

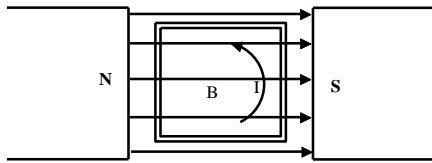
A 100 turns square coil of edge 15 cm kept in magnetic field $B = 0.5 \text{ Wbm}^{-2}$ carries a current of $I = 1 \text{ A}$ as shown in the figure. Torque acting on the coil is,

(A) 2.25 N-m

(B) 1.25 N-m

(C) 11.25 N-m

(D) 1.125 N-m



Solution

We have, $\tau = NIAB \sin \theta = 100 \times 1 \times 0.15^2 \times 0.5 \times \sin 90^\circ$

$$\therefore \tau = 100 \times 1 \times 0.15^2 \times 0.5 \times 1 = 1.125 \text{ N-m}$$

Hence, (D)