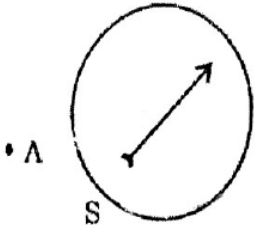
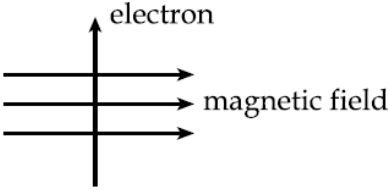


X Science Questions From CBSE Examination Papers Ch: Magnetic Effect of currents

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| 1) | What is a solenoid ? Draw the pattern of magnetic field lines of a solenoid through which a steady current flows. | |
| 2) | What are permanent magnet and electromagnet ? Give two uses of each. | 2 |
| 3) | Differentiate overloading and short circuiting. | 2 |
| 4) | Draw the pattern of magnetic field lines of the field produced by a current carrying circular loop. | 2 |
| 5) | Draw a diagram to show how a magnetic needle deflects when it is placed above or below a straight conductor carrying current depending on the direction of the current in the conductor. | 3 |
| 6) | (a) Describe an activity to draw a magnetic field line outside a bar magnet from one pole to another. (b) List any two properties of magnetic field lines. | 3 |
| 7) | Explain two ways to induce current in a coil. When is the induced current produced highest ? State the rule used to find direction of Induced current. | 3 |
| 8) | What are the factors on which magnetic field produced by a current carrying straight conductor depend. State the rule which gives the direction of magnetic field. | 3 |
| 9) | Draw a diagram to show how a magnetic needle deflects when it is placed above or below a straight conductor carrying current depending on the direction of the current in the conductor. | 3 |
| 10) | (a) What is a Solenoid ? (b) Draw the field lines of the magnetic field through and around a current carrying solenoid. (c) Compare the field pattern with magnetic field around a bar magnet. | 5 |
| 11) | (a) Which rule helps to find the force on a current carrying conductor in a magnetic field ? (b) State the rule. (c) Name the three factors on which the force on the current carrying conductor depend. | |
| 12) | Describe in short an activity to (i) demonstrate the pattern of magnetic field lines around a straight current carrying conductor, and (ii) find the direction of magnetic field produced for a given direction of current in the conductor. Name and state the rule to find the direction of magnetic field associated with a current carrying conductor. Apply this rule to determine the direction of the magnetic field inside and outside a current carrying circular loop lying horizontally on a table. Assume that the current through the loop in anticlockwise | 5 |
| 13) | (a) Describe an experiment with a diagram to show that force is exerted on a current carrying conductor when placed perpendicular in a magnetic field. (b) How will this force change if current in the conductor is increased (c) Name a device that uses the above principle | |
| 14) | (a) what is a solenoid ? Draw the pattern of magnetic field lines around a current carrying solenoid. (b) what is the pattern of field lines inside a solenoid? What do they indicate ? (c) How is the magnetic field produced in a solenoid used ? | |

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| 1) | What is the role of fuse, used in series with any electrical appliance ? Why should a fuse with defined rating not be replaced by one with a larger rating ?” |
| 2) | A magnetic compass shows a deflection when placed near a current carrying wire. How will the deflection of the compass get affected if the current in the wire is increased ? Support your answer with a reason. |
| 3) | No two magnetic field lines can intersect each other. Explain. |
| 4) | <p>A magnetic compass needle is placed in the plane of paper near point A as shown in the Figure. In which plane should a straight current carrying conductor be placed so that it passes through A and there is no change in the deflection of the compass ? Under what condition is the deflection maximum and why ?</p>  |
| 5) | What does the direction of thumb indicate in the right-hand thumb rule ? In what way this rule is different from Fleming’s left-hand rule ? |
| 6) | Why does a current carrying conductor kept in a magnetic field experience force ? On what factors does the direction of this force depend ? Name and state the rule used for determination of direction of this force. |
| 7) | <p>(a) Explain an activity to show that a current carrying conductor experiences a force when placed in a magnetic field.</p> <p>(b) State the rule which given the direction of force acting on the conductor.</p> <p>(c) An electron moves perpendiculars to a magnetic field as shown in the figure. What would be the direction of force experienced on the electron ?</p>  |
| 8) | <p>(a) What is a solenoid</p> <p>(b) Draw the pattern of magnetic field formed around a current carrying solenoid. Compare this field to that of a bar magnet.</p> <p>(c) Explain What is Short circuiting and over loading in electric supply ?</p> |
| 9) | Explain with the help of a labelled 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 turns the field produced at any point is n times as large as that produced by a single turn ? |
| 10) | Describe the activity that shows that a current - carrying conductor experiences a force perpendicular to its length and the external magnetic field. How does Fleming’s left hand rule help us to find the direction of the force acting on the current carryi conductor ? |

