C.E.   J.L.

11.

$V_A = 500 V$ $|\vec{E}| = 200 N/c$ =)

(a)

$V_A = k \dfrac{q}{r_A} = 500 V$ $|\vec{E}| = k \dfrac{q}{r_A^2} = 200 N/c$

AISLEM q ⇓

$\boxed{q = \dfrac{500 \cdot r_A}{k}}$ ↗ SUBJITUIM

$|\vec{E}| = k \cdot \dfrac{\frac{500 \cdot r_A}{k}}{r_A^2} = \cancel{k} \cdot \dfrac{500 \cdot r_A}{\cancel{k} \cdot r_A^2} = 200$

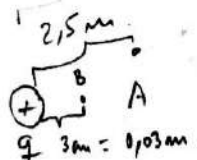$500 = 200 \, r_A \quad =1 \quad \boxed{r_A = \dfrac{500}{200} = \dfrac{5}{2} \; m}$

⑤

$\boxed{\left[q = \dfrac{500 \cdot \frac{5}{2}}{9 \cdot 10^9} = \dfrac{250 \cdot 5}{9 \cdot 10^9} = 1,4 \; 10^{-7} C \right.}$

(c) $V_A = 500 \; V.$

$V_B = k \dfrac{q}{r}$

$V_B = \overset{3}{9 \cdot 10^9} \cdot \dfrac{1,4 \cdot 10^{-7}}{\cancel{3} \cdot 10^{-2}} = 4,2 \cdot 10^4 V.$

$\boxed{W = q \cdot (V_B - V_A) = 500 \cdot 10^{-3} (4,2 \cdot 10^4 - 500) = 20750 \; J}$