



a.) 
$$J = \frac{I}{A} = \frac{I}{\pi \left(\frac{d}{2}\right)^2} = \underline{1.732 \times 10^7 \frac{\text{A}}{\text{m}^2}}$$

b.) Electron current, 
$$i = \frac{I}{e} = \underline{5.312 \times 10^{18} \text{ s}^{-1}}$$