

1. ELECTROSTATICS

Define electric flux.

Electric flux over any surface area is defined as the total number of electric field lines passing normal to the surface.

Let \vec{E} be the electric field link to a surface of area vector \vec{A} , then the flux link to it.

Electric Flux is denoted by Φ and It is ~~so~~ scalar quantity.

$$\Phi = \vec{E} \cdot \vec{A}$$

or

$$\Phi = EA \cos \theta$$

Define electric dipole moment of an electric dipole.

It measures the strength of an electric field.

It is defined as the product of magnitude of either charge and the small separation between two opposite charges.

Electric dipole moment is denoted by \vec{P} and

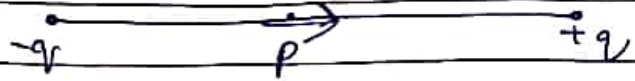
Define electrostatic potential.

The amount of work done to bring a unit positive charge from infinity upto of point inside the field is called ~~pot~~ electrostatic potential. It is denoted by V and it is scalar quantity.

$$1 \cdot \text{N} = \text{W}$$

$P = \text{magnitude of any one charge} \times \text{dipole length}$
 $= q \times 2l$

$$P = 2lq$$



In vector form,

$$\vec{P} = q(2\vec{l})$$

3. Define the dielectric constant of a medium.

Ans:- Dielectric constant of a medium is equal to the ratio between the electrostatic force in air medium and the electrostatic force of the medium.

$$\epsilon_r = \frac{\epsilon}{\epsilon_0}$$

4. Define quantization of electric charge.

Ans:- Quantization of charge. electric charge is the property by virtue of all the free charges are integral multiple of basic unit of charge.

$$Q = \pm ne$$

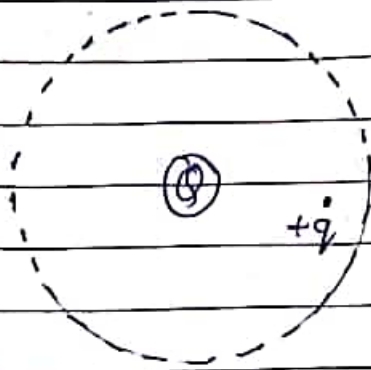
where,

$n = \text{number of electrons} \in \mathbb{I}$ (belongs to integer)
 $e = \text{basic unit of charge } (1.6 \times 10^{-19} \text{C})$

5. Define following terms :

(i) Electric field :->

The space surrounded by a charge body around which an another charge can experienced an electrostatic force is called electric field.



where,

Q - source charge.
 q - Test charge.
 $q \ll Q$

(ii) Electric field intensity :->

The electrostatic force per unit charge is called electric field intensity. It is denoted by E .

$$E = \frac{F}{q}$$

It is a vector quantity and its direction is along the direction of force.

9. Define an equipotential surface.

Ans:- Any surface over which potential value is same at chosen point such surface is