



Brain International School

Vikas Puri, New Delhi

ASSIGNMENT NO. 6

SUBJECT: SCIENCE

CLASS-VII

November'2025

Chapter -10: Electric current and its effects.

1. In each of the following questions, two statements are given one labeled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- a) Both A and R are true, and R is correct explanation of the assertion.
 - b) Both A and R are true, but R is not the correct explanation of the assertion.
 - c) A is true, but R is false.
 - d) Both assertion and reason are false.
- (i) **Assertion:** When electric current passes through a wire, it gets heated.
Reason: The electrical energy is converted into heat energy due to resistance of the wire.
- (ii) **Assertion:** A fuse wire is made of a material with low melting point.
Reason: The fuse wire melts easily when excessive current flows, thus protecting the circuit.
- (iii) **Assertion:** The heating effect of current is used in electric irons and heaters.
Reason: These devices have coils of thick copper wire to produce heat
- (iv) **Assertion:** Electric bulbs work on the magnetic effect of current.
Reason: The filament of the bulb glows because it becomes hot when current passes through it.

2. Answer the following case study based question.

An electric bell works on the magnetic effect of electric current. When current passes through the coil of the electromagnet, it attracts an iron strip that strikes the gong to produce sound. As

the strip moves, the circuit breaks, the current stops, and the strip returns to its position. This process repeats rapidly, producing a continuous ringing sound.

1. What effect of current is used in an electric bell?
2. What happens when current flows through the coil?
3. Why does the hammer of the bell keep moving back and forth?
4. How is the continuous ringing sound produced?

3. Answer the following questions

1. Define Electromagnet.
2. Explain the working of electric bell.
3. Differentiate between heating and magnetic effect of electric current.
4. Why is the filament of an electric bulb made of tungsten and not copper, even though both are metals that conduct electricity?
5. A student replaces the iron core in an electromagnet with a wooden stick. The magnet stops attracting pins. Why does this happen?

Chapter 12 light

- 1. In each of the following questions, two statements are given one labeled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:**

- a) Both A and R are true, and R is correct explanation of the assertion.
- b) Both A and R are true, but R is not the correct explanation of the assertion.
- c) A is true, but R is false.
- d) Both assertion and reason are false.

(i) Assertion: We can see objects because light reflects from them and enters our eyes.

Reason: Light travels in straight lines and gets absorbed by all surfaces.

(ii) Assertion: The image formed by a plane mirror is always virtual and erect.

Reason: The image appears to be behind the mirror at the same distance as the object is in front of it.

(iii) Assertion: Light cannot bend around corners.

Reason: Light travels in a straight line in a given medium.

(iv) Assertion: The image formed by a concave mirror can be either real or virtual.

Reason: The nature of the image depends on the position of the object in front of the mirror.

2. Answer the following case study based question.

Ritu's father explained that the rear-view mirror in their car helps him see vehicles coming from behind. He said that this mirror forms a smaller, upright, and virtual image of the vehicles, allowing a wider view of the road. Ritu's science book confirmed that such mirrors are convex mirrors, which diverge light rays.

1. What type of mirror is used as a rear-view mirror in vehicles?
2. What are the characteristics of the image formed by a convex mirror?
3. Why is a convex mirror preferred over a plane mirror in vehicles?
4. What type of mirror would make objects appear larger instead of smaller?

3. Answer the following questions;

1. Why can you see your reflection clearly in a still pond but not in running water?
2. When you stand in front of a plane mirror and raise your right hand, the image seems to raise the left hand. Why does this happen?
3. What are the characteristics of the image formed by a plane mirror? Explain with an example
4. Describe an activity to show that light travels in a straight line.
5. Explain the working of Kaleidoscope along with diagram.