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Worksheet: Magnetic Effects of Electric Current

1. If field lines of a magnetic field are crossed at a point, what does it indicate ?
2. State the factors on which strength of magnetic field at a point due to a current carrying conductor depends?
3. List three methods of producing a magnetic field.
4. Why do not two magnetic field lines intersect each other?
5. When does an electric short circuit occur?
6. Why is the earth pin thicker and longer than the live and the neutral pins?
7. What is an electromagnet? Write two uses of an electromagnet?
8. Explain why alternating current is preferred over direct current for transmission over long distances.
9. Imagine that you are sitting in a chamber with your back to one wall. An electron beam, moving horizontally from back wall towards the front wall, is deflected by a strong magnetic field to your right side. What is the direction of magnetic field?
10. At the time of short circuit, the current in the circuit (a) reduces substantially. (b) does not change. (c) increases heavily. (d) vary continuously
11. Why does a compass needle get deflected when brought near a bar magnet?
12. When is the force experienced by a current-carrying conductor placed in magnetic field largest?
13. List two methods of producing magnetic fields.
14. Why does a compass needle deflect when brought near a bar magnet?
15. State the effect of a magnetic field on the path of a moving charged particle.
16. What precaution should be taken to avoid the overloading of the domestic electric circuit?
17. Which of the following correctly describes the magnetic field near a long straight wire? (a) The field consists of straight lines perpendicular to the wire. (b) The field consists of straight lines parallel to the wire. (c) The field consists of radial lines originating from the wire. (d) The field consists of concentric circles centred on the wire
18. State and define S.I unit of magnetic field?
19. 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.

20. Mention and explain the function of an earth wire. Why it is necessary to earth metallic appliances?