

### Answer on Question #73817, Physics / Electromagnetism

As a loop of wire with a resistance of 10 ohm moves in a constant non uniform magnetic field, it loses kinetic energy at uniform rate of 4mJ/s. What will be the induced current in the loop?

**Solution:**

We can find the rate of loss of kinetic energy using the equation of power of electric current

$$P = IU$$

We know

$$I = \frac{U}{R} \rightarrow U = IR$$

The reasons for the equation of current in the power equation and get it

$$P = I^2R$$

Therefore,

$$I = \sqrt{\frac{P}{R}}$$
$$I = \sqrt{\frac{4 \times 10^{-3}W}{10 \text{ Ohm}}} = 0.02 \text{ A}$$

**Answer: 0.02 A**

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