Magnetic Effects of Electric Current

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.

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.

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

Question 4.
Who has stated the Right hand Thumb Rule?
(a) Orsted
(b) Fleming
(c) Einstein
(d) Maxwell

▼ Answer

(d) Maxwell

Question 5.
The device used for producing electric current is called
(a) generator
(b) galvanometer
(c) ammeter
(d) motor

▼ Answer

(a) generator

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

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

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.

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

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 stationery charge of in the magnetic field B is
(a) BQ v
(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) ohnis 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 remains 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°
(b) Thrice to that when angle is 60°
(c) zero
(d) infinite

▼ Answer

(a) Twice to that when angle is 60°

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 bums 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 commentator.

▼ Answer

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

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 praenomen 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 line do not interest 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.

Question 39.
A.C generator works on the principle of
(a) force experience by a conductor in magnetic field
(b) electromagnetic induction
(c) electrostatic

▼ Answer

(d) force experience by a charge particle in electric field.

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

Question 51.
A device for producing electric current is called a
(a) Galvanometer
(b) Motor
(c) Generator
(d)Ammeter

▼ Answer

(c) Generator
