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COURSE: PHT 102

DEPARTMENT: 10203

MATRIC NUMBER: 19/MHS02/140

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ANSWERS TO COVID-19 ASSIGNMENT

2a

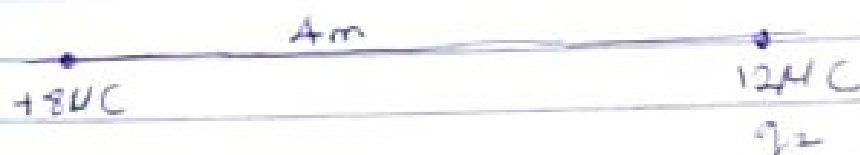
Electric field

It is a region of space in which an electric charge will experience an electric force.

Electric Field Intensity

This is the force per unit charge experienced by an electric field

b i)



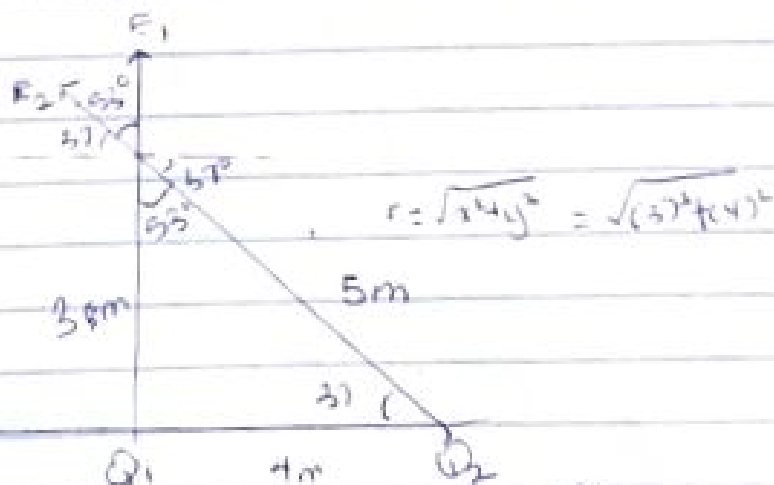
$$E_1 = \frac{kQ_1}{r^2} = \frac{(9 \times 10^9)(8 \times 10^{-9})}{7^2} = \frac{72 \times 10^0}{49} = 1.47 \times 10^0$$

$$E_1 = 1.47 \text{ N/C}$$

$$E_2 = \frac{kQ_2}{r^2} = \frac{(9 \times 10^9)(2 \times 10^{-9})}{9} = \frac{108}{9} = 12 \text{ N/C}$$

$$E_{\text{net}} = 1.47 + 12 = 13.47 \text{ N/C}$$

b ii)



$$E_1 = \frac{kQ_1}{r^2} = \frac{9 \times 10^9 (8 \times 10^{-9})}{3^2} = 8 \text{ N/C}$$