



Physics Problem of the Day

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Class XII — Electromagnetic Induction

A rectangular coil of 200 turns and area $(4 \times 10^{-2} \text{ m}^2)$ is rotated uniformly from a position where its plane is perpendicular to a magnetic field of strength (0.5 T) to a position where its plane becomes parallel to the magnetic field in (0.08 s) . Calculate:

- The change in magnetic flux through the coil
- The average induced emf generated

Given:

- Number of turns, $(N = 200)$
- Area of coil, $(A = 4 \times 10^{-2} \text{ m}^2)$
- Magnetic field, $(B = 0.5 \text{ T})$
- Time taken, $(t = 0.08 \text{ s})$

Show Solution