CLASS 10 PHYSICS PREVIOUS YEAR QUESTIONS
MAGNETISM

Question 1. What is meant by magnetic field?

Question 2. Draw magnetic field lines around a bar magnet. Name the device which is used to draw magnetic field lines. (Board Term I, 2015)

Question 3. Design an activity to demonstrate that a bar magnet has a magnetic field around it. (Board Term I, 2017)

Question 4. What are magnetic field lines? Justify the following statements:
(a) Two magnetic field lines never intersect each other.
(b) Magnetic field are closed curves. (Board Term I, 2016)

Question 5. (a) What is meant by a magnetic field? Mention two parameters that are necessary to describe it completely.
(b) If field lines of a magnetic field are crossed at a point, what does it indicate? (Board Term I, 2013)

Question 6. 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. (AI 2019)

Question 7. State how the magnetic field produced by a straight current carrying conductor at a point depends on
(a) current through the conductor
(b) distance of point from conductor. (Board Term I, 2014)

Question 8. Give reason for the following
(i) There is either a convergence or a divergence of magnetic field lines near the ends of a current carrying straight solenoid.
(ii) The current carrying solenoid when suspended freely rests along a particular direction. (2/3, 2020)

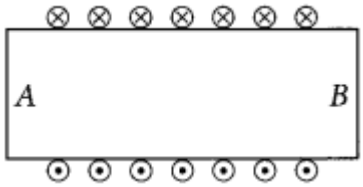
Question 9. Find the direction of magnetic field due to a current carrying circular coil held:
(i) vertically in North – South plane and an observer looking it from east sees the current to flow in anticlockwise direction,
(ii) vertically in East – West plane and an observer looking it from south sees the current to flow in anticlockwise direction,
(iii) horizontally and an observer looking at it from below sees current to flow in clockwise direction .(Board Term I, 2017)

Question 10. (a) State three factors on which the strength of magnetic field produced by a current carrying solenoid depends.
(b) Draw circuit diagram of a solenoid to prepare an electromagnet. (Board Term I, 2016)

Question 11. (a) State Right Hand Thumb rule to find the direction of the magnetic field around a current carrying straight conductor.
(b) How will the magnetic field be affected on:
(i) increasing the current through the conductor
(ii) reversing the direction of flow of current in the conductor? (Board Term I, 2015)

Question 12. Diagram shows the lengthwise section of a current carrying solenoid. ⊗ indicates current entering into the page, ⊙ indicates current emerging out of the page. Decide which end of the solenoid

A or B, will behave as north pole. Give reason for your **Answer**. Also draw field lines inside the solenoid.



Question 13. Write one application of right hand thumb rule. (1/3, Board Term I, 2013)

Question 14. (a) What is an electromagnet? List any two uses.
(b) Draw a labelled diagram to show how an electromagnet is made.
(c) State the purpose of soft iron core used in making an electromagnet.
(d) List two ways of increasing the strength of an electromagnet if the material of the electromagnet is fixed. (2020)

Question 15. What is solenoid? Draw the pattern of magnetic field lines of
(i) a current carrying solenoid and
(ii) a bar magnet.
List two distinguishing features between the two fields. (Delhi 2019)

Question 16. What are magnetic field lines? List three characteristics of these lines. Describe in brief an activity to study the magnetic field lines due to a current carrying circular oil. (Board Term I, 2017, 2016)

Question 17. Draw the magnetic field lines through and around a single loop of wire carrying electric current. (2/5, Board Term I, 2016)

Question 18.What is a solenoid? Draw a diagram to show field lines of the magnetic field through and around a current carrying solenoid. State the use of magnetic field produced inside a solenoid. List two properties of magnetic lines of force. (Board Term I, 2015)

Question 19. State the effect of a magnetic field on the path of a moving charged particle. (Board Term I, 2014)

Question 20. State the direction of magnetic field in the following case.

Question 21. Write one application of Flemings left hand rule. (1/3, Board Term I, 2013)

Question 22. 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.
(iv) If initially this force was acting from right to left, how will the direction of force change if:
(a) direction of magnetic field is reversed?
(b) direction of current is reversed? (Board Term I, 2017)

Question 23. State whether an alpha particle will experience any force in a magnetic field if (alpha particles are positively charged particles)
(i) it is placed in the field at rest.
(ii) it moves in the magnetic field parallel to field lines.

