

### Magnetic effect of Electric current (30 marks)

(1×5 = 5)

Q1. Name any two appliances which are based on the application of heating effect of electric current.

Q2. Draw a diagram to represent a uniform magnetic field in a given region.

Q3. List two properties of magnetic field lines.

Q4. Which rule shows the direction of magnetic field around wire.

Q5. What is the unit of Magnetic field.

(2×3 =6)

Q6. Why and when does a current carrying conductor kept in a magnetic field experience force? List the factors on which direction of this force depends.

Q7. How is the strength of magnetic field near a straight current-conductor

(i) related to the strength of current in the conductor.

(ii) is affected by changing the direction of flow of current in the conductor.

Q8. What is meant by the term 'frequency of an alternating current'? What is its value in India? Why is an alternating current considered to be advantageous over direct current for long range transmission of electric energy.

(3 ×3 = 9)

Q9. Describe an activity to show that the magnetic field lines produced when current is passed through the circular coil.

Q10. What is meant by solenoid? How does a current carrying solenoid behave? Give its main use.

Q11. With the help of a diagram of experimental setup describe an activity to show that the force acting on a current carrying conductor placed in a magnetic field increases with increase in field strength.

(2×5 = 10)

Q12. (a) Describe an activity to demonstrate the pattern of magnetic field lines around a straight conductor carrying current.

(b) State the rule to find the direction of magnetic field associated with a current carrying conductor.

Q13. (a) Explain why there are two separate circuits one for high power rating appliances and other for low power rating appliances.

(b) A domestic circuit has 5A fuse. How many bulbs of rating 100W, 220V can be safely used in this circuit? Justify your answer.