



## **DPP – 6 (Magnetic Field & Force)**

Video Solution on Website:https://physicsaholics.com/home/courseDetails/34

Video Solution on YouTube:-

https://youtu.be/wMR7jl2rA8c

https://physicsaholics.com/note/notesDetalis/50 Written Solution on Website:-

- Q 1. A circular coil of diameter 7cm has 24 turns of wire carrying current of 0.75A. The magnetic moment of the coil is (b)  $2.3 \times 10^{-2} amp - m^2$ (d)  $10^{-3} amp - m^2$ (a)  $6.9 \times 10^{-2} amp - m^2$ (c)  $10^{-2} amp - m^2$
- Q 2. A circular coil of wire n turns has a radius r and carries a current I. Its magnetic dipole moment is M. Now the coil is unwound and again rewound into a circular coil of half the initial radius and the same current is passed through is, then the dipole moment of this new coil is: (b) M/4
  - (a) M/2
  - (c) M

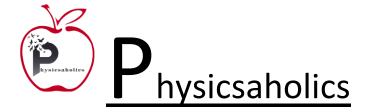
(c)  $\frac{i^2 l}{4\pi}$ 

A wire of length l, carrying current i, is bent in circle of radius r, then magnetic moment Q 3. of loop is (a)  $\frac{il^2}{2\pi}$ (b)  $\frac{il^2}{4\pi}$ (d)  $\frac{il}{4\pi}$ 

(d) 2M

A circular coil of radius 4 cm and of 20 turns carries a current of 3 amperes. It is Q 4. placed in a magnetic field of intensity of 0.5 weber  $/m^2$ . The magnetic dipole moment of the coil is (b)  $0.3 amp - m^2$ (d)  $0.6 amp - m^2$ (a) 0.15  $amp - m^2$ (c)  $0.45 \text{ amp} - m^2$ 

- The final torque on a coil having magnetic moment 25 A- $m^2$  in a 5 T uniform Q 5. external magnetic field (initially plane of coil is perpendicular to magnetic field), if the coil rotated through an angle of  $60^{\circ}$  under the influence of the magnetic field is (b) 108.25 N-m (a) 216.5 N-m (c) 102.5 N-m (d) 258.1 N-m
- Q 6. The deflection in a moving coil galvanometer is
  - (a) directly proportional to the torsional constant
  - (b) directly proportional to the number of turns in the coil
  - (c) inversely proportional to the area of the coil
  - (d) inversely proportional to the current flowing





- Q 7. A current of  $10^{-5}A$  produced a deflection of  $10^{\circ}$  in a moving coil galvanometer. A current of  $10^{-6}amp$  in the same galvanometer produces a deflection of (a)  $1^{\circ}$  (b)  $2^{\circ}$ (c)  $3^{\circ}$  (d)  $4^{\circ}$
- Q 8. Two galvanometers A and B require 3mA and 5mA respectively to produce the same deflection of 10 divisions. Then
  - (a) A is more sensitive than B
  - (b) B is more sensitive than A
  - (c) A and B are equally sensitive
  - (d) Sensitiveness of B is 5/3 times that of A
- Q 9. The current sensitivity of a moving coil galvanometer is 10 div/mA and voltage sensitivity is 20 div/V. Find the resistance of the galvanometer (a)  $1000\Omega$  (b)  $500\Omega$ 
  - (a) 100022 (b) 5002(c)  $100\Omega$  (d)  $50\Omega$
- Q 10. In an attempt to increases the current sensitivity of a moving coil galvanometer, it is found that its resistance becomes double while the current sensitivity increases by 10%. The voltage sensitivity of the galvanometer changes by
  (a) 40%
  (b) 45%

(d) - 55%

- (c) 55%
- Q 11. The current sensitivity of a moving coil galvanometer can-not be increased by (a) Increasing the magnetic field
  - (b) Increasing the area of the deflecting coil
  - (c) Increasing the number of turns in the coil
  - (d) Increasing the restoring couple of the coil

## **Answer Key**

Q.1 a	Q.2 a	Q.3 b	Q.4 b	Q.5 b
Q.6 b	Q.7 a	Q.8 a	Q.9 b	Q.10 b
Q.11 d				