

48. (a) Eq. 26-22 yields

$$U = \frac{1}{2}CV^2 = \frac{1}{2} (200 \times 10^{-12} \text{ F}) (7.0 \times 10^3 \text{ V})^2 = 4.9 \times 10^{-3} \text{ J} .$$

(b) Our result from part (a) is much less than the required 150 mJ, so such a spark should not have set off an explosion.