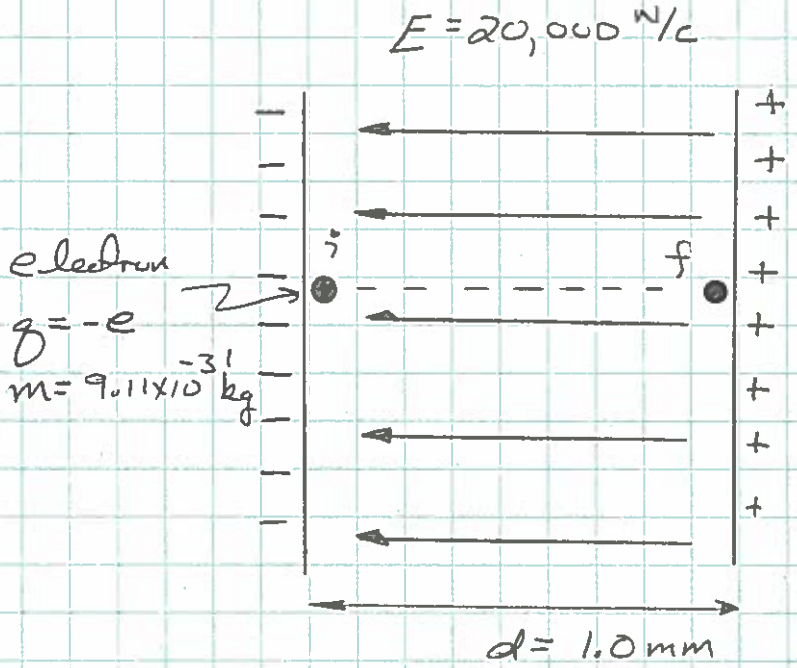

Conserve energy:

$$\Delta E_{mech} = \Delta K + \Delta U = 0$$

$$\frac{1}{2} m (v_f^2 - v_i^2) + (U_f - U_i) = 0$$

where $U_f = qEs = -eEd$

$$\frac{1}{2} m v_f^2 - eEd = 0$$

$$\therefore v_f = \sqrt{\frac{2eEd}{m}} = 2.65 \times 10^6 \text{ m/s}$$