

# **ASSIGNMENT QUESTIONS FOR PRACTICE** **MAGNETIC EFFECTS OF ELECTRIC CURRENT**

## **VERY SHORT ANSWER TYPE QUESTIONS (1 MARK)**

1. Name the scientist who discovered the magnetic effect of current.
2. Does a current flowing in a wire always give rise to a magnetic field around it?
3. State any two properties of magnetic field lines.
4. Why does a compass needle get deflected when brought near a bar magnet?
5. Name the effect of current on which an electromagnetic works.
6. What name is given to the combination of a solenoid and a soft iron core?
7. Can steel be used for making electromagnets?
8. Name the scientist who discovered that a current carrying conductor when placed in a magnetic field experiences a mechanical force.
9. When is the maximum force exerted on a current carrying conductor while it is kept in a magnetic field?
10. Does a current carrying conductor experience some force when kept parallel to the magnetic field?
11. Which rule is employed to find the direction of force on a current carrying conductor when kept in a magnetic field? State the rule and explain it by a diagram.
12. Name the transformation of energy involved in the electric motor.
13. What is the function of commutator rings in the electric motor?
14. What is the function of carbon brushes in the electric motor?
15. Name one application of electromagnetic induction.
16. What is the other name of electric generator?
17. Name the transformation of energy in an electric generator.

18. What is a turbine used for?
19. Name the different types of electric power plants for generating electricity on large scale.
20. Name the fuel used in a thermal power plant.
21. Name the fuel used in an atomic power plant.
22. What do you understand by magnetic field?
23. What do you mean by electromagnetism?
24. What is meant by magnetic effect of current?
25. Can you observe the magnetic field?
26. What do you mean by a magnetic line of force?
27. Is a magnetic line of force always a straight line?
28. What do you conclude from Oersted's experiment?
29. Can you magnetic line of force ever intersect each other?
30. What kind of magnetic field is produced by a straight current carrying conductor?
31. What kind of magnetic field is produced by a current carrying circular field?
32. What do you mean by a solenoid?
33. State the clock rule for a current carrying solenoid.
34. How does a current carrying solenoid behave?
35. What is the nature of magnetic field produced by a current carrying solenoid?
36. What is the magnitude and direction of the magnetic field inside a current carrying solenoid?
37. Name the effect of current upon which electromagnets are based?
38. Are electromagnets permanent magnets?
39. Name the material used for making the core of an electromagnet.

40. Can we use steel, instead of soft iron, for making the core of an electromagnet?  
Why?
41. Can we change the polarity of a permanent magnet?
42. Can we change the polarity of an electromagnet?
43. Is the strength of an electromagnet always constant?
44. Name the rule applied to know direction of the force acting on a current carrying conductor when placed in a magnetic field.
45. Name the transformations of energies takes place in an electric motor.
46. Name the two kinds of motors.
47. Which kind of motor is used in a fan?
48. Which kind of motor used in a battery-operated toy?
49. Name the experiment which formed the basis of an electric motor.
50. What forms the commutator of an electric motor?
51. State quantitatively, the effect of inserting an iron core into a current carrying solenoid.
52. Name the types of electromagnets commonly used.
53. What happens to the strength of an electromagnet when the magnitude of current decreases?
54. What will you prefer, soft iron or steel to make an electromagnet?
55. Can we produce electricity from magnetism?
56. Name the phenomenon in which an electric current could be produced in a circuit by changing the magnetic field.
57. What do you mean by electromagnetic induction?
58. What is e.m.i. or E.M.I.?
59. What do you understand by electric motor effect?
60. What is the cause of electromagnetic induction?



61. Does the AC generator have any slip ring?
62. Does the DC generator have two slip rings?
63. What is the frequency DC?
64. Name the fuel used by nuclear power station.
65. Name the device which converts electrical energy into kinetic energy.
66. What is the SI unit of induced emf?
67. State two factors on which the strength of induced current depends.
68. What is the SI unit of induced current?
69. What is electromagnetic induction?
70. What do you mean by a solenoid?

**SHORT ANSWER TYPE – I QUESTIONS (2 MARKS)**

1. Draw a labeled diagram of an electric motor.
2. State and explain Fleming's right hand rule for the direction of induced current.
3. What do you mean by DC? Show by a diagram.
4. What do you mean by AC? Show by a diagram.
5. Draw a labeled to show the magnetic field pattern due to a straight wire carrying current.
6. With the help of a diagram, indicate the direction of magnetic field produced by a current carrying conductor. Name the rule employed and state it.
7. With the help of a diagram, indicate the direction of magnetic field produced due to a circular wire carrying current.
8. Indicate the direction of the magnetic field produced in a solenoid when some current is passed through it.
9. How can we increase the strength of magnetic field produced by a circular coil carrying conductor?

10. What are the factors on which the strength of magnetic field produced by a current carrying solenoid depends?
11. List the factors affecting the strength of an electromagnet.
12. Show that magnetic lines of force due to a bar magnet.

**SHORT ANSWER TYPE – II QUESTIONS (3 MARKS)**

1. Briefly describe Oersted's experiment to demonstrate the magnetic effect of current.
2. What are magnetic field lines? Give their important properties.
3. How will you experimentally show the magnetic field produced by a straight current carrying conductor? Also state Maxwell's right hand grip rule.
4. What kind of magnetic field is produced by a current carrying circular coil? Show it with the help of a labeled diagram.
5. What do you mean by a solenoid? With the help of a labeled, show the magnetic field due to a current carrying solenoid.
6. What do you mean by an electromagnet? With the help of diagram show the two types of electromagnets. Give two uses of electromagnets.
7. How does AC differ from DC? What are the advantages and disadvantages of AC over DC?
8. What is the basic difference between an AC generator and a DC generator?
9. Briefly explain the phenomenon of earthing using examples.
10. Describe the salient features of tree system of wiring.

**LONG ANSWER TYPE QUESTIONS (5 MARKS)**

1. Why does a magnetic compass needle pointing North and South in the absence of a nearby magnet get deflected when a bar magnet or a current carrying loop is brought near it. Describe some salient features of magnetic lines if field concept.

2. With the help of a labeled circuit diagram, illustrate the pattern of field lines of the magnetic field around a current carrying straight long conducting wire. How is the right hand thumb rule useful to find the direction of magnetic field associated with a current carrying conductor?
3. Explain with the help of a labeled diagram the distribution of magnetic field due to a current through a circular loop. Why is it that if a current carrying coil has 'n' turn, the field produced at any point is a times as large as that produced by a single turn?
4. (a) State the factors on which the strength of an electromagnet depends. (b) How does an electromagnet differ from a bar magnet or permanent magnet?
5. How will you experimentally show that a current carrying conductor experiences a force when kept in a magnetic field?
6. What is the principle of an electric motor? Briefly explain the construction and working of an electric motor using a labeled diagram. State the factors on which the strength of a motor depends.
7. What is meant by electromagnetic inductions? How will you demonstrate this phenomenon with the help of an experiment? State the factors on which the strength the induced current depends.
8. Briefly describe the principle, construction and working of an AC generator or dynamo.
9. (a) How are electrical installations carried out in a house? (b) What is the main function of electric fuse? Briefly explain it.
10. What safety measures do you employ in the use of electricity?