St. Lawrence High School

A Jesuit Christian Minority Institution

Term : Pre – Test

Solution of Work Sheet – 20

Class – X | Subject – Physical Science | Date – 22.06.20

Chapter – Current Electricity | Topic – Magnetic effect of current

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Choose the correct option for the following questions. $1 \times 15 = 15$

1. Magnetic effect of electric current was first proposed by scientist –
   a. Ampere
   b. Faraday
   c. Coulomb
   d. Oersted

   Ans: d. Oersted
2. According to Oersted, a magnetic needle brought near a conducting wire will deflect, when –
   a. There is no current in the wire
   b. There is a flow of current in the wire
   c. The current through the wire continuously changes the direction
   d. None of these

   Ans: There is a flow of current in the wire
3. If a person is assumed to swim along the direction of current and faces a magnetic needle, then –
   a. The N pole of the needle will deflect towards his right hand
   b. The S pole of the needle will deflect towards his right hand
   c. The S pole of the needle will deflect towards his left hand
   d. None of these

   Ans: b. The S pole of the needle will deflect towards his right hand
4. In the above problem, if the person faces the needle and this time swims along the opposite direction of flow of current, then –
   a. The N pole of the needle will deflect towards his right hand
   b. The N pole of the needle will deflect towards his left hand
   c. The S pole of the needle will deflect towards his right hand
   d. None of these

   Ans: The N pole of the needle will deflect towards his right hand
5. According to thumb rule –
   a. If the thumb of our any hand indicates the direction of current, then wrapped fingers will represent circular magnetic field around the current
   b. If the thumb of our left hand indicates the direction of current, then wrapped fingers will represent circular magnetic field around the current
   c. 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.

6. Magnetic lines of force around a straight current carrying wire will be –
    a. Straight and perpendicular to the wire
    b. Straight and parallel to the wire
    c. Circular and intersecting around the wire
    d. Concentric circular around the wire
    Ans: d. Concentric circular around the wire
7. Magnetic lines of force circular coil will be –
    a. Straight exactly at the centre of the coil
    b. Straight everywhere inside the coil
    c. Straight everywhere outside the coil
    d. Intersecting inside the coil
    Ans: a. Straight exactly at the centre of the coil
8. Looking perpendicular on a loop from one side, the current is found to be clockwise, then –
    a. N pole will be generated on that side of the coil
    b. S pole will be generated on the opposite side of the coil
    c. N pole will be generated on the opposite side of the coil
    d. None of these
    Ans: c. N pole will be generated on the opposite side of the coil
9. Looking perpendicular on a loop from one side, the current is found to be anti clockwise, then –
    a. N pole will be generated on that side of the coil
    b. S pole will be generated on that side of the coil
    c. N pole will be generated on the opposite side of the coil
    d. None of these
    Ans: a. N pole will be generated on that side of the coil
10. In Fleming's left hand rule, thumb of the left hand indicates –
    a. Magnetic field
    b. Direction of current
    c. Deflection of magnetic needle
    d. None of these.
    Ans: d. None of these.
11. If N pole of a magnetic needle is repelled by a circular loop, then the current at that face of the loop can be –
    a. Clock wise only
    b. Anti clockwise only
    c. Both Clock wise or Anti clockwise
    d. None of these
    Ans: b. Anti clockwise only
12. If S pole of a magnetic needle is attracted by a circular loop, then the current at that face of the loop can be –
    a. Clock wise only
    b. Anti clockwise only
    c. Both Clock wise or Anti clockwise
    d. None of these
    Ans: b. Anti clockwise only
13. The motion of a coil of a d.c. motor obeys, -
    a. Ampere's swimming rule
    b. Right hand thumb rule
    c. Fleming's right hand rule
    d. Fleming's left hand rule
    Ans: Fleming's left hand rule

14. 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
15. Electric motors work under the principle of –
    a. Electromagnetic induction
    b. Fleming's right hand rule
    c. Lenz's law
    d. Conversion of electrical energy to mechanical energy

    Ans: d. Conversion of electrical energy to mechanical energy

Name of the teacher – Soumitra Maity