

## Chapter - 13

### Magnetic Effects of Electric Current

1. The magnetic field inside a current-carrying solenoid is:

- a) Zero
- b) Strong
- c) Weak
- d) Variable

Answer: b) Strong

2. The SI unit of magnetic field strength is:

- a) Tesla
- b) Ampere
- c) Volt
- d) Ohm

Answer: a) Tesla

3. The direction of the magnetic field inside a current-carrying solenoid is:

- a) From south to north
- b) From north to south
- c) Clockwise
- d) Anti-clockwise

Answer: b) From north to south

4. The device used to detect the presence and direction of a current in a circuit is called a:

- a) Transformer
- b) Capacitor
- c) Galvanometer
- d) Diode

Answer: c) Galvanometer

5. The phenomenon of a compass needle getting deflected when brought near a current-carrying wire is known as:

- a) Electromagnetic induction
- b) Electromotive force
- c) Magnetic induction
- d) Magnetic effect of electric current

Answer: d) Magnetic effect of electric current

6. The direction of the magnetic field produced around a straight current-carrying conductor is given by:

- a) Ampere's law
- b) Lenz's law
- c) Right-hand thumb rule
- d) Fleming's left-hand rule

Answer: c) Right-hand thumb rule

7. The phenomenon of the production of an induced current in a coil due to its own changing magnetic field is called:

- a) Electromagnetic induction
- b) Self-induction
- c) Mutual induction

d) Magnetic induction

Answer: b) Self-induction

8. The device used to increase or decrease the voltage of an alternating current is a:

a) Transformer

b) Generator

c) Motor

d) Inductor

Answer: a) Transformer

9. The type of current generated by a generator is:

a) Direct current

b) Alternating current

c) Galvanic current

d) Magnetic current

Answer: b) Alternating current

10. The process of generating electric current in a coil by moving a magnet inside or near it is called:

a) Electromagnetic induction

b) Electromotive force

c) Magnetic induction

d) Self-induction

Answer: a) Electromagnetic induction

11. The strength of the magnetic field around a straight current-carrying conductor depends on:

- a) Current flowing through the conductor
- b) Length of the conductor
- c) Distance from the conductor
- d) All of the above

Answer: d) All of the above

12. The phenomenon of a current-carrying wire experiencing a force in the presence of a magnetic field is known as:

- a) Electromagnetic induction
- b) Electromotive force
- c) Magnetic induction
- d) Magnetic effect of electric current

Answer: d) Magnetic effect of electric current

13. The device used to increase or decrease the current in an electric circuit is called a:

- a) Transformer
- b) Generator
- c) Motor
- d) Resistor

Answer: a) Transformer

14. The device used to convert mechanical energy into electrical energy is a:

- a) Generator
- b) Motor
- c) Transformer
- d) Resistor

Answer: a) Generator

15. The type of current produced by a battery is:

- a) Direct current
- b) Alternating current
- c) Galvanic current
- d) Magnetic current

Answer: a) Direct current

16. The direction of the magnetic field produced by a current-carrying conductor can be determined using:

- a) Ampere's law
- b) Lenz's law
- c) Right-hand thumb rule
- d) Fleming's left-hand rule

Answer: c) Right-hand thumb rule

17. The phenomenon of an electric current being induced in a coil due to the change in current in a nearby coil is called:

- a) Electromagnetic induction
- b) Self-induction
- c) Mutual induction
- d) Magnetic induction

Answer: c) Mutual induction

18. The device used to protect electrical circuits from excessive current is a:

- a) Resistor
- b) Capacitor
- c) Fuse
- d) Diode

Answer: c) Fuse

19. The direction of the induced current in a coil can be determined using:

- a) Ampere's law
- b) Lenz's law
- c) Right-hand thumb rule
- d) Fleming's left-hand rule

Answer: b) Lenz's law

20. The process of generating electricity using the principle of electromagnetic induction is used in:

- a) Power plants
- b) Generators
- c) Electric vehicles
- d) All of the above

Answer: d) All of the above

21. The SI unit of magnetic field intensity is:

- a) Coulomb
- b) Ampere
- c) Tesla
- d) Ohm

Answer: c) Tesla

22. The direction of the magnetic field lines around a current-carrying straight conductor is:

- a) Clockwise
- b) Anti-clockwise
- c) From south to north
- d) From north to south

Answer: b) Anti-clockwise

23. The magnetic field produced by a current-carrying circular loop of wire is:

- a) Uniform inside the loop
- b) Uniform outside the loop
- c) Stronger at the center of the loop
- d) Weaker at the center of the loop

Answer: c) Stronger at the center of the loop

24. The instrument used to detect the presence and strength of a magnetic field is called a:

- a) Galvanometer
- b) Ammeter
- c) Voltmeter
- d) Magnetometer

Answer: d) Magnetometer

25. The type of magnetism exhibited by iron is:

- a) Paramagnetism
- b) Diamagnetism

- c) Ferromagnetism
- d) Electromagnetism

Answer: c) Ferromagnetism

26. The phenomenon of a voltage being induced in a conductor due to its relative motion with a magnetic field is known as:

