# Insulator,conductor and Semiconductor Lecture-10

TDC PART -1

PAPER 1(GROUP B)

Chapter -4

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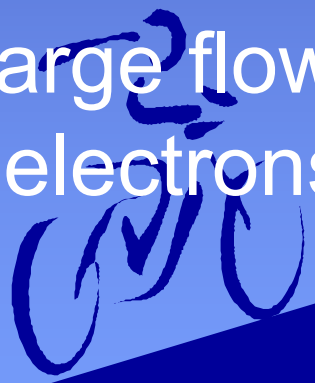
# INSULATOR

- An insulator also referred to as nonconductor is an object or type of material that does not allows the flow of charge (electricity) through them. According to electronic band theory (a branch of physics), a charge flows if states are available into which electrons can be excited.



- This allows electrons to gain energy and thereby move through a conductor such as metal. If no such states are available, the material is an insulator.

- for eg: wood, glass,plastic etc

# SEMICONDUCTOR

- Semiconductors are materials which have an intermediate conductivity between that of conductors (generally metals) and insulator (such as most ceramics); either due to the addition of an impurity or because of temperature effects.
- for eg: silicon, germanium

# CONDUCTOR

- A conductor is a type of material that allows the flow of charge otherwise known as electrical current. Most common electrical conductors are made from metals. Such materials allow the current flow due to the presence of free electron or ions which starts moving when voltage is applied.
- eg :copper ,gold, silver. etc