

22. Let  $\mathcal{V} = 1.00 \text{ m}^3$ . Using Eq. 26-23, the energy stored is

$$\begin{aligned} U &= u\mathcal{V} = \frac{1}{2}\varepsilon_0 E^2 \mathcal{V} \\ &= \frac{1}{2} \left( 8.85 \times 10^{-12} \frac{\text{C}^2}{\text{N} \cdot \text{m}^2} \right) (150 \text{ V/m})^2 (1.00 \text{ m}^3) \\ &= 9.96 \times 10^{-8} \text{ J} . \end{aligned}$$