Model Question Paper

Effects of Electric Current - Part V

12th Standard

Physics

Reg.No. : | | | | | | |

I.Answer all the Questions.

II.Use blue pen only.

Time : 02:00:00 Hrs

Total Marks : 50

Section-A

5 x 1 = 5

1) When a current carrying loop is placed in a magnetic field a/an ..... is acting on it.

   (a) electrical force (b) magnetic force (c) torque (d) repulsive force

2) The galvanometer constant is given by

   (a) $K = \frac{n}{ABC}$ (b) $K = \frac{B}{nCA}$ (c) $K = \frac{A}{nBC}$ (d) $K = \frac{C}{nBA}$

3) The current sensitivity of a galvanometer decreases by increasing

   (a) the magnetic field (b) the coule per unit twist of the suspension wire (c) the area of the coil (d) the number of turns

4) The voltage sensitivity of a galvanometer does not change bychanging the value of

   (a) the magnetic field (b) area of the coil (c) the couple per unit twist (d) the number of turns

5) To convert a galvanometer into an ammeter a..... is connected in ..... with it.

   (a) low resistance; series (b) low resistance; parallel (c) high resistance; series (d) high resistance; parallel

Section-B

5 x 3 = 15

6) Define Ampere's circular law.

7) State end rule.

8) Is electron can be accelerated by a cyclotron?support your answer with reason.

9) How does the current sensitivity of a galvanometer can be increased?

10) Why is an ammeter always connected in series?

Section-C

6 x 5 = 30

11) Explain how a galvanometer is converted into an ammeter.

12) What is magnetic Lorentz force?Discuss the special features of the force.

13) Applying Ampere circuital law, obtain an expression for a magnetic induction due to a long solenoid.

14) Derive an expression for magnetic dipole moment of a revolving electron.

15) Obtain an expression for torque experienced by a current loop in a uniform magnetic field.

16) a) How will you convert a galvanometer into voltmeter?

    b) What is gyromagnetic ratio?Give its value.

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