

## **MAGNETIC EFFECTS OF ELECTRIC CURRENT (CLASS-X)**

### **PRACTICE QUESTIONS**

1. Degree of closeness of the magnetic field lines signifies
  - (a) Number of magnetic fields
  - (b) Distance between different magnetic fields
  - (c) Relative strength of the magnetic field
  - (d) Direction of the magnetic field
2. When the current in a wire moves from south to north, the direction of the deflection in the magnetic needle parallel to the wire will be
  - (a) East to west
  - (b) West to east
  - (c) East to north
  - (d) West to south
3. A magnetic field cannot exert any force on a
  - (a) Moving magnet
  - (b) Stationary magnet
  - (c) Stationary charge
  - (d) Moving charge
4. An alpha particle is projected towards west and gets deflected towards north by a magnetic field. The direction of the magnetic field is
  - (a) Towards south
  - (b) Towards east
  - (c) Downwards
  - (d) Upwards
5. Magnetic field produced inside a solenoid are so strong that
  - (a) They can be used to magnetize a magnetic material, when placed inside the coil.
  - (b) They can be used to magnetize a magnetic material, when placed near the coil.
  - (c) They are still not able to magnetize a magnetic material.
  - (d) They become permanent.
6. Which of the following is not true for an electric generator
  - (a) Converts mechanical energy into electrical energy.
  - (b) Works on the basis of electromagnetic induction.

(c) Can be used to generate AC or DC.

(d) Converts electrical energy to mechanical energy

7. Parameters of electricity supply in India are

(a) Potential Difference of 220 V, Frequency of 50 hertz and Current Rating of 5A/15A

(b) Potential Difference of 150 V, Frequency of 40 hertz and Current Rating of 10 A

(c) Potential Difference of 220 V, Frequency of 60 hertz and Current Rating of 15A

(d) Potential Difference of 220 V, Frequency of 40 hertz and Current Rating of 5 A

8. Draw the pattern of field lines due to a bar magnet. Mention properties of the magnetic field lines. Why two field lines do not intersect each other?

9. Draw the pattern of lines of force due to a magnetic field through and around a current carrying loop of wire. How would the strength of the magnetic field produced at the centre of the circular loop be affected if (i) the strength of the current passing through this loop is doubled? (ii) the radius of the loop is reduced to half of the original radius? (iii) the number of turns of the wire is increased?

Draw the pattern of field lines due to a solenoid carrying electric current. Mark the north and the south poles in the diagram. What is the direction of magnetic field lines inside a solenoid.

10. The magnetic field all points well inside a long straight solenoid carrying current is -----  
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11. How do we determine the direction of magnetic field at a point due to a given source.

12. What is the effect of inserting a soft iron core inside a current carrying solenoid?

13. What happens to the force on a current carrying conductor when placed perpendicular in uniform magnetic field has its length doubled?

14. If current flowing through a conductor placed in magnetic field is halved( which is at right angles to each other)does it affect its deflection?

15. An electron beam is moving vertically upwards. If it passes through a magnetic field which is directed from south to north in a horizontal plane, then in which direction will the beam be deflected?

16. The magnetic force acts on a moving proton is towards north in a horizontal plane.If the proton is moving vertically up, then what will be the direction of magnetic field?

17. What is the frequency of a.c and d.c.current that you use in your house?

18. what will be the frequency of an A.C current if its direction changes after every a)0.01s? b) 0.02s

19. The mains power supply of a house is through a 5-A fuse. How many 100-W bulbs can be used in this house at the correct voltage?

**20. a) Draw a schematic labeled diagram of a domestic wiring circuit which includes (i) a main fuse (ii) a power meter (iii) one light point (iv) a power plug. (b) Why is it necessary to connect an earth wire to electric appliances having metallic covers?**