

2. The current i due to the electron flow is $i = ne = (5.6 \times 10^{14}/\text{s})(1.6 \times 10^{-19} \text{ C}) = 9.0 \times 10^{-5} \text{ A}$. Thus,

$$B = \frac{\mu_0 i}{2\pi r} = \frac{(4\pi \times 10^{-7})(9.0 \times 10^{-5})}{2\pi(1.5 \times 10^{-3})} = 1.2 \times 10^{-8} \text{ T} .$$