = + 40 \text{ cm}$

8. Magnetic field at the centre of circular electron orbit of radius  $r$ ,

$$B = \frac{\mu_0 c \omega}{4\pi r}$$



$$x = \frac{d}{2}(1 + \sqrt{3})$$

10. (OR)  $W = 2.3 \times 10^6 \text{ J}$

13.  $i = \sin^{-1}(0.4962) = 29.75^\circ$

14. (a)  $\Phi_B > \Phi_A$

(b) For material A,  $h = 6.4 \times 10^{-34} \text{ J s}$

For material B,  $h = 8.0 \times 10^{-34} \text{ J s}$

The experiment is not consistent with the Einstein's theory.

15. (a) Parallel plate capacitor

(b) 1 : 4

- (c) By inserting a dielectric of dielectric constant  $n$  between the plates of the capacitor.

16.  $B_{net} = 0.25 \text{ G}$

18.  $R = R_0 e^{-\frac{0.693t}{T^{1/2}}}$

19. Pitch of the helix is  $p = 4.35 \text{ cm}$

20. (a) Percentage modulation = 66.67%

(b)  $V_C = 30 \text{ V}$

(c)  $V_m = 20 \text{ V}$

21.  $r = \frac{n^2 h^2}{4\pi^2 m k Z e^2}$

27. (OR) (b)  $\lambda = 6000 \text{ \AA}$

