

18. The magnitude of the force is

$$F = k \frac{e^2}{r^2} = \left(8.99 \times 10^9 \frac{\text{N} \cdot \text{m}^2}{\text{C}^2} \right) \frac{(1.60 \times 10^{-19} \text{ C})^2}{(2.82 \times 10^{-10} \text{ m})^2} = 2.89 \times 10^{-9} \text{ N} .$$