



St. Lawrence High School
A Jesuit Christian Minority Institution



Term : Test

Solution of Work Sheet – 1

Subject – Physical Science

Class – X

Date – 07.11.20

Chapter – Current Electricity

Topic – Magnetic effect of current

Choose the correct option for the following questions.

1 × 15 = 15

1. Chose the correct option

- A static charge can produce both magnetic and electric effect
- A static charge produces electric field and it may produce magnetic field
- A moving charge produces only magnetic field
- A moving charge produces both electric and magnetic field

Ans – d. A moving charge produces both electric and magnetic field

2. Magnetic effect of electric current was first proposed by scientist –

- Ampere
- Faraday
- Coulomb
- Oersted

Ans: d. Oersted

3. According to Oersted, a magnetic needle brought near a conducting wire will deflect, when –

- There is no current in the wire
- There is a flow of current in the wire
- The current through the wire continuously changes the direction
- None of these

Ans: There is a flow of current in the wire

4. If a person is assumed to swim along the direction of current and faces a magnetic needle, then –

- The N pole of the needle will deflect towards his right hand
- The S pole of the needle will deflect towards his right hand
- The S pole of the needle will deflect towards his left hand
- None of these

Ans: b. The S pole of the needle will deflect towards his right hand

5. In the above problem, if the person faces the needle and this time swims along the opposite direction of flow of current, then –

- The N pole of the needle will deflect towards his right hand
- The N pole of the needle will deflect towards his left hand
- The S pole of the needle will deflect towards his right hand
- None of these

Ans: The N pole of the needle will deflect towards his right hand

6. According to thumb rule –

- If the thumb of our any hand indicates the direction of current, then wrapped fingers will represent circular magnetic field around the current
- If the thumb of our left hand indicates the direction of current, then wrapped fingers will represent circular magnetic field around the current
- If the thumb of our left hand indicates the direction of magnetic field, then wrapped fingers will represent direction of the current

- d. If the thumb of our right hand indicates the direction of current, then wrapped fingers will represent circular magnetic field around the current

Ans: d.

7. Magnetic lines of force around a straight current carrying wire will be –
- Straight and perpendicular to the wire
 - Straight and parallel to the wire
 - Circular and intersecting around the wire
 - Concentric circular around the wire

Ans: d. Concentric circular around the wire

8. Magnetic lines of force circular coil will be –
- Straight exactly at the centre of the coil
 - Straight everywhere inside the coil
 - Straight everywhere outside the coil
 - Intersecting inside the coil

Ans: a. Straight exactly at the centre of the coil

9. The physical significance of magnetic lines of force is that -
- It indicates the direction of deflection of S-pole of a magnetic needle
 - It indicates the direction of deflection of N-pole of a magnetic needle
 - If these are closely spaced in a region, then magnetic field at that point will be strong
 - Both b. and c. are correct

Ans: d. Both b. and c. are correct

10. In Oersted's experiment, if the current through the straight wire is increased, then the deflection of the magnetic needle will be
- More
 - Less
 - Same as before.
 - Can not be predicted

Ans: a. more

11. In Oersted's experiment, if the current carrying wire is coated with plastic, then -
- there will be no deflection if the needle
 - the deflection will be in the reverse manner
 - deflection will be same as before
 - none of these

Ans: c. deflection will be same as before

12. In Oersted's experiment, if an aluminum wire (which is not attracted by magnet) is used to carry current, then -
- There will be no deflection
 - the deflection will be in the reverse manner
 - deflection will be same as in case of any iron wire
 - none of these

Ans: c. deflection will be same as in case of any iron wire

13. If the current through a straight current carrying wire is increased, then
- Number of circular magnetic lines of force will increase
 - Number of circular magnetic lines of force will decrease

- c. There will be no change in the number of lines of force
- d. The direction of lines of force will be reversed

Ans: a. Number of circular magnetic lines of force will increase

14. If the current through a straight conductor is reversed, then
- a. Number of circular magnetic lines of force will increase
 - b. Number of circular magnetic lines of force will decrease
 - c. There will be no change in the number of lines of force
 - d. The direction of lines of force will be reversed

Ans: d. The direction of lines of force will be reversed

15. Certain amount of current is flowing through a straight conducting wire and circular magnetic lines of force are generated around it. If now, keeping everything same, the wire is stretched to make its length double, then –
- a. Number of circular lines of force per unit length will increase
 - b. Number of circular lines of force per unit length will decrease
 - c. Number of circular lines of force per unit length will remain same
 - d. Nothing can be said

Ans: b. Number of circular lines of force per unit length will decrease

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