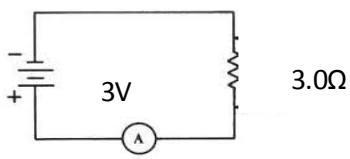
MAGNETIC EFFECTS OF CURRENT

Test Paper-III

MAX MARKS: 30 **TIME: 90Mts**

Sl. No.	QUESTION	ANSWER PAGE	MARKS
1	Find the Torque on a rectangular current loop placed in a uniform magnetic field.	Page:157	3
2	Define magnetic moment of the current loop. Is it a vector or scalar?	Page:158	2
3	A current carrying circular loop is free to turn, what is its orientation of stable equilibrium? Show that in this orientation, the flux of the total field is maximum.	Page:160	2
4	A loop of irregular shape carrying current is located in an external magnetic field. If the wire is flexible, why does it change to a circular shape?	Page:160	1
5	What is the principle of working of Moving Coil Galvanometer?	Page:164	1
6	With a neat labelled diagram explain the working of a Moving Coil Galvanometer.	Page:164	3
7	What is the type of magnetic field used in Moving coil Galvanometer? Also give the various uses of Moving coil galvanometer	Page:164	2
8	How will you convert a galvanometer into an Ammeter? Derive the expression to find the resistance for the same.	Page:165	3
9	How will you convert a galvanometer into a Voltmeter? Derive the expression to find the resistance for the same.	Page:165	3
10	Define voltage sensitivity of a Galvanometer. Give the factors on which the voltage sensitivity depends on.	Page:165	2
11	Define current sensitivity of a Galvanometer. Give the factors on which the current sensitivity depends on.	Page:165	2
12	In the circuit shown in figure the current is to be measured. What is the value of the current if the ammeter shown (a) is a galvanometer with a resistance R_G=60Ω; (b) is a galvanometer described in (a) but converted to an ammeter by a shunt resistance r_s=0.02Ω ;(c) is an ideal ammeter with zero resistance?	Page:165	3



13 Give any two differences between an Ammeter and a Voltmeter. A 100 turn closely wound circular coil of radius 10cm carries a current of 3.2A (a) What is the magnetic moment of this coil? The coil is placed in a vertical plane and is free to rotate about a horizontal axis which coincides with its diameter. A uniform magnetic field of 2T in the horizontal direction exists such that initially the axis of the coil is in the direction of the field. The coil rotates through an angle of 90^{o} under the influence of the magnetic field. What are the magnitudes of the torques on the coil in the initial and final position? 3

Page:159