

## PHYSICS

### CHAPTER -2 MAGNETIC EFFECT OF ELECTRIC CURRENT

(1-mark questions)

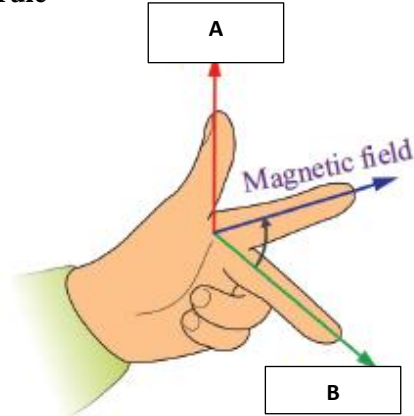
- The magnetic field lines due to a straight wire carrying a current are  
(a) straight (b) circular  
(c) parabolic (d) elliptical
- The magnetic field lines inside a long solenoid carrying current are nearly  
(a) straight (b) circular  
(c) parabolic (d) elliptical
- Which of the following involves electromagnetic induction?
  - A rod is charged with electricity
  - An electric current produces a magnetic field
  - A magnetic field exerts a force on a current carrying wire
  - The relative motion between a magnet and a coil produces an electric current
- The direction of magnetic field around a current carrying straight conductor is given by \_\_\_\_\_ law
- In which of the following case an emf is induced in a solenoid?
  - When a magnet is stationary near to the solenoid
  - When a bar magnet is stationary inside the solenoid
  - When both solenoid and magnet move in the same direction with same speed
  - When the magnet is moves into a stationary solenoid
- When a current flow in a circular conductor in clockwise direction the magnetic field lines will \_\_\_\_\_  
(move away from the coil / move into the coil)
- When a current flow in a circular conductor in anticlockwise direction the magnetic field lines will \_\_\_\_\_  
(move away from the coil / move into the coil)
- Some statements regarding to magnetic field developed by a long solenoid are given find the correct statement
  - It is zero
  - It will be same at all points
  - It gradually decreases towards the end

d. It gradually increases towards the end

9. Find the odd one out and give reason.

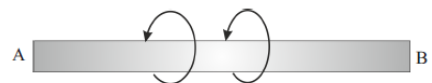
- AC Generator
- Motor
- Microphone
- DC Generator

10. The figure represents Flemings left hand rule



A and B are

- A- current, B- force
  - A- force, B- current
  - A- emf, B- force
  - A- force, B- emf
11. The direction of force in a current carrying conductor placed in a magnetic field is given by \_\_\_\_\_ law
12. Find the odd one out and give reason.
- Armature
  - Diaphragm
  - Split rings
  - Brushes
13. In the figure the direction of current in the conductor is



(from A to B / from B to A)

14. An electric motor

- Provides a constant potential difference
- Measures electric current
- Measures potential difference
- Converts electrical energy into mechanical energy

15. State true or false

- Fleming's left-hand rule is used to find the direction of magnetic field due to a straight conductor
- Maxwell's right hand thumb rule is used to find the direction of magnetic field due to a straight conductor

- c. The magnetic field lines inside a current carrying conductor are circular
- d. A motor is used to generate electricity
- e. When current enter into a solenoid in clockwise direction that end have magnetic North polarity
- f. The direction of force produced in a current carrying conductor is parallel to the direction of current
- g. The magnetic field produced by a solenoid is permanent

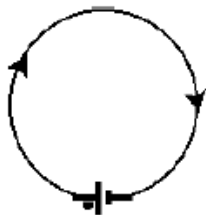
16. The magnetic effect of electric current was first demonstrated by \_\_\_\_\_

17. The C.G.S unit of intensity of magnetic field is

- a. Ampere
- b. Volt
- c. Ohm
- d. Oersted

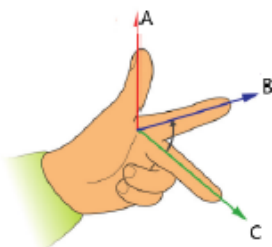
(2 marks questions)

18. The direction of current flowing through a conductor is given



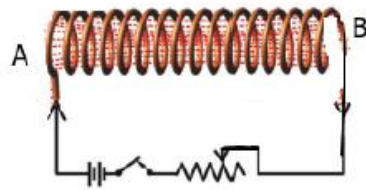
- a. At the centre of the coil the direction of magnetic field is (out of the coil/ into the coil)
- b. When the south pole of a magnet is placed in front of the magnetic field produced by the conductor will it repel or attract? Why?

