

### ***Previous year definition question's answers:***

**RC Circuit:** An RC circuit is a circuit which is connected by a resistor (R) and capacitor (C) in series. A capacitor can store energy and a resistor will control the rate at which it charges or discharges. The capacitor will discharge its stored energy through the resistor.

**Electric dipole:** An electric dipole consists of two equal and opposite charge placed at a small distance apart.

**Bio savart law:** The magnetic flux density of which  $dB$ , is directly proportional to the length of the element  $dl$ , the current  $I$ , the sine of the angle and  $\theta$  between the direction of current and the vector joining a given point of the magnetic field and the current element and is inversely proportional to the square of the distance of the given part from the element.

### **Faraday's law of electromagnetic:**

1<sup>st</sup>: Whenever there is a change of number of magnetic lines of induction or magnetic flux in a closed loop, then an electromotive force is induced in that loop.

2<sup>nd</sup>: The value of the induced electromotive force in the coil is directly proportional to the rate of change of number of magnetic field lines or magnetic flux.

**Magnetic induction:** The process by which substance such as iron or steel, become magnetized by a magnetic field. The induced magnetism is produced by the force of the field rating the poles of a magnet.

**Electric field:** If a charged object is brought near to an electric body it experiences attractive or repulsive force the region around the electric field body where its influence exists is called electric field.

**Electric potential:** The amount of work done in bringing a unit positive charge from infinity to a point in an electric field is called electric potential.

**Colomb's law:** At a particular medium, the magnitude of attractive or repulsive force between the points is proportional to the product of the charges and inversely proportional to the square distance between the charges.

**Lenz law:** In case of electromagnetic induction, the direction of the induced current is such as to oppose the change of magnetic flux. The production of inducing current in the circuit.

**Self induction:** Self-inductance is the property of the current carrying coil that resists or opposes the change of current flowing through it. This occurs mainly due to the self induced emf produced in the coil itself.

**Mutual Induction:** When two coils are brought in proximity with each other the magnetic field in one of the coils tend to link with the other. This further leads to the generation of voltage in the second coil. This property of a coil which affects or changes the current and voltage in a secondary coil is called mutual inductance.

**Ampere's circuit law:** Ampere's circuital law states that **“the line integral of the magnetic field surrounding closed-loop equals to the number of times the algebraic sum of currents passing through the loop.”**

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