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“What one man calls God, another calls the laws of physics.”

-Nikola Tesla

TOPIC 15: STATIC ELECTRICITY

THE ABOUT

CHAPTER ANALYSIS



TIME

- A very simple chapter



EXAM

- Tested in conjunction with other electricity topics
- Practice drawing different electric field lines patterns

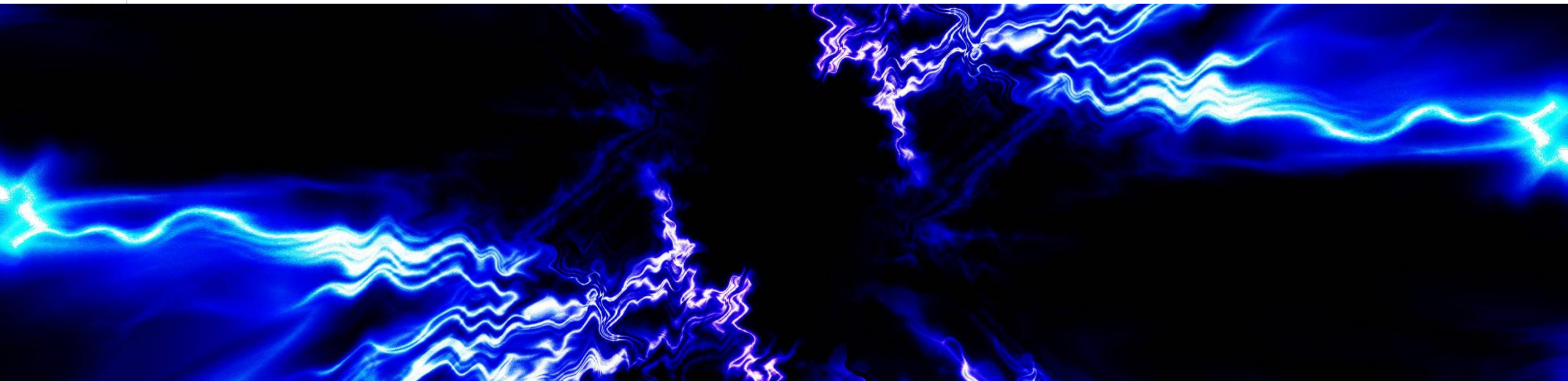


WEIGHTAGE

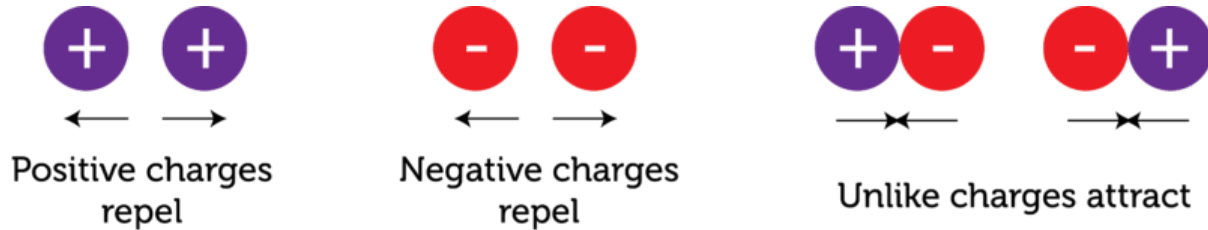
- Light-medium overall weightage
- Constitute to around **2%** of marks for past 5 year papers

KEY CONCEPT

ELECTRIC CHARGE **ELECTRIC FIELD** **ELECTRIC FIELD LINES**



HOW CHARGES BEHAVE



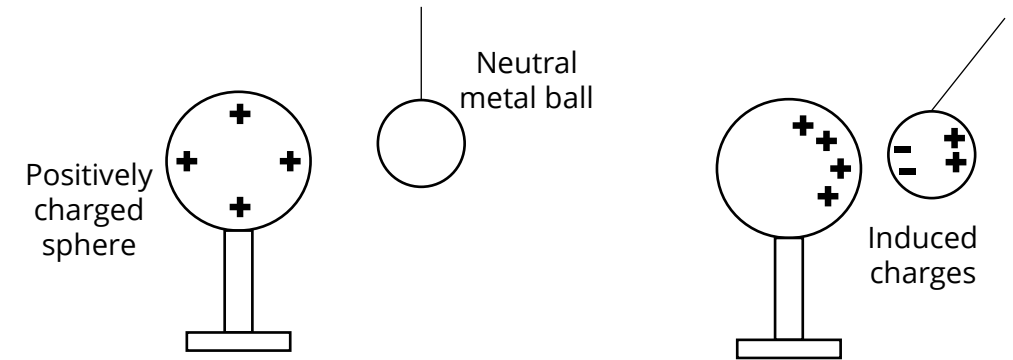
LAW OF ELECTROSTATICS

Unlike charges attract and like charges repel.