19. Fleming's left-hand rule is depicted in the picture.



Identify A, B and C

20. The magnetic field around a solenoid is given.

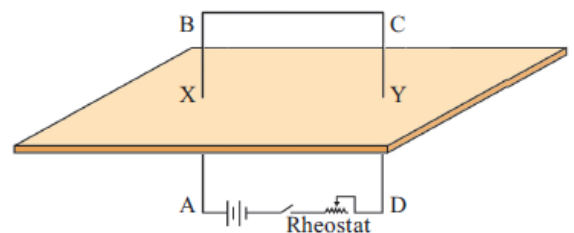


- a. Identify the magnetic polarities at A and B
- b. The current flowing through the solenoid is reversed. Now the south pole of a magnet is placed at A will it attract or repel?

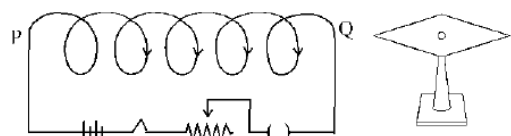
21. Fill in the blanks

Type of magnet	Stability	Magnetic Polarity
Bar magnet	-----	Polarity cannot be changed
Solenoid	Magnetic strength is varied	-----

22. Observe the following figure and answer the questions.

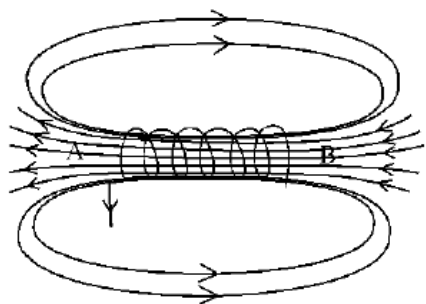


- a. Draw the magnetic field lines around X and Y
  - b. Which law is used here?
23. A magnetic needle is placed nearer to a solenoid PQ as shown below.



- a. When the switch is ON which pole of the magnetic needle will be attracted towards the end Q?
- b. Suggest any two methods to increase the magnetic field around the solenoid

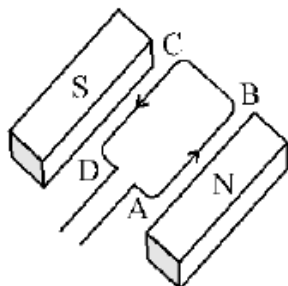
24. The magnetic field around a solenoid is given.



- Identify the Polarities at A and B
- How will you change the magnetic polarities at A and B?

(3 marks questions)

25. ABCD is a rectangular conductor placed between a magnetic field.

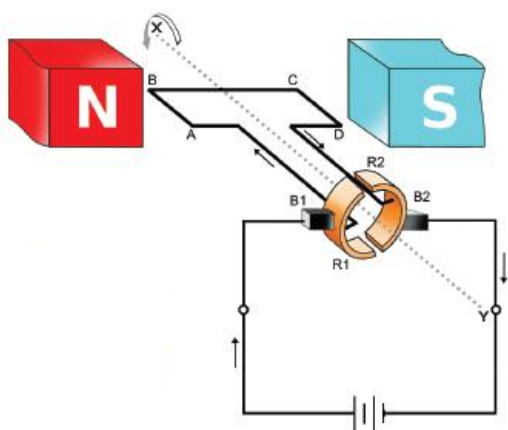


- In which direction will the coil rotate when a current is passed through the coil in the direction ABCD
- Why commutator is necessary for continuous rotation

26. With a neat diagram explain the working of a loud speaker

27. Write any three difference between solenoid and bar magnet

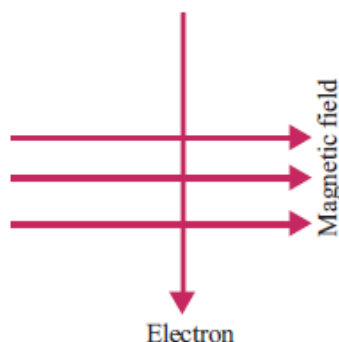
28. The figure of an electric device is given



- Identify the device shown in the figure
- Write functions of parts R<sub>1</sub>, R<sub>2</sub>

c. Write any two applications of this device

29. The direction of an electron moving in a magnetic field is given



- The direction of magnetic force by the electron is \_\_\_\_\_ (into the plane of paper/ out of the plane of paper)
- Which law is used in the above situation?
- If the direction of electron is parallel to magnetic field will it produce a force? why?

30. Fill the table

Laws	Statements
Fleming's left hand rule	_____
Maxwell's right hand screw rule	_____
Motor principle	_____

31. AB is a conductor freely suspended between a magnetic field

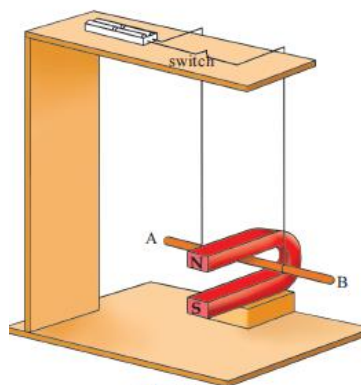


Fig. 2.10

- What happens when a current is flowing through the conductor?
- Explain the reason behind it
- What happens if the direction of current flowing through the conductor is reversed?