

**ELECTROMAGNETIC INDUCTION- Test Paper-I****MAX MARKS: 30****TIME: 90Mts**

Sl. No.	QUESTION	ANSWER PAGE	MARKS
1	What are eddy currents? How they are produced?	Page:218	2
2	Explain why do the motion of a copper plate comes to a halt when allowed to swing between the poles of a strong magnet. How can you reduce this damping so that the plate moves freely?	Page:218	3
3	How can you minimize eddy currents in the metallic cores of a transformer? Why it is necessary to reduce eddy currents?	Page:218	2
4	Give any two applications of eddy currents.	Page:218	2
5	Explain how eddy currents help in the working of Induction furnace.	Page:219	1
6	Explain how does the flux linked with a coil change with current flowing through it. What is Inductance? Give the dimensional formula of it. What is its SI unit of measurement?	Page:219	3
7	Give the factors on which the inductance of a coil depends upon.	Page:219	1
8	What is mutual inductance of a solenoid? Give the formula to find the Mutual Inductance of a co-axial solenoid. Also give the factors on which the mutual inductance of a pair of coils depends upon.	Page:220	2
9	What is an AC generator? Explain the working of an AC generator with a neat labelled diagram.	Page:225	3
10	Kamla peddles a stationary bicycle the pedals of the bicycle are attached to a 100 turn coil of area $0.10 \text{ m}^2$ . The coil rotates at half a revolution per second and it is placed in a uniform magnetic field of $0.01 \text{ T}$ perpendicular to the axis of rotation of the coil. What is the maximum voltage generated in the coil?	Page:226	3
11	Explain how a coil responds to the current flowing through it. Define self-inductance of the coil. Also give the factors on which the self-inductance of the coil depends upon.	Page:222	3
12	Give the graphical representation of alternating emf generated by a loop of wire rotating in a magnetic field.	Page:226	2
13	What is the frequency of power supply in India? How is it different from that of USA?	Page:226	$\frac{1}{2} + \frac{1}{2}$
14	Give the dimensional formula of the following a. Mutual Inductance b. Magnetic Flux.	Page:228	$\frac{1}{2} + \frac{1}{2}$

15 Give the SI unit of measurement of the following

$\frac{1}{2} + \frac{1}{2}$

- a. Magnetic Flux
- b. Self-Inductance

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