(2) : Given, $v = 2 \times 10^5$ m/s, $r = 2$ cm, $E = x \times 10^4$ N/C

$m = 1.6 \times 10^{-27}$ kg

$v = E/B$

$E = Bv$ ...(i)

Now when magnetic field is there,

$$\frac{mv^2}{r} = qvB$$

$$B = \frac{mv}{qr}$$ ...(ii)

$$E = \frac{mv^2}{qr} \quad \text{(From eqn. (i) and (ii))}$$

$$E = \frac{1.6 \times 10^{-27} \times 4 \times 10^{10}}{1.6 \times 10^{-19} \times 2 \times 10^{-2}}$$

$E = 2 \times 10^4$ N/C

So, $x = 2$