(iii) it moves in the magnetic field perpendicular to field lines.
Justify your **Answer** in each case. (Board Term I, 2016)

Question 24. 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. Name the rule which determines the direction of this force. (Board Term I, 2016)

Question 25. (a) State Flemings left hand rule.
(b) Write the principle of working of an electric motor.
(c) Explain the function of the following parts of an electric motor.
(i) Armature (ii) Brushes (iii) Split ring (2018)

Question 26. The change in magnetic field lines in a coil is the cause of induced electric current it. Name the underlying phenomenon. (2020)

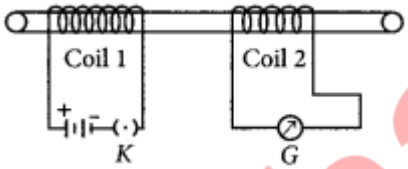
Question 27. Define the term induced electric current. (2020)

Question 28. Flemings Right-hand rule gives
(a) magnitude of the induced current.
(b) magnitude of the magnetic field.
(c) direction of the induced current.
(d) both, direction and magnitude of the induced current. (2020)

Question 29. What is the function of a galvanometer in a circuit? (Delhi 2019)

Question 30. Write any one method to induce current in a coil. (Board Term I, 2016)

Question 31. Two coils of insulated copper wire are wound over a non-conducting cylinder as shown. Coil 1 has comparatively large number of turns. State your observations, when



(i) Key K is closed
(ii) Key K is opened
Give reason for each of your observations. (2020)

Question 32. Two circular coils P and Q are kept close to each other, of which coil P carries a current. What will you observe in the galvanometer connected across the coil Q
(a) if current in the coil P is changed?
(b) if both the coils are moved in the same direction with the same speed?
Give reason to justify your **Answer** in each

Question 33. In Faradays experiment if instead of moving the magnet towards the coil we move the coil towards the magnet. Will there be any induced current? Justify your **Answer**. Compare the two cases. (Board Term I, 2017)

Question 34. Write one application of Fleming's right hand rule. (1/3, Board Term I, 2013)

Question 35. (a) A coil of insulated copper wire is connected to a galvanometer. With the help of a labelled diagram state what would be seen if a bar magnet with its south pole towards one face of this coil is
(i) moved quickly towards it,
(ii) moved quickly away from it,

(iii) placed near its one face?
(b) Name the phenomena involved in the above cases.
(c) State Fleming's right hand rule. (Board Term I, 2017)

Question 36. Write the frequency of alternating current (AC) in India. How many times per second it changes its direction? (Board Term I, 2015)

Question 37. How is the type of current that we receive in domestic circuit different from the one that runs a clock? (Board Term I, 2014)

Question 38. Define alternating current and direct current.
Explain why alternating current is preferred over direct current for transmission over long distances. (Board Term I, 2014)

Question 39. (i) Alternating current has a frequency of 50 Hz. What is meant by this statement? How many times does it change its direction in one second? Give reason for your **Answer**.
(ii) Mention the frequency of D.C that is given by a cell. (Board Term I, 2013)

Question 40. At the time of short circuit, the electric current in the circuit.
(a) vary continuously (b) does not change
(c) reduces substantially
(d) increases heavily. (2020)

Question 41. Mention and explain the function of an earth wire. Why it is necessary to earth metallic appliances? (Board Term I, 2013)

Question 42. Give reason for the following :
The burnt out fuse should be replaced by another fuse of identical rating. (1/3, 2020)

Question 43. Give reasons for the following:
(a) It is dangerous to touch the live wire of the main supply rather than neutral wire.
(b) In household circuit, parallel combination of resistances is used.
(c) Using fuse in a household electric circuit is important. (Board Term I, 2017)

Question 44. (a) Fuse acts like a watchman in an electric circuit. Justify this statement.
(b) Mention the usual current rating of the fuse wire in the line to (i) lights and fans (ii) appliance of 2 kW or more power. (Board Term I, 2014)

Question 45. (a) State Fleming's Left-hand rule.
(b) List three characteristic features of the electric current used in our homes.
(c) What is a fuse? Why is it called a safety device?
(d) Why is it necessary to earth metallic electric appliances? (2020)

Question 46. (a) Name two safety measures commonly used in an electric circuit and appliances.
(b) What precaution should be taken to avoid the overloading of domestic electric circuits? (Board Term I, 2017)

Question 47. (a) Draw a schematic diagram of a common domestic circuit showing provision of
(i) Earth wire, (ii) Main fuse
(iii) Electricity meter and
(iv) Distribution box.
(b) Distinguish between short circuiting and overloading. (Board Term I, 2015)