

## Magnetic Effects of Electric Current

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Question 1.

Assertion: Steel core is used as an electromagnet.

Reason: Steel gets permanently magnetised when the current flows through the coil wound around.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.
- (e) Both A and R are false.

▼ [Answer](#)

(d) A is false but R is true.

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Question 2.

Magnetic lines of force inside current carrying solenoid are

- (a) perpendicular to axis.
- (b) along the axis and are parallel to each other.
- (c) parallel inside the solenoid and circular at the ends.
- (d) circular.

▼ [Answer](#)

(c) parallel inside the solenoid and circular at the ends.

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Question 3.

What should be the core of an electromagnet?

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

▼ [Answer](#)

(a) soft iron

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Question 4.

Who has stated the Right hand Thumb Rule?

- (a) Orsted
- (b) Fleming
- (c) Einstein
- (d) Maxwell

▼ [Answer](#)

(d) Maxwell

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Question 5.

The device used for producing electric current is called

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

▼ Answer

(a) generator

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Question 6.

To convert an AC generator into DC generator

- (a) split-ring type commutator must be used
- (b) slip rings and brushes must be used
- (c) a stronger magnetic field has to be used
- (d) a rectangular wire loop has to be used

▼ Answer

(a) split-ring type commutator must be used

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Question 7.

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 stabilizers
- (d) use of electric meter

▼ Answer

(b) use of fuse

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Question 8.

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

▼ Answer

(d) the direction of magnetic field is vertically upward.

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Question 9.

If the current values periodically from zero to a maximum value, back to zero and then reverses its direction, the current is

- (a) direct
- (b) alternative
- (c) pulsating
- (d) none of the above

▼ Answer

(b) alternative

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Question 10.

We can induce the current in a coil by

- (a) moving the coil in a magnetic field
- (b) by changing the magnetic field around it

- (c) by changing the orientation of the coil in the magnetic field
- (d) All of above

▼ Answer

- (a) moving the coil in a magnetic field
- 

Question 11.

Forces acting on a stationary charge in the magnetic field B is

- (a)  $BQv$
- (b)  $BQ/v$
- (c)  $Bv/Q$
- (d) zero

▼ Answer

- (d) zero
- 

Question 12.

A current through a horizontal power line flows from south to North direction. The direction of magnetic field line 0.5m above it is

- (a) North
- (b) South
- (c) West
- (d) East

▼ Answer

- (a) North
- 

Question 13.

A D.C generator works on the principle of

- (a) Ohm's law
- (b) Joule's law of heating
- (c) Faraday's law of electromagnetic induction.
- (d) none of the above

▼ Answer

- (c) Faraday's law of electromagnetic induction.
- 

Question 14.

A soft iron bar is introduced inside the current carrying solenoid. The magnetic field inside the solenoid

- (a) will decrease
- (b) will remain same
- (c) will increase
- (d) will become zero

▼ Answer

- (c) will increase
- 

Question 15.

In the domestic electric circuits, the red coloured insulated copper wire is called

- (a) Neutral wire
- (b) Fuse wire

- (c) Live wire
- (d) Earthing wire

▼ [Answer](#)

- (c) Live wire
- 

Question 16.

When current is parallel to magnetic field, then force experience by the current carrying conductor placed in uniform magnetic field is

- (a) Twice to that when angle is  $60^\circ$
- (b) Thrice to that when angle is  $60^\circ$
- (c) zero
- (d) infinite

▼ [Answer](#)

- (a) Twice to that when angle is  $60^\circ$
- 

Question 17.

The factors on which one magnetic field strength produced by current carrying solenoids depends are

- (a) Magnitude of current
- (b) Number of turns
- (c) Nature of core material
- (d) All of the above

▼ [Answer](#)

- (d) All of the above
- 

Question 18.

In electric motor, to make the coil rotating continuously in the same direction, current is reversed in the coil after every half rotation by a device called

- (a) carbon brush
- (b) commutator
- (c) slip ring
- (d) armature

▼ [Answer](#)

- (b) commutator
- 

Question 19.

