

Question Bank - Grade10

Physics

Chapter 13

Magnetic Effects of Electric Current

Answer the following:

- 1) What is meant by magnetic field?
- 2) Draw a diagram to show the magnetic field lines around a bar magnet.
- 3) List the characteristics of the magnetic field lines.
- 4) What is the direction of field lines?
- 5) What are magnetic field lines? Justify the following statements:
 - (a) Two magnetic field lines never intersect each other.
 - (b) Magnetic field are closed curves.
- 6) Why does the bulk of iron filings stick to the ends of a bar magnet and not at its centre?
- 7) A compass needle is placed near a current carrying straight conductor. State your observation for the following cases and give reasons for the same in each case.
 - (a) Magnitude of electric current is increased.
 - (b) The compass needle is displaced away from the conductor.
- 8) State right-hand thumb rule.
- 9) What is an electromagnet? List any two uses.
- 10) Draw circuit diagram of a solenoid to prepare an electromagnet.
- 11) State the purpose of soft iron core used in making an electromagnet.
- 12) List two ways of increasing the strength of an electromagnet if the material of the electromagnet is fixed.
- 13) What is solenoid? Draw the pattern of magnetic field lines of a current carrying solenoid.
- 14) Draw the magnetic field lines through and around a single loop of wire carrying electric current.
- 15) A current carrying conductor is placed in a magnetic field. Now answer the following.
 - (i) List the factors on which the magnitude of force experienced by

conductor depends.

(ii) When is the magnitude of this force maximum?

(iii) State the rule which helps, in finding the direction of motion of conductor.

- 16) Describe an activity with labelled diagram to show that a force acts on current carrying conductor placed in a magnetic field and its direction of current through conductor.
- 17) Mention and explain the function of an earth wire. Why it is necessary to earth metallic appliances?
- 18) The burnt-out fuse should be replaced by another fuse of identical rating. Give reason.
- 19) It is dangerous to touch the live wire of the main supply rather than neutral wire. Why?
- 20) What is a fuse? Why is it called a safety device?
- 21) Why is it necessary to earth metallic electric appliances?
- 22) Name two safety measures commonly used in an electric circuit and appliances.
- 23) What precaution should be taken to avoid the overloading of domestic electric circuits?
- 24) Draw a schematic diagram of a common domestic circuit.
- 25) Distinguish between short circuiting and overloading.
- 26)