# RAVI MATHS TUITION CENTER , CHENNAI- 82. WHATSAPP - 8056206308

## Magnetic Effects Of Electric Current T1

10th Standard

Science

16 x 1 = 16

1) The magnetic field inside a long straight solenoid-carrying current

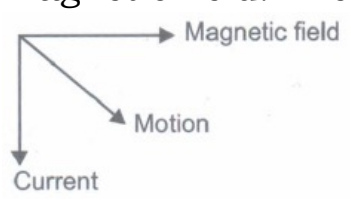
(a) is zero (b) decrease as we move towards its end (c) increases a swe move towards its end

(d) is the same at all points.

2) Which of the following property of a proton can change while it moves freely in a magnetic field ?

(a) mass (b) speed (c) velocity (d) momentum

3) A positively charged particle (alpha-particle) projected towards west is deflected towards north by a magnetic field. The direction of magnetic field is




(a) towards south (b) towards east (c) downward (d) upward

4) A rectangular coil of copper wire is rotated in a magnetic field. The direction of the induced current changes once in each

(a) Two revolutions (b) One revolution (c) Half revolution (d) One-fourth revolution

5) 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.

6) The phenomenon of electromagnetic induction is

(a) the process of charging a body.

(b) the process of generating magnetic field due to a current passing through a coil.

(c) producing induced current in a coil due to relative motion between a magnet and the coil.

(d) the process of rotating a coil of an electric motor.

7) The device used for producing electric current is called a

(a) generator (b) galvanometer (c) ammeter (d) motor

8) The essential difference between an AC generator and a DC generator is that

(a) AC generator has an electromagnet while a DC generator has permanent magnet.

(b) DC generator will generate a higher voltage. (c) AC generator will generate a higher voltage

(d) AC generator has slip rings while the DC generator has a commutator.

9) At the time of short circuit, the current in the circuit

(a) reduces substantially (b) does not change (c) increases heavily (d) vary continuously

10) Choose the incorrect statement from the following regarding magnetic lines of field.

(a) The direction of magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points.

(b) Magnetic field lines are closed curves

(c) if magnetic field lines are parallel and equidistant, they represent zero field strength

(d) Relative strength of magnetic field is shown by the degree of closeness of the field lines.

11) Commercial electric motors do not use

(a) An electromagnet to rotate the armature

(b) Effectively large number of turns of conducting wire in the current carrying coil

(c) A permanent magnet to rotate the armature (d) A soft iron core on which the coil is wound

12) The strength of magnetic field inside a long current carrying straight solenoid is

(a) More at the ends than at the centre (b) Minimum in the middle (c) Same at all points

(d) Found to increase from one end to the other.

13) The most important safety method used for protecting home appliances from short circuiting or overloading is

(a) Earthing (b) Use of fuse (c) Use of stabilisers (d) Use of electric meter.

14) The core of an electromagnet must be of

(a) soft iron (b) hard iron (c) rusted iron (d) none of the above

15) The right-hand thumb rule is stated by

(a) Oersted (b) Maxwell (c) Fleming (d) none of the above

16) The condition necessary for electromagnetic induction is that

(a) there must be a relative motion between the coil of wire and galvanometer.

(b) there must be a relative motion between the coil of wire and a magnet.

(c) there must be a relative motion between the galvanometer and a magnet (d) all of the above.

4 x 1 = 4

17) **Assertion:** Electricity and magnetism are related phenomena.

**Reason:** A magnet gets deflected when an electric current passed through a metallic wire placed nearby.

**Codes**

(a) If both assertion and reason are true and the reason is correct explanation of assertion.

(b) If both assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true and reason is false.

(d) If both assertion and reason are false.

18) **Assertion:** Solenoid is like a bar magnet.

**Reason:** One end of the solenoid behaves as a magnetic north pole, while the other behaves as the south pole.

**Codes**

(a) If both assertion and reason are true and the reason is correct explanation of assertion.

(b) If both assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true and reason is false.

(d) If both assertion and reason are false.

19) **Assertion:** Electrical appliances are connected parallel to each other.

**Reason:** In order that each appliance has equal potential difference.

**Codes**

(a) If both assertion and reason are true and the reason is correct explanation of assertion.

(b) If both assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true and reason is false.

(d) If both assertion and reason are false.

20) **Assertion:** Magnets are used to generate electricity.

**Reason:** Electric current flowing through a wire produces magnetic effect.

**Codes**

(a) If both assertion and reason are true and the reason is correct explanation of assertion.

(b) If both assertion and reason are true but reason is not a correct explanation of assertion.

(c) If assertion is true and reason is false.

(d) If both assertion and reason are false.

6 x 2 = 12

21) Name some devices in which electric motors are used .

22) When does an electric short circuit occur?

23) What is the function of an earth wire ? Why is its necessary to earth metallic appliances?

24) What is an electric fuse? What material is selected for fuse wire?

25) State one main difference between AC. and D.e. Why AC. is preferred over D.C. for long range transmission of electric power? Name one source each of D.C. and AC

26) State the consequences that can lead to a short circuit. Or One of the major cause of fire in office building is short circuiting. List three factors which may lead to the short circuit.

6 x 3 = 18

27) List the properties of magnetic lines of force.

28) Consider a circular loop of wire lying in the plane of the table. Let the current pass through the loop clockwise. Apply the right hand rule to find out the direction of the magnetic field inside and outside the loop.

29) Explain different ways to induce current in a coil.

30) What is short circuiting? State one factor/condition that can lead to it. Name a device in the household that acts as a safety measure for it. State the principle of its working

31) A compass needle is placed near a current-carrying wire. State your observation for the following cases, and give reason for the same in each case.
(a) Magnitude of electric current in the wire is increased.
(b) The compass needle is displaced away from the wire

32) The magnetic field associated with a current-carrying straight conductor is in anticlockwise direction. If the conductor was held along the east-west direction, what will be the direction of current through it? Name and state the rule applied to determine the direction of current.