

SESSION V

Potential Energy Change $\Delta U = \frac{qq_0}{4\pi\epsilon_0} \left(\frac{1}{r_b} - \frac{1}{r_a} \right)$

Potential energy $U = \frac{qq_0}{4\pi\epsilon_0} \frac{1}{r}$

Potential $V = \frac{q}{4\pi\epsilon_0} \frac{1}{r}$ This means $U = q_0V$

Electric Field $E_x = -\frac{\partial V}{\partial x}$

Potential of Charged disk of radius R $V = \frac{Q}{4\pi\epsilon_0} \frac{1}{R^2} (\sqrt{R^2 + x^2} - x)$

Potential of Charged line $V = \frac{-\lambda}{4\pi\epsilon_0} \ln \frac{R}{a}$

Shell $V = \text{const inside and } V = \frac{Q}{4\pi\epsilon_0} \frac{1}{R}$ outside

Two shells connected $s_1 R_1 = s_2 R_2$