A positively charged particle say an alpha particle projected towards west is deflected toward north by a magnetic field. The direction of the magnetic field is

- (a) Upward
- (b) downward
- (c) towards south
- (d) towards east.

▼ [Answer](#)

- (d) towards east.
- 

Question 20.

The instrument that use to defect electric current in the circuit is known as

- (a) electric motor
- (b) A.C generator
- (c) galvanometer
- (d) none of the above

▼ [Answer](#)

- (a) electric motor
- 

Question 21.

A positive charge is moving upwards in a magnetic field directed towards north. The particle will be deflected towards

- (a) west
- (b) north
- (c) south
- (d) east

▼ [Answer](#)

- (a) west
- 

Question 22.

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

- (a) vary continuously
- (b) reduced considerably
- (c) increases heavily
- (d) does not change

▼ [Answer](#)

- (c) increases heavily
- 

Question 23.

The magnetic field near a long straight wire is described by

- (a) Straight field lines parallel to the wire.
- (b) Straight field lines perpendicular to the wire.
- (c) Connective circle centered on the wire.
- (d) Radial field lines starting from the wire.

▼ [Answer](#)

- (c) Connective circle centered on the wire.
- 

Question 24.

By which instrument, the presence of magnetic field be determined?

- (a) Magnetic Needle
- (b) Ammeter
- (c) Galvanometer
- (d) Voltmeter

▼ [Answer](#)

- (d) Voltmeter
- 

Question 25.

Inside the magnet, the field lines moves

- (a) from north to south

- (b) from south the north
- (c) away from south pole
- (d) away from north pole

▼ [Answer](#)

- (a) from north to south
- 

Question 26.

Assertion: It is fatal to touch a live electric wire as the person gets a severe electric shock. In some cases, electric shock can even kill a person.

Reason: The electric current passes through the body to the earth forming a circuit and burns the blood.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.
- (e) Both A and R are false.

▼ [Answer](#)

- (a) Both A and R are true and R is the correct explanation of A.
- 

Question 27.

Assertion: Strength of an electromagnet depends on the magnitude of current flowing through them.

Reason: Electromagnets are majorly used for lifting heavy weights.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.
- (e) Both A and R are false.

▼ [Answer](#)

▼ Details

- (b) Both A and R are true but R is not the correct explanation of A.
- 

Question 28.

Which device produces the electric current?

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

▼ [Answer](#)

- (a) generator
- 

Question 29.

The essential difference between A.C. generator and a D.C. generator is that

- (a) A.C. generator has an electromagnet while a D.C. generator has permanent magnet.
- (b) D.C. generator will generate a higher voltage
- (c) A.C. generator will generate a higher voltage
- (d) A.C. generator has slip rings while the D.C. generator has commutator.

▼ [Answer](#)

(d) A.C. generator has slip rings while the D.C. generator has commutator.

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Question 30.

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

▼ [Answer](#)

- (c) a permanent magnet to rotate the armature
- 

Question 31.

Overloading is due to

- (a) Insulation of wire is damaged
- (b) fault in the appliances
- (c) accidental hike in supply voltage
- (d) All of the above

▼ [Answer](#)

- (d) All of the above
- 

Question 32.

Which one 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 centered on the wire

▼ [Answer](#)

- (d) The field consists of concentric circles centered on the wire.
- 

Question 33.

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

▼ [Answer](#)

- (c) same at all points
- 

Question 34.

The main advantage of A.C power transmission over D.C power transmission over long distance is

- (a) AC transmit without much loss of energy
- (b) less insulation problem
- (c) less problem of instability
- (d) easy transformation.

▼ [Answer](#)

- (a) AC transmit without much loss of energy
-

Question 35.

The rectangular coil of copper wires is rotated in a magnetic field. The direction of induced current change once in each

- (a) one revolution
- (b) one fourth revolution
- (c) half revolution
- (d) two revolutions

▼ [Answer](#)

- (b) one fourth revolution
- 

Question 36.

The condition for the phenomenon of electromagnetic induction is that there must be a relative motion between

- (a) the galvanometer and magnet
- (b) the coil of wire and galvanometer
- (c) the coil of wire and magnet
- (d) the magnet and galvanometer

▼ [Answer](#)

- (c) the coil of wire and magnet
- 

Question 37.

