

JEE MAIN ELECTROMAGNETIC INDUCTION — AC GENERATOR — PYQS

Max. Marks: 8

Questions: 2

Section A (MCQ) — 1 question

- Q.1** A coil of area A and N turns is rotating with angular velocity ω in a uniform magnetic field $\vec{B}$ about an axis perpendicular to $\vec{B}$. Magnetic flux ϕ and induced emf ε across it, at an instant when $\vec{B}$ is parallel to the plane of coil, are :

[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) $\phi = AB$, $\varepsilon = NAB\omega$ (2) $\phi = AB$, $\varepsilon = 0$
 (3) $\phi = 0$, $\varepsilon = 0$ (4) $\phi = 0$, $\varepsilon = NAB\omega$

Scan or tap for the
full solution



Section B (Numerical) — 1 question

- Q.2** A conducting circular loop is rotated about its diameter at a constant angular speed of 100 rad/s in a magnetic field of 0.5 T perpendicular to the axis of rotation. When the loop is rotated by 30° from the horizontal position, the induced EMF is 15.4 mV . The radius of the loop is _____ mm.

(Take $\pi = \frac{22}{7}$)

[JEE Main 2026 (Online) 22nd January Evening Shift]

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full solution



ANSWER KEY

Section A (MCQ) — 1 question

Ques.	1											
Ans.	4											

Section B (Numerical) — 1 question

Ques.	2											
Ans.	14											