UNIVERSIDAD DE SAN CARLOS
FACULTAD DE INGENIERÍA
DEPARTAMENTO DE FÍSICIA
CURSO DE VACACIONES JUNIO 22

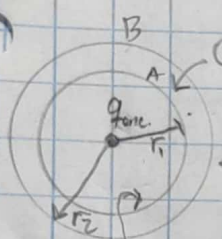
Firma:

Carné: 20170988 Curso: Física 2 Sección: P

Nombre: Leonel Antonio González García.

Puede iniciar su examen a partir de aquí

Problema 1.



$\Phi_E = 6.0 * 10^5 \ Nm^2/C$

$\Phi_E = \frac{q_{enc}}{\varepsilon_0}$

$q_{superficie\ exterior} =$

$q_{superficie\ interna} = -1.77084 * 10^{-6}$

$r = 0$

$\Phi = 2 * 10^5 \ Nm^2/C$

$q_{enc} = (2*10^5)(8.8542*10^{-12})$

$q_{enc} = 1.77084 * 10^{-6} \ C$

$\Phi_{Total} = 6 * 10^5 \ Nm^2/C$

$\Phi = E \cdot A \cos(180^\circ)$

$\frac{\Phi}{A} = -E$

$r = 9$

$-E = \frac{6*10^5 \ Nm^2/C}{4\pi r^2} = \frac{6*10^5}{4\pi(9)^2} = -589.4627$

$\sigma = \varepsilon \varepsilon_0$

$\sigma = (589.4627)(8.8542*10^{-12})$

$\sigma = -5.2193 * 10^{-9}$

$Q = (-5.2193*10^{-9})(4\pi 9^2)$

$Q = -5.3127 * 10^{-6}$

$q_{sup} = -5.3127*10^{-6} - (-1.77084*10^{-6}) = -3.5418 * 10^{-6}$

Problema 2:

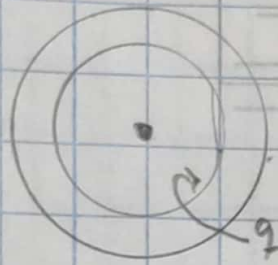
$\lambda = 0.14\ \mu C/m$

$m_e = 9.1094 \times 10^{-31}\ kg$

$q_{e^-} = -1.6022 \times 10^{-19}\ C$

$q_{Pro} = 1.6022 \times 10^{-19}\ C$

Problema 3:



$r = 0.01m$

$E = 15 \times 10^7$

$q_{int} = -1.6688 \times 10^{-6}$

$\sigma = E \varepsilon_0$

$\sigma = (1.5 \times 10^7)(8.8542 \times 10^{-12})$

$\sigma = 1.3281 \times 10^{-3}$

$q_{enc} = \sigma A$

$q_{enc} = (1.3281 \times 10^{-3})(4\pi(0.01)^2)$

$q_{enc} = 1.6688 \times 10^{-6}\ C$

Problema 4:

$P = 6.2 \times 10^{-30}\ Cm$