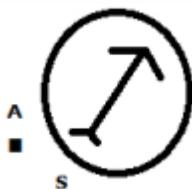


Class: 10
Subject: Magnetic effects of electric current
Topic:
No. of Questions: 20

- Q1. A proton enters in a straight line in a uniform magnetic field along the field direction. How will its path and velocity change?
- Q2. A positive charge is moving vertically upwards in magnetic field towards south. In which direction will it be deflected?
- Q3. Free electrons always keep on moving in the conductor. Even then no magnetic force acts on them in a magnetic field. Why?
- Q4. What is the nature of the magnetic field generated by a current carrying straight conductor?
- Q5. An electron and proton enter a uniform magnetic field perpendicular to the direction of the field with same velocity. Will the force on them be same?
- Q6. What is magnetic Lorentz force?
- Q7. Under what conditions electron moving in the uniform magnetic field experiences maximum force?
- Q8. Under what condition the force acting on the charge particle in the magnetic field of intensity B minimum?
- Q9. An electron is projected with its velocity in the direction of the magnetic field. Will its motion be affected?
- Q10. Why a solenoid tends to contract when current passes through it?
- Q11. A magnetic compass needle is placed in the plane of paper near point A as shown in 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?



- Q12. 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.
- Q13. Meena draws magnetic field lines of field close to the axis of a current carrying circular loop. As she moves away from the centre of the circular loop she observes that the lines keep on diverging. How will you explain her observation?
- Q14. Name four appliances wherein an electric motor, a rotating device that converts electrical energy to mechanical energy, is used as an important component. In what respect motors are different from generators?
- Q15. What is the difference between a direct current and an alternating current? How many times does AC used in India change direction in one second?
- Q16. If a region has a strong magnetic field, the magnetic field lines will be closely or widely spaced?
- Q17. 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.
- Q18. When we pass a current through _____, the magnetic field produced is similar to a bar magnet.
- Q19. Explain Direct and Alternating current
- Q20. State the principle of the working of an electric motor.