36. (a) We use Eq. 25-43 with $q_1 = q_2 = -e$ and $r = 2.00\,\text{nm}$:

$$U = k\frac{q_1 q_2}{r} = k\frac{e^2}{r} = \frac{\left(8.99 \times 10^9\ \frac{\text{N}\cdot\text{m}^2}{\text{C}^2}\right)(1.60 \times 10^{-19}\,\text{C})^2}{2.00 \times 10^{-9}\,\text{m}} = 1.15 \times 10^{-19}\ \text{J}\ .$$

(b) Since $U > 0$ and $U \propto r^{-1}$ the potential energy U decreases as r increases.