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| 1) | Two circular coils A and B are placed close to each other. If the current in the coil A is changed, will some current be induced in the coil B ? Give reasons. | 2 |
| 2) | What precautions should be taken to avoid the overloading of domestic electric circuits ? | |
| 3) | <p>An electron enters a uniform magnetic field at right angles to it as shown in the figure below. In which direction will this electron move? State the rule applied by you in finding the direction of motion of the electron.</p> <div style="text-align: center;"> </div> | 2 |
| 4) | What is meant by the term magnetic field lines ? List any two properties of magnetic field lines. | 2 |
| 5) | Give an activity to show magnetic field produced by a current carrying circular coil. | 3 |
| 6) | <p>(a) What is the function of earth wire in electrical instruments ? Why is it necessary to earth the metallic electric appliances.</p> <p>(b) Explain what is short circuiting and overloading in an electric supply.</p> | 5 |
| 7) | <p>(a) A positively charged particle projected towards west is deflected towards north by a magnetic field. What is the direction of the magnetic field ?</p> <p>(b) Draw the magnetic field lines of the field produced due to a current carrying circular loop.</p> <p>(c) State the law used to find the direction of magnetic field around a straight current carrying conductor.</p> | 5 |
| 8) | <p>(a) State Flemings left hand rule. With a labelled diagram.</p> <p>(b) A coil of insulated copper wire is connected to a galvanometer. What happens if a bar magnet is</p> <p>(i) pushed into the coil</p> <p>(ii) withdrawn from inside the coil</p> <p>(iii) held stationary inside the coil</p> | |
| 9) | <p>(a) Which effect of the electric current is utilised in the working of an electrical fuse?</p> <p>(b) A fuse is connected in series or in parallel in household circuit ?</p> <p>(c) Draw a schematic labelled diagram of a domestic circuit which has a provision of a main fuse, meter, one light bulb and a switch/ Socket.</p> | |
| 10) | <p>Answer the following questions</p> <p>(i) Why do we connect earth wire in a house ? Give two reasons.</p> <p>(ii) What type of current is used in house hold supply ?</p> <p>(iii) What type of current is given by a cell ?</p> <p>(iv) To which wire do you connect fuse-wire in a house hold circuit ?</p> | 5 |

X Science Questions From CBSE Examination Papers Ch: Magnetic Effect of currents

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| 1) | Write four properties of magnetic lines of forces. |
| 2) | <p>A student while studying the force experienced by a current carrying conductor in a magnetic field records the following observations :</p> <p>(i) The force experienced by the conductor increases as the current is increased</p> <p>(ii) The force experienced by the conductor decreases as the strength of the magnetic field is increased</p> <p>Which of the two observations is correct and why?</p> |
| 3) | <p>How will the magnetic field Produced in a current carrying a circular coil change if we</p> <p>(i) Increase the value of current.</p> <p>(ii) Increase the distance from the coil</p> <p>(iii) Increase the no. of turns of the coil</p> |
| 4) | Explain the magnetic effects of current for Oersted's experiment with the help of labelled diagram. |
| 5) | A coil made of insulated copper wire is connected to a galvanometer. What will happen to the deflection of the galvanometer if a bar magnet is pushed in to the coil and then pulled out of it ? Give reason for your answer and name the phenomenon involved. |
| 6) | <p>(a) Two circular coils A and B are placed closed to each other. If the current in the coil A is changed, will some current be induced in coil B? Give reason.</p> <p>(b) State the rule to determine the direction of a :</p> <p>(i) magnetic field produced around a straight conductor - carrying current.</p> <p>(ii) force experienced by a current carrying straight conductor placed in a magnetic field, which is perpendicular to it.</p> <p>(iii) current induced in a coil due to its rotation in a magnetic field.</p> |
| 7) | <p>Briefly explain an activity to plot the magnetic field lines around a straight current carrying conductor. Sketch the field pattern for the same, specifying current and field directions.</p> <p>What happens to this field,</p> <p>(i) if the strength of the current is decreased ?</p> <p>(iii) if the direction of the current is reversed ?</p> |
| 8) | <p>(a) When is the force experienced by a current carrying conductor placed in a magnetic field largest ?</p> <p>(b) A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar magnet is :</p> <p>(i) pushed into the coil.</p> <p>(ii) withdrawn from inside the coil.</p> <p>(iii) held stationary inside the coil.</p> |

X Science Questions From CBSE Examination Papers Ch: Magnetic Effect of currents

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| 1) | State Fleming's left hand rule. A positively charged particle projected towards west is deflected towards North by a magnetic field. Find the direction of magnetic field. | 2 |
| 2) | A coil of insulated wire is connected to a galvanometer. What would be seen if a bar magnet with its south pole towards one face of the coil is : (a) Moved quickly toward it ? (c) Placed near its one face ? (b) Moved quickly away from it ? (d) Name the phenomena involved ? | 2 |
| 3) | What is the function of an earth wire ? Why is it necessary to earth metallic appliances. | |
| 4) | How does the strength of the Magnetic field at the centre of a circular coil of a wire depend on (a) radius of the coil (b) number of turns of wire in the coil | 2 |
| 5) | What happens to the deflection of the compass needle placed at a point near current carrying straight conductor (a) If the current is increased. (b) If the direction of current in the conductor is changed. (c) If compass is moved away from the conductor. | 3 |
| 6) | Draw a figure of current carrying solenoid and show magnetic field lines inside and outside it. Compare the pattern of the field with the magnetic field around a bar magnet. | 3 |
| 7) | State Fleming's Right hand rule. Give one application of this rule. What is SI unit of induced current ? | 3 |
| 8) | Briefly explain an activity to plot the magnetic field lines around a bar magnet. Sketch the field pattern for the same specifying field directions. A region 'A' has magnetic field lines relatively closer than another region 'B'. Which region has stronger magnetic field ? Give reason to support your answer. | |
| 9) | Answer the following questions : (i) What is the direction of magnetic field lines outside a bar-magnet ? (ii) What is SI unit of magnetic field ? (iii) What does crowding of magnetic field lines indicate ? (iv) What is the frequency of A.C. in India ? (v) Name two organs in the human body where magnetic field is quite significant. | |