

103. A moving coil galvanometer has a coil with 175 turns and area 1 cm^2 . It uses a torsion band of torsion constant 10^{-6} N-m/rad . The coil is placed in a magnetic field B parallel to its plane. The coil deflects by 1° for a current of 1 mA . The value of B (in Tesla) is approximately:

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(a) 10^{-4}

(b) 10^{-2}

(c) 10^{-1}

(c) 10^{-3}

3. (d) $C\theta = NBI A \sin 90^\circ$

$$\text{or } 10^{-6} \left(\frac{\pi}{180} \right) = 175B(10^{-3}) \times 10^{-4}$$

$$\therefore B = 10^{-3} \text{ T}$$

(d) Using $i = \frac{S}{A}$