MUTUAL INDUCTION

Whenever there is any change in magnetic flux linked with a coil (due to change of current in the circuit) then an induced e.m.f is produced in another coil which is magnetically linked with it. This induced e.m.f. lasts only during the time in which the current is actually changing. This phenomena is called mutual induction. We have,

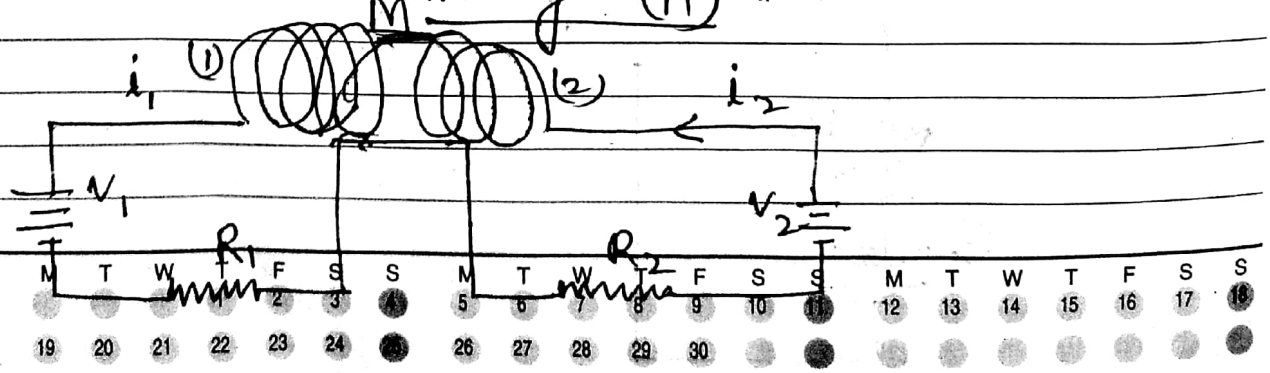
$$\phi = MI \quad \text{and} \quad e = -M\frac{dI}{dt}$$

Memos Notes & Reminders

where M is a constant and is called coefficient of mutual inductance.

The −ve sign indicates the e opposes the change in current. That is, if dI is +ve, the e is −ve, and if dI is −ve, then e is +ve.

The S.I. unit of mutual inductance is henry (H).



1 Ohm × Sec = henry, weber/amp = henry
1 henry = 10^3 mH, 1 henry = 10^9 abhenry