# O P JINDAL SCHOOL, SAVITRINAGAR

***ASSIGNMENT***

***CLASS XII PHYSICS***

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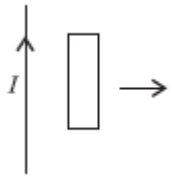
11 A circular loop is moved through the region of uniform magnetic field. Find the direction of induced current (clockwise or anticlockwise) when the loop moves (i) into the field, and (ii) out of the field.


12 A rectangular loop of wire is pulled to the right, away from the long straight wire through which a steady current *I* flows upwards. What is the direction of induced current in the loop?



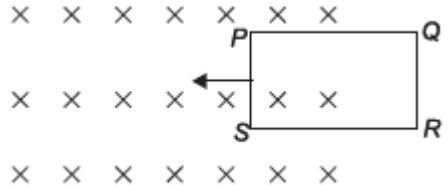

13 When a coil is rotated in a uniform magnetic field at constant angular velocity, will the magnitude of induced emf set up in the coil be constant? Why?

14 A light metal disc on the top of an electromagnet is thrown up as the current is switched on. Why? Give reason.

15 A current carrying wire (straight) passes inside a triangular coil as shown in figure. The current in the wire is perpendicular paper inwards. Find the direction of induced current in the loop if current in the wire is increasing with time.


16 How does the mutual inductance of a pair of coils change when
(i) distance between the coils is increased and
(ii) number of turns in the coils is increased?

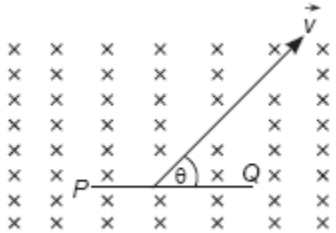
17 The closed loop (PQRS) of wire is moved into a uniform magnetic field at right angles to the plane of the paper as shown in the figure. Predict the direction of the induced current in the loop.




18 The current *i* in an induction coil varies with time *t* according to the adjoining graph.


Draw the graph of induced emf with time.

19 A rod *PQ* of length *l* is moved in uniform magnetic field $\vec{B}$ as shown. What will be the emf induced in it?




20 Why do we prefer carbon brushes than copper in an ac generator?