

JEE MAIN MOVING CHARGES AND MAGNETISM — MAGNETIC FIELD ON THE AXIS OF A CIRCULAR CURRENT LOOP — PYQS

Max. Marks: 16
Questions: 4

Section A (MCQ) — 4 questions

- Q.1** A small cube of side 1 mm is placed at the centre of a circular loop of radius 10 cm carrying a current of 2 A. The magnetic energy stored inside the cube is $\alpha \times 10^{-14}$ J. The value of α is _____.

 $(\mu_0 = 4\pi \times 10^{-7} \text{ Tm/A}, \pi = 3.14)$

[JEE Main 2026 (Online) 6th April Morning Shift]

- (1) 6.28 (2) 6.28×10^{-6}
 (3) 628 (4) 6.28×10^{-4}

Scan or tap for the full solution



- Q.2** The magnetic field at the centre of a current carrying circular loop of radius R is $16 \mu\text{T}$. The magnetic field at a distance $x = \sqrt{3}R$ on its axis from the centre is _____ μT .

[JEE Main 2026 (Online) 28th January Morning Shift]

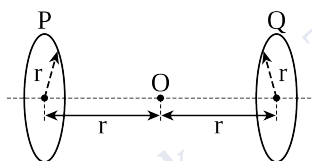
- (1) 8 (2) 2 (3) 4 (4) $2\sqrt{2}$

Scan or tap for the full solution



- Q.3** Two identical circular loops P and Q each of radius r are lying in parallel planes such that they have common axis. The currents through P and Q are I and 4I respectively in clockwise direction as seen from O. The net magnetic field at O is :

[JEE Main 2026 (Online) 24th January Evening Shift]



- (1) $\frac{\mu_0 I}{4\sqrt{2}r}$ towards Q (2) $\frac{3\mu_0 I}{4\sqrt{2}r}$ towards Q
 (3) $\frac{3\mu_0 I}{4\sqrt{2}r}$ towards P (4) $\frac{\mu_0 I}{4\sqrt{2}r}$ towards P

Scan or tap for the full solution



- Q.4** Let B_1 be the magnitude of magnetic field at center of a circular coil of radius R carrying current I. Let B_2 be the magnitude of magnetic field at an axial distance 'x' from the center. For $x:R = 3:4$, $\frac{B_2}{B_1}$ is :

[JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) 64:125 (2) 25:16 (3) 4:5 (4) 16:25

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ANSWER KEY

Ques.	1	2	3	4										
Ans.	1	2	2	1										