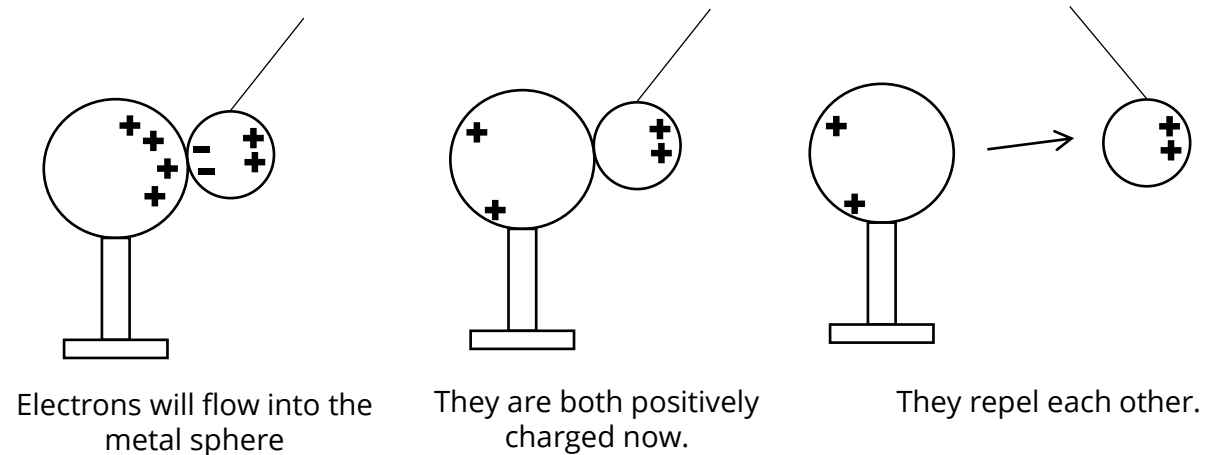
SI unit for charge is **coulomb (C)**.

A neutral body has equal amount of positive and negative charge.

When a **neutral object is brought close to a charged object, attraction occurs. (Induced charges)**



If the **neutral object touches the charged object, electrons will flow to the positive charged object** and cause **both objects to be positively charged**. They then **repel each other**.



*Please note that this can only occur for conductors, where electrons are free to move.

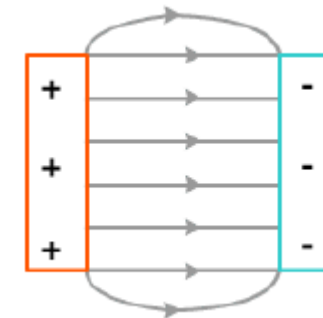
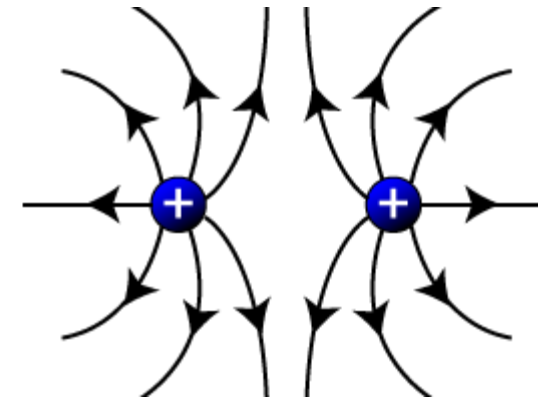
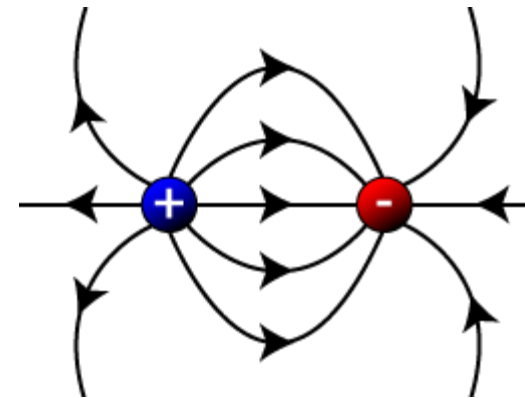
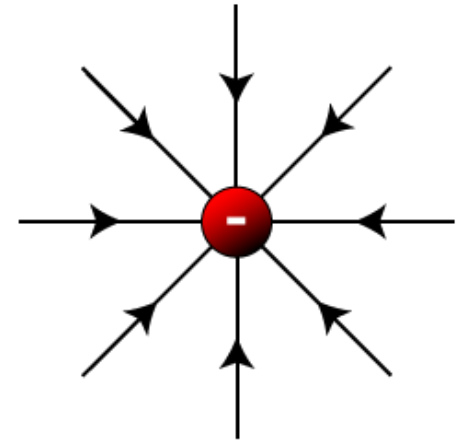
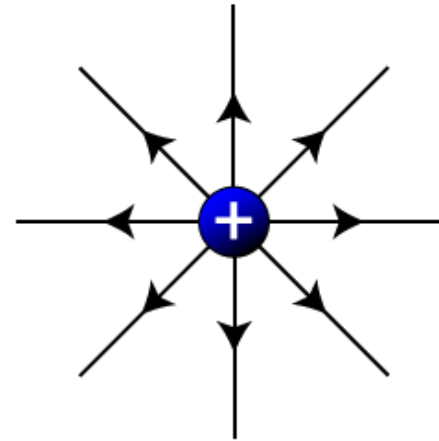
ELECTRIC FIELD LINES

ELECTRIC FIELD

A region in which an electric charge experiences a force.

ELECTRIC FIELD LINE

It is the path a positive charge will take. The direction of an electric field like follows the path of a positive charge.



NOTE THAT:

- Field lines should never cross
- Always from positive to negative
- Distance between field lines represent strength of electric field (stronger inside than outside)

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