Direction of rotation of a coil in electric motor is determined by

- (a) Fleming's right hand rule
- (b) Fleming's left hand rule
- (c) Faraday law of electromagnetic inductors
- (d) None of above

▼ [Answer](#)

- (b) Fleming's left hand rule
- 

Question 38.

Which of the following statement is not correct about the magnetic field?

- (a) Magnetic field lines form a continuous closed curve.
- (b) Magnetic field lines do not intersect each other.
- (c) Direction of tangent at any point on the magnetic field line curve gives the direction of magnetic field at that point.
- (d) Outside the magnet, magnetic field lines go from South to North pole of the magnet.

▼ [Answer](#)

- (d) Outside the magnet, magnetic field lines go from South to North pole of the magnet.
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Question 39.

A.C generator works on the principle of

- (a) force experienced by a conductor in magnetic field
- (b) electromagnetic induction
- (c) electrostatic

▼ [Answer](#)

- (d) force experienced by a charge particle in electric field.
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Question 40.

The most important safety device method used for protecting electrical appliances from short circuiting or overloading is

- (a) Earthing
- (b) use of stabilizer
- (c) use of electric meter
- (d) fuse

▼ [Answer](#)

- (d) fuse
- 

Question 41.

Small current in a circuit is detected by

- (a) Galvanometer
- (b) Solenoid
- (c) Voltmeter
- (d) Fleming's left hand rule

▼ [Answer](#)

- (a) Galvanometer
- 

Question 42.

Potential difference between a live wire and a neutral wire is

- (a) 200 volt
- (b) 150 volt
- (c) 210 volt
- (d) 220 volt

▼ [Answer](#)

- (d) 220 volt
- 

Question 43.

Which of the following factors affect the strength of force experience by a current carrying conduct in a uniform magnetic field?

- (a) magnetic field strength
- (b) magnitude of current in a conductor
- (c) length of the conductor within magnetic field
- (d) All of above

▼ [Answer](#)

- (d) All of above
- 

Question 44.

Electric motor converts

- (a) Mechanical energy into electrical energy
- (b) Mechanical energy into heat energy
- (c) Electrical energy into heat energy
- (d) Electrical energy into mechanical energy

▼ [Answer](#)

- (d) Electrical energy into mechanical energy
-

Question 45.

Fleming's left hand and Right hand rules are used in

- (a) Generator and electric motor
- (b) Electric motor and generator
- (c) any rule can be used for any device
- (d) both are not applied for generator and motor.

▼ [Answer](#)

- (b) Electric motor and generator
- 

Question 46.

A current carrying conductor placed in magnetic field experiences a force. The displacement of the conductor in magnetic field can be increased by

- (a) Decreasing the magnetic field.
- (b) Decreasing the current in the conductor.
- (c) Increasing the magnetic field.
- (d) None of the above.

▼ [Answer](#)

- (c) Increasing the magnetic field.
- 

Question 47.

Which of the following properties of a proton can change when it moves freely in a magnetic field

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

▼ [Answer](#)

- (c) velocity
- 

Question 48.

The pattern of the magnetic field produced by the straight current carrying conducting wire is

- (a) in the direction opposite to the current
- (b) in the direction parallel to the wire
- (c) circular around the wire
- (d) in the same direction of current

▼ [Answer](#)

- (a) in the direction opposite to the current
- 

Question 49.

The nature of magnetic field line passing through the centre of current carrying circular loop is

- (a) circular
- (b) ellipse
- (c) parabolic
- (d) straight line

▼ [Answer](#)

- (d) straight line
-

Question 50.

Magnetic Effect of Electric Current Class 10 MCQ Question 1. Magnetic effect of current was discovered by

- (a) Oersted
- (b) Faraday
- (c) Bohr
- (d) Ampere

▼ [Answer](#)

(a) Oersted

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Question 51.

A device for producing electric current is called a

- (a) Galvanometer
- (b) Motor
- (c) Generator
- (d) Ammeter

▼ [Answer](#)

(c) Generator

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