

ELECTROMAGNETIC INDUCTION

1. A metallic wire 1m in length is moving normally across a field of 0.1 T with a speed of 5 m/s. Find the emf between the ends of the wire.
2. The magnetic flux threading a coil changes from 12×10^{-3} Wb to 6×10^{-3} Wb in 0.01s. Calculate the induced emf.
3. A wire cuts across a flux of 0.2×10^{-2} Weber in 0.12 seconds. What is the value in the wire ?
4. State Lenz's law. Does it violate law of conservation of energy ? Explain ?
5. What are eddy currents ? Name any two of its applications.
6. How can eddy currents be reduced ?
7. Derive an expression for the energy stored in an inductor.
8. State the factors on which the induced emf in a coil rotating in a uniform magnetic field depends.
9. On what factors does the magnitude of the emf induced in the circuit due to magnetic flux depend ?
10. Define the term self inductance of the coil. Give its S.I unit.