

- 1 Two identical current carrying coaxial loops, carry current  $I$  in an opposite sense. A simple amperian loop passes through both of them once. Calling the loop as  $C$ ,

(a)  $\oint_C \mathbf{B} \cdot d\mathbf{l} = \pm 2\mu_0 I$ .

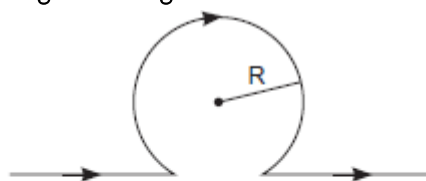
(b) the value of  $\oint_C \mathbf{B} \cdot d\mathbf{l}$  is independent of sense of  $C$ .

(c) there may be a point on  $C$  where,  $\mathbf{B}$  and  $d\mathbf{l}$  are parallel.

(d)  $\mathbf{B}$  vanishes everywhere on  $C$ .

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- 2 The strength of magnetic field at the centre of circular coil is



(a)  $\frac{\mu_0 I}{R} \left(1 - \frac{1}{\pi}\right)$

(b)  $\frac{\mu_0 I}{\pi R}$

(c)  $\frac{\mu_0 I}{2R} \left(1 - \frac{1}{\pi}\right)$

(d)  $\frac{\mu_0 I}{2R} \left(1 + \frac{1}{\pi}\right)$

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- 3 If a charged particle moves through a magnetic field perpendicular to it

(a) both momentum and energy of particle change.

(b) momentum as well as energy are constant.

(c) energy is constant but momentum changes.

(d) momentum is constant but energy changes.

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- 4 A current carrying closed loop of an irregular shape lying in more than one plane when placed in uniform magnetic field, the force acting on it

(a) will be more in the plane where its larger position is covered.

(b) is zero.

(c) is infinite.

(d) may or may not be zero.

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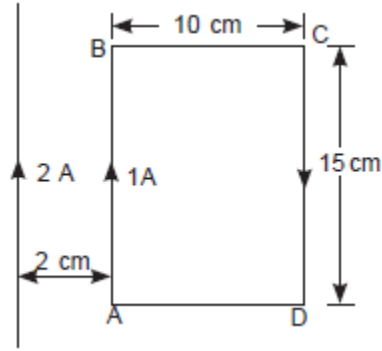
- 5 The maximum current that can be measured by a galvanometer of resistance  $40 \Omega$  is  $10 \text{ mA}$ . It is converted into voltmeter that can read upto  $50 \text{ V}$ . The resistance to be connected in the series with the galvanometer is

(a)  $2010 \Omega$  (b)  $4050 \Omega$

(c)  $5040 \Omega$  (d)  $4960 \Omega$

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What is the net force on the rectangular coil?

(a)  $25 \times 10^{-7}$ 

N towards wire.

(b)  $25 \times 10^{-7}$  N away from wire.

(c)  $35 \times 10^{-7}$  N towards wire.

(d)  $35 \times 10^{-7}$  N away from wire.

7 If the beams of electrons and protons move parallel to each other in the same direction, then they

(a) attract each other.

(b) repel each other.

(c) no relation.

(d) neither attract nor repel.

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8 The magnetic field due to a straight current carrying conductor of infinite length at a perpendicular distance  $a$  is equal to \_\_\_\_\_.

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9 Relation between S.I. unit and C.G.S unit magnetic field is \_\_\_\_\_.

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10 According to ampere circuital law, the line integral of the magnetic field  $\vec{B}$  around any closed path enclosing current  $I$ , is equal to \_\_\_\_\_.

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