Electromagnetism DPP – 1

1. Metal which can be used for construction of base of magnetic compass is :
(A) Iron **(C)** Aluminium
(B) Nickel **(D)** Cobalt

2. Magnetic field lines of earth travels from .....to.....inside the earth:
(A) South pole, north pole **(C)** North pole, infinity
(B) North pole, south pole **(D)** Infinity, south pole

3. If a magnet is suspended freely at north pole then:
(A) It will become horizontal **(C)** It will become vertical
(B) It will start rotating **(D)** It will oscillate

4. If current flows from north to south in a conductor placed over magnetic compass then north pole of magnetic compass with point towards:
(A) South **(C)** East
(B) North **(D)** West

5. Important property of soft iron which make it suitable for making the core of an electromagnet is :
(A) Strength
(B) It behaves as a magnet in presence of external magnetic field only
(C) Its melting point is high
(D) None of these

6. The magnetic field inside a solenoid is:
(A) Zero **(C)** Increases along the axis
(B) Decreases along the axis **(D)** Uniform

7. The polarity of an electromagnet depends on the:
(A) Number of the turns in a coil **(C)** Nature of material
(B) Direction of flow of current **(D)** All are correct

8. By increasing the number of turns in the coil, the strength of the magnetic field:
(A) decreases **(C)** first increases then decreases
(B) increases **(D)** remains unchanged

9. The emf produced in a wire by its motion across a magnetic field does not depend upon :
(A) The length of the wire **(C)** The speed of the wire
(B) The composition of the wire **(D)** The orientation of the wire

10. Direction of force acting on a current carrying conductor kept in a magnetic field is given by :
(A) Fleming's right hand rule **(C)** Lenz's rule
(B) Fleming's left hand rule **(D)** Faraday's rule

11. Draw the pattern of field lines due to a bar magnet.

12. What is SNOW rule?

13. A straight conductor passes vertically downwards through a cardboard held in horizontal plane such that current moves in upward direction:
i. Plot four magnetic lines of force.
ii. Show clearly the direction of magnetic lines of force.
iii. Also plot lines of force when direction of current is reversed.

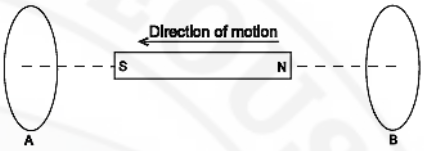
14. What do you understand by the term 'induced current'?

15. What is electromagnetic induction? Who discovered it?

Electromagnetism DPP – 2

1. Solenoid A : 20 turns ; 50 cm length
Solenoid B : 50 turns ; 50 cm length
Strong magnetic field will be produced by:
(A) Solenoid A
(B) Solenoid B
(C) Nothing can be said
(D) Both will produce magnetic field of same strength

2. A bar magnet is moved between two coaxial coils A and B, as shown in figure. The end planes of two coils facing the magnet due to induction will behave:



(A) North pole in both the coils A and B
(B) South pole in both the coils A and B
(C) North pole in coil A and South pole in coil B
(D) South pole in coil A and North pole in coil B

3. Choose correct directions of magnetic fields in I, II, III, and IV quadrants.

(A) I, II, inwards III and IV - can't say
(B) I, III inwards, IV outwards, II - can't say
(C) IV inwards, II outwards, III and I – can't say
(D) None of these

4. The electric device which works on the phenomenon of force on a current carrying conductor in a magnetic field is :
(A) Generator
(B) Accelerator
(C) Transformer
(D) Motor

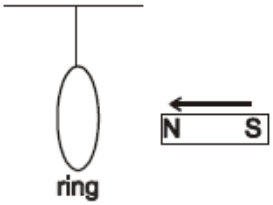
5. Fleming's right hand rule gives :
(A) The magnitude of induced emf
(B) The magnitude of the magnetic field
(C) The direction of induced emf
(D) Both magnitude and direction of the induced emf

6. The unit of induced emf is :
(A) Ampere
(B) Volt
(C) Joule
(D) Electron volt

7. A certain length of wire carries a steady current. It is bent to form a circular coil of one turn. The same length is now bent more sharply to give a double loop of smaller radius as shown in figure. The magnetic field at the centre caused by the same current is :

(A) a quarter of its first value
(B) unaltered
(C) four times its first value
(D) one half its first value

8. A copper wire ring is suspended vertically, on bringing a bar magnet towards ring, the ring will



(A) move towards magnet
(B) move away from magnet
(C) remains stationary
(D) rotate with respect to suspension fibre

9. When we slide a bar magnet into a coil, the strength of induced current depends on -
(A) the number of turns in the coil
(B) the speed with which the magnet moves
(C) strength of that bar magnet
(D) all the above

10. The difference in number of magnetic lines entering and leaving a bar magnet is always :
(A) zero
(B) > 1
(C) infinity
(D) <1

11. State the use of electromagnets in hospitals.

12. What are the factors on which magnetic field due to a solenoid depends?

13. State qualitatively the effect of inserting an iron core into a current carrying solenoid.

14. A coil of copper wire is connected to a galvanometer. What would happen if a bar magnet is :
(A) pushed into the coil with its north pole entering first ?
(B) held at rest inside the coil ?
(C) pulled out again ?

15. Explain what is short circuiting and over loading in an electric supply?

Electromagnetism DPP – 3

1. The most common device for providing an emf is:
- **(A)** Electric cell
- **(B)** Generator
- **(C)** Fuel cell
- **(D)** All of these

2. Unit of a.c. is:
- **(A)** eV
- **(B)** Ampere
- **(C)** Farad
- **(D)** Fleming

3. The various distribution circuits are connected in:
- **(A)** Series
- **(B)** Parallel
- **(C)** Series or parallel
- **(D)** Nothing can be said

4. We will receive an electric shock if we touch:
- **(A)** Live wire
- **(B)** Neutral wire
- **(C)** Earth wire
- **(D)** Any of the above

5. The touching of the live wire and neutral wire directly is known as:
- **(A)** Power rating
- **(B)** Short circuit
- **(C)** Over loading
- **(D)** None of these

6. Electricians use rubber gloves while working because:
- **(A)** Rubber is an insulator
- **(B)** Rubber is a good conductor
- **(C)** It is easy to work while wearing gloves
- **(D)** None of these

7. Why copper wire cannot be used as a fuse wire:
- **(A)** Copper wire will get warm
- **(B)** Copper wire has melting point quite high and it will not melt easily
- **(C)** Copper wire melts easily due to overloading
- **(D)** None of these

8. Which of the following effects of current does not depend on direction of current:
- **(A)** Lighting and chemical effect
- **(B)** Heating and lighting effect
- **(C)** Heating and magnetic effect
- **(D)** Magnetic and chemical effect

9. Electric power is transmitted over long distance through conducting wires at very high voltage because:
- **(A)** The power losses are reduced to minimum
- **(B)** Signal of high voltage travel faster
- **(C)** High voltage can be stepped down to desired levels easily
- **(D)** None of these

10. Birds do not feel electric shock while sitting on a current carrying uninsulated wires because:
- **(A)** The current does not pass through the body as the claws of birds are non-conducting
- **(B)** The resistance offered by the body of birds is very high
- **(C)** The feathers of birds act as an insulator and hence current does not pass through them
- **(D)** The potential difference between the two claws of birds is very small

11. Define alternating current and direct current?

12. What is the disadvantage of dc?

13. In which wire is the ON/OFF switch connected?

14. On which effect of electricity does a fuse work? Name the material used for making fuses.