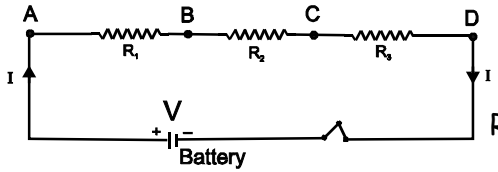
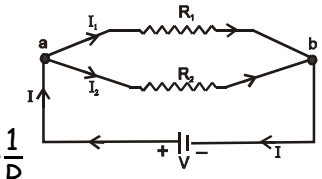
**Class-X(Cancept Map)**




Series combination of resistances

$R_s = R_1 + R_2 + R_3 + \ldots$

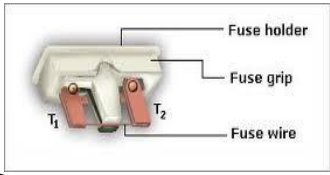



Parallel combination of resistances

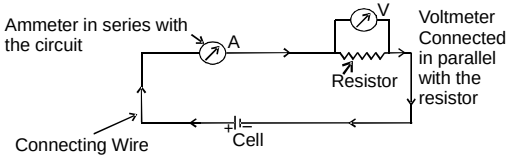
$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

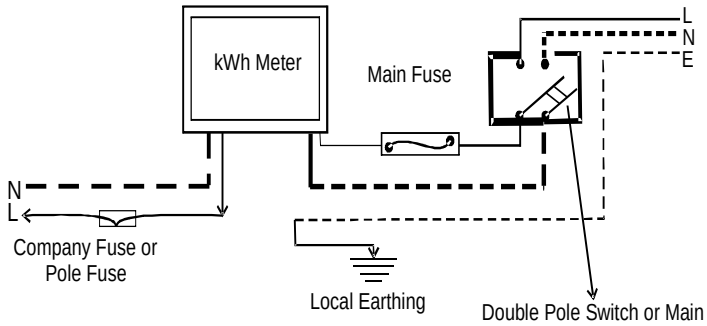
# ELECTRICITY

- Series
- Parallel
- System of resistances
- At constant temperature V = IR
- Ohm's Law
- Amount of heat $H = VIt = I^2Rt = (V^2/R)t$
- Heating effect of current
  - Heat in to work
    - Electric heater
    - Fuse
    - Bulb




- Resistance
  - Where ρ= resistivtiy depends only on temperature and material
  - Unit:ohm Ω
  - Formula:R=ρL/A
  - Dependence:
    - •temperature
    - •material
    - •Length
    - •area
- Power
  - Defination: Electric energy per unit time
  - Unit : watt(W)
  - Formula: $P=I^2R=\frac{V^2}{R}=VI$
  - Commercial unit: $KWH=3.6\times10^6 J$
- House hold electricity
- Circuit Diagram
- Electric current
  - Rate of flow of electric charges
    - Unit:ampere
    - Formula:I=Q/t
    - Measurement: by ammeter
- Electric Potential
  - Definition: Work done to move a unit charge
  - Unit:volt(V)
  - Formula:V=W/Q
  - Measurement: by voltmeter




Switch: Close Open

Bulb:

Galvanometer: G