- a) Electromagnetic induction
- b) Electromotive force
- c) Magnetic induction
- d) Self-induction

Answer: a) Electromagnetic induction

27. The principle behind the working of an electric generator is:

- a) Lenz's law
- b) Ampere's law
- c) Faraday's law
- d) Ohm's law

Answer: c) Faraday's law

28. The type of current produced by a power plant is:

- a) Direct current
- b) Alternating current
- c) Galvanic current
- d) Magnetic current

Answer: b) Alternating current



29. The part of a generator that rotates inside a magnetic field is called the:

- a) Stator
- b) Rotor
- c) Armature
- d) Commutator

Answer: b) Rotor

30. The principle behind the working of an electric motor is:

- a) Lenz's law
- b) Ampere's law
- c) Faraday's law
- d) Ohm's law

Answer: a) Lenz's law

31. The strength of the magnetic field inside a current-carrying solenoid depends on:

- a) Number of turns in the solenoid
- b) Current passing through the solenoid
- c) Length of the solenoid
- d) All of the above

Answer: d) All of the above

32. The device used to convert electrical energy into mechanical energy is a:

- a) Generator
- b) Motor
- c) Transformer
- d) Capacitor

Answer: b) Motor

33. The type of magnetism exhibited by substances that are weakly repelled by a magnetic field is:

- a) Paramagnetism
- b) Diamagnetism
- c) Ferromagnetism
- d) Electromagnetism

Answer: b) Diamagnetism

34. The direction of the force experienced by a current-carrying conductor placed in a magnetic field is given by:

- a) Ampere's law
- b) Lenz's law
- c) Right-hand thumb rule
- d) Fleming's left-hand rule

Answer: c) Right-hand thumb rule

35. The phenomenon of an electric current being induced in a coil due to the change in magnetic field produced by a nearby magnet is called:

- a) Electromagnetic induction
- b) Self-induction
- c) Mutual induction
- d) Magnetic induction

Answer: a) Electromagnetic induction

36. The part of an electric motor where the coil is mounted and rotates is called the:

- a) Stator
- b) Rotor
- c) Armature
- d) Commutator

Answer: c) Armature

37. The process of using a magnetic field to convert mechanical energy into electrical energy is known as:

- a) Electromagnetic induction
- b) Electromotive force
- c) Magnetic induction
- d) Self-induction

Answer: a) Electromagnetic induction

38. The device used to step up or step down the voltage in an electrical circuit is a:

- a) Transformer
- b) Generator
- c) Motor
- d) Resistor

Answer: a) Transformer

39. The phenomenon of a voltage being induced in a coil due to the change in current in a nearby coil is called:

- a) Electromagnetic induction
- b) Self-induction
- c) Mutual induction

d) Magnetic induction

Answer: c) Mutual induction

40. The magnetic field lines around a current-carrying conductor are:

a) Circular and concentric

b) Parallel and straight

c) Varying in direction

d) Dispersed randomly

Answer: a) Circular and concentric

41. The SI unit of current is:

a) Ampere

b) Volt

c) Ohm

d) Tesla

Answer: a) Ampere

42. The property of a material that allows it to be attracted by a magnet is called:

a) Magnetism

b) Conductivity

c) Ferromagnetism

d) Resistance

Answer: c) Ferromagnetism

43. The device used to measure the strength and direction of a magnetic field is a:

a) Galvanometer

- b) Ammeter
- c) Voltmeter
- d) Magnetometer

Answer: d) Magnetometer

44. The direction of the force experienced by a current-carrying conductor placed in a magnetic field can be determined using:

- a) Ampere's law
- b) Lenz's law
- c) Right-hand thumb rule
- d) Fleming's left-hand rule

Answer: c) Right-hand thumb rule

45. The phenomenon of a changing magnetic field inducing a current in a nearby conductor is described by:

- a) Ampere's law
- b) Lenz's law
- c) Faraday's law
- d) Ohm's law

Answer: c) Faraday's law

46. The part of an electric motor that provides a split-ring arrangement for changing the direction of current flow is called the:

- a) Stator
- b) Rotor
- c) Armature
- d) Commutator

Answer: d) Commutator

47. The process of using electricity to generate a magnetic field is called:

- a) Electromagnetic induction
- b) Electromotive force
- c) Magnetic induction
- d) Self-induction

Answer: c) Magnetic induction

48. The device used to protect electrical appliances from excessive current is called a:

- a) Resistor
- b) Capacitor
- c) Fuse
- d) Diode

Answer: c) Fuse

49. The direction of the induced current in a conductor can be determined using:

- a) Ampere's law
- b) Lenz's law
- c) Right-hand thumb rule
- d) Fleming's left-hand rule

Answer: b) Lenz's law

50. The strength of the magnetic field inside a solenoid depends on:

- a) Number of turns in the solenoid

b) Current passing through the solenoid

c) Length of the solenoid

d) All of the above

Answer: d) All of the above