



Date: \_\_\_\_\_

Class: VII

**Block 23 Electric Current & Heating Effect**

**Block 24- Electric Current & magnetic Effect**

**I. Choose the correct answer**

1. Electricity is the movement of
  - a) molecules
  - b) electrons
  - c) atoms
  - d) neutrons
2. Which one of the following is based on the heating effect of current?
  - a) Geyser
  - b) Hair dryer
  - c) Immersion rod
  - d) All of these
3. The coil of wire contained in an electric heater is known as
  - a) component
  - b) element
  - c) electromagnet
  - d) spring
4. The amount of heat produced in a wire depends on
  - a) material
  - b) length
  - c) thickness
  - d) all of these.
5. The wire which melts and breaks the circuit when large current is allowed to flow through it is called:
  - a) A fuse wire
  - b) Element
  - c) Connecting wire
  - d) Filament
6. Which of the following appliances is based on the magnetic effect of current:
  - a) Electric kettle
  - b) Electric bell
  - c) Electric iron
  - d) Electric oven
7. Which of these are not the property of electromagnets: -
  - i) an increase in current increases its strength.
  - ii) they are permanent magnets.
  - iii) they remain magnetized even after the current is switched off.
  - iv) they are of varying shape and size
  - a) i and ii
  - b) ii and iii
  - c) i and iv
  - d) ii and iv
8. In an electric bell, which of these gets attracted to the electromagnet:
  - a) The hammer
  - b) The soft iron strip
  - c) The screw
  - d) None of these
9. The magnetic field around a current carrying coil:
  - a) Lasts even when no current flows through it
  - b) Lasts as long as current flows through it
  - c) Does not exist
  - d) Is permanent

10. A solenoid carrying a current behaves like a/an -----

- a) Fuse                      b) bar magnet                      c) electric bell                      d) bulb

## II. Fill in the blanks

11. The combination of two or more cells is called a \_\_\_\_\_.

12. The working of an electric bulb, electric iron and the fuse is based on the -----effect of electric current.

13. The wire used for electric fuse should be of ----- melting point.

14. \_\_\_\_\_ is called weakest link in an electric wiring.

15. \_\_\_\_\_ discovered magnetic effect of electric current.

16. A current carrying coil of an insulated wire wrapped around a piece of iron is called \_\_\_\_\_.

17. If the insulation on the wires has come off due to wear and tear, this may cause \_\_\_\_\_.

## III. True or False

18. MCBs are the switches which automatically turn off when current in a circuit exceeds the safe limit.

19. A fuse is used to save energy in electrical circuits.

20. An electromagnet does not attract a piece of iron.

21. An electric bell has an electromagnet.

22. In the bulb there is a thin wire, called the filament, which glows when an electric current passes through it.

23. A battery in a circuit can consist of only one cell.

## IV. Answer the following.

24. Name some devices which uses heating effect of electric current.

25. Which effect of electric current is utilized: a). in an electric iron b). in an electric bulb.

26. Which material is used as heating element in most appliances? Why?

27. What will happen when a magnetic compass is brought near a current carrying wire?

28. What is the advantage of CFL over ordinary bulb?

29. List three characteristics of wires that affect the amount of heat produced.

30. An electrician is carrying out some repairs in your house. He wants to replace a fuse by a piece of wire. Would you agree? Give reasons for your response.

31. What is an electromagnet? List some applications of electromagnets.

32. Explain why, any metal wire or metal strip cannot be used in place of fuse wire.

33. How is an electric fuse different from an MCB? Which one is better? Give reason

34. List three factors that affect the strength of the magnetic field of a solenoid.

35. How will you prove that electromagnets are temporary magnets?

36. Explain the working of a simple Electric bell with the help of a diagram.

## Block 25 Mirrors

### I. Choose the correct answer.

- Which of the following always diverge light rays?
  - Convex mirror and plane mirror
  - Concave lens and convex mirror
  - Concave mirror and convex lens
  - Concave lens and convex mirror
- John and Tom were given one mirror each by their teacher. Tom found his image to be erect and of the same size whereas John found his image erect and smaller in size. This means that the mirrors of John and Tom are, respectively
  - plane mirror and concave mirror.
  - concave mirror and convex mirror.
  - plane mirror and convex mirror.
  - convex mirror and plane mirror
- Real images are always \_\_\_\_\_ (erect/inverted) and virtual images are always \_\_\_\_\_ (erect/inverted).

### II. Fill in the blanks

- Image formed by a \_\_\_\_\_ mirror is always virtual and smaller in size.
- An image which can be obtained on a screen is called a \_\_\_\_\_ image.
- Light travels along a \_\_\_\_\_ line.
- If a spherical mirror is cut out from a sphere, the centre of the sphere is called the \_\_\_\_\_.
- The inner surface of a steel spoon acts as a \_\_\_\_\_ mirror.

### III. Mark 'T' if the statement is true and 'F' if it is false

- We can obtain an enlarged and erect image by a convex mirror. (T/F)
- We can obtain a real, enlarged and inverted image by a concave mirror. (T/F)
- A real image cannot be obtained on a screen. (T/F)
- A concave mirror always forms a real image. (T/F)
- If you raise your right hand, your image in a plane mirror also raises its right hand. (T/F)
- The image seen in a plane mirror is a virtual image. (T/F)

### IV. Answer the following.

- How can we get an image the same size as the object in a concave mirror?
- What is lateral inversion?
- Assume, a person is standing in front of a plane mirror. The distance between the mirror and his image is 6 m. If the person moves 2 m towards the plane mirror, what would be the distance between the person and his image?
- A shop keeper wanted to fix a mirror which will give a maximum view of his shop. Which type of mirror should he use?
- Is the image formed by a plane mirror is always upright?

20. Can you get a real image at any distance of the object from the convex mirror?
21. Mention the type of image formed on a cinema screen.
22. Can we use convex mirrors as shaving mirrors? Justify your answer.
23. If one wall of a room is covered by a plane mirror, the room appears bigger. Give reason.
24. How can you experimentally locate the principal focus of a concave mirror?
25. Briefly state the characteristics of image formed by a plane mirror.
26. The side mirror of a scooter got broken. The mechanic replaced it with a plane mirror.  
Mention any inconvenience that the driver of the scooter will face while using it.

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