

P #J

Ch 19

$$q = +1.6 \times 10^{-19} \text{ C}$$

$$m = 1.67 \times 10^{-27} \text{ kg}$$

$$r = 1.0 \text{ km} = 1000 \text{ m}$$

$$v = 3.14 \times 10^7 \text{ m/s}$$

$$B = ?$$

$$F_c = F_B$$

$$\frac{m \cdot v^2}{r} = q \cdot v \cdot B$$

$$\frac{(1.67 \times 10^{-27} \text{ kg})(3.14 \times 10^7 \text{ m/s})}{(1000 \text{ m})} = (1.6 \times 10^{-19} \text{ C}) \cdot B$$

$$B = 3.3 \times 10^{-4} \text{ T}$$