

# Electromagnetic Induction



## TRY YOURSELF

## ANSWERS

1. When the plane of the coil is parallel to the magnetic field, flux linked with it is zero.
2. One weber is the flux produced when a uniform magnetic field of one tesla acts normally over an area of  $1 \text{ m}^2$ .  
 $1 \text{ weber} = 10^8 \text{ maxwell}$
3. The basic cause of induced emf is change in magnetic flux linked with the closed surface.
4. Induced emf is also called back emf because it always opposes any change in applied emf.
5. When two similar circular loops carrying equal current in same direction they attract each other. When they move apart from each other then current will increase in each loop.
6. Motion of train and aeroplane in earth's magnetic field are the base example of daily life which are based on motional emf due to change in area.
7. In series combination, the relation between self inductance and mutual inductance of the two coils when they are close to each other is given by  
$$L_S = L_1 + L_2 \pm 2M$$
8. The range of coupling coefficient is in between 0 to 1.
9. As S.I. unit of self inductance is henry, and 1 henry can be written as  $\text{V s A}^{-1}$ , so that the dimensional formula of self inductance is  $[\text{ML}^2\text{T}^{-2}\text{A}^{-2}]$ .
10. A.C. generator or dynamo is working on the principle of electromagnetic induction.

