

Answer on question #55882, Physics / Electromagnetism

Question 2 A uniform electric field of 200 N/C is in the x-direction. A point charge of $3\mu\text{C}$ is released from rest at the origin. What is the kinetic energy of the charge when it is at $x = 4$ m?

$2.4 \cdot 10^{-2} \text{J}$

$1.6 \cdot 10^{-2} \text{J}$

$3.6 \cdot 10^{-2} \text{J}$

$4.8 \cdot 10^{-2} \text{J}$

Solution Kinetic energy will be equal to change of the potential one:

$$E = E_2 - E_1 = Eq(x_2 - x_1) = 200 \cdot 3 \cdot 10^{-6}(4 - 0) = 2.4 \cdot 10^{-2} \text{ J}$$