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CHAPTER - 1

ELECTRIC CHARGES AND FIELDS :→

LECTURE - 1 :→

Electrostatics → Branch of physics which deals with electric effect of static charge called electrostatics.

Electric charge → Property aquired by the particles due to which it produces and experiances electrical and magnetic effects.

PROPERTIES of CHARGE

⇒ Scalar

⇒ Two types → Positive and negative.

⇒

Additivity of charge :→

if $Q1 = 10C$, $Q_2 = 2C$, $Q_3 = 5C$ and $Q_4 = 4C$

then $Q1 + Q_2 + Q_3 + Q_4 = 21C$

Charge Quantization →

$$q = \pm ne$$

⇒ electrons and proton are fundamental unit of charge. anything in this world, which have some charge cannot be smaller than $\pm 1.6 \times 10^{-19} C$

CHARGE CONSERVATION

⇒ charge can neither be created and nor be distroyed, but it can change it's magnitude.

METHODS OF CHARGING :→

1) BY FRICTION → we can charge anything with rubbing. By using this method transfer of electrons takes place.

2) BY CONDUCTION :→ In the process of charging by conduction, direct contact of charged and uncharged body is involved and both objects aquire the same kind of charge. If a negative object is used to charge a neutral object, then both objects became charged

become charged negatively and Vice Versa.