'AC CIRCUITS'

- Basic Concepts:
  - Current: Rate of change of electrons per unit time is called as current
    Formula: $I = \frac{Q}{t} = \frac{e}{t}$
    unit: A

  - Ac generator: which produces AC current
  - Ac circuits: The circuits which produced by Alternating source
  - Ac current: it magnitude and direction changes with time
    General Equation: $I = I_0 \sin\omega t$
    $e = e_0 \sin\omega t$

- Measurment of AC Current

1. Average Value (for half cycle)

I_{avg}, e_{avg}

- for full cycle Avg is zero

$$\langle f \rangle = \frac{\int_a^b (fx).dx}{\int_a^b dx}$$ FORMULA

$\therefore i_{avg} = 0.637 \times i_0$

$e_{avg} = 0.637 \times e_0$

2. RMS Value:

$$i_{rms} = \left[\frac{i_0}{\sqrt{2}}\right] = 0.707\, i_0$$

$$e_{rms} = \left[\frac{e_0}{\sqrt{2}}\right] = 0.707.e_0$$