Electromagnetic Induction

→ due to changing M.F and due to relative motion b/w conductor and M.F

"Reverse of electromagnetism." $I \times R = \text{constant}$

MCQ

Induce emf depend upon

(a) Resistance (b) induce current $\mathcal{E} = -N\frac{\Delta\phi}{\Delta t}$

(c) speed of conductor (d) "&" "c".

- Induce emf is independent of resistance and current but depend upon rate of change of flux
- But induce current is produced by induce emf.

↳ induce current depend upon emf (induce emf)

emf ≠ 0 but I = 0 (can be zero)

↳ open circuit

B = constant ϕ = constant $\Delta\phi = 0$

↓

Emf = 0 , I = 0

$$\mathcal{E} = -\frac{N\Delta\phi}{\Delta t} \qquad \mathcal{E} = -N\frac{\Delta\phi}{\Delta t}$$

Faraday's law

↳ Applicable on

↳ Induce emf

→ Law of conc. of energy

$$\mathcal{E} = -\frac{N\Delta\phi}{\Delta t} \qquad \mathcal{E} \propto \frac{\Delta\phi}{\Delta t}$$

-ve sign shows that direction of induce emf opposes the direction of $\frac{\Delta\phi}{\Delta t}$.