

# Light, Shadows and Reflections

## Chapter - 11

### A. Very - Short - Answer Questions: Answer in one-word.

1. Name one man-made luminous body.

Ans: - Torch.

2. Is grounded glass transparent? If not, what type of substance it is?

Ans: - No, grounded glass is translucent object.

3. Are stars luminous or nonluminous?

Ans: - Luminous.

4. Can a transparent object cast shadow?

Ans: - No

5. What will be the colour of shadow of a coloured object?

Ans: - Dark blackish, grey.

6. Which of the two image or shadow, is formed by light reflected from the object?

Ans: - Image

### B. Short - Answer Type Questions: -

1. What is light? Is the speed of light greater than

Teacher's Signature \_\_\_\_\_

the speed of sound?

Ans: - Light is a form of energy which causes the sensation of vision in our eyes.

Yes, the speed of light is greater than the speed of sound.

2. Why nonluminous bodies become visible when light from some other source is made to fall on them?

Ans: - When light from other some other source is made to fall on non-luminous bodies they become visible due to the reflection or scattering of light falling on them.

3. What equipment or materials are needed to show the formation of shadow?

Ans: - The equipment required to show the formation of shadow are a source of light an opaque object and a screen or surface behind the object.

4. Write any two characteristics of a shadow.

Ans: - The two characteristics of a shadow are :-

(i) Shadow is formed when light is made to fall on an opaque object.

(ii) Shadow of an object gives an idea about its shape.

5. Write one advantage and one disadvantage of a.

Teacher's Signature \_\_\_\_\_

pinhole camera -

Ans :- Advantage

The image is free from spherical and chromatic aberrations.

Disadvantage

Pinhole camera cannot be used for studying moving objects.

C. Long Answer Type Questions :-

1. Write the conditions required for a shadow to form.

Ans :- The conditions required for a shadow to form are :-

- (i) a source of light
- (ii) An opaque object
- (iii) Any surface or a screen behind the object.

2. What is meant by reflection of light?

Ans :- The phenomenon in which a ray of light after falling on a smooth polished surface or a mirror returns to the same medium is called reflection.

3. Can you think of creating a shape that would give a circular shadow if held in one way and a rectangular shadow if held in another way?

Teacher's Signature \_\_\_\_\_

Ans:- If we held a cylindrical cardboard in front of source of light, it will create a round shadow on the ground and if we turn it at some other position then it creates a ~~zen~~ rectangular shadow.

4. Show the reflection of light by a plane mirror.

Ans:- Fix the comb with its <sup>teeth</sup> up on the side of the thermal sheet as shown in the figure.

Fix a mirror on the thermal sheet such that the light ~~coming~~ coming through the comb falls at an angle less than  $90^\circ$ . Make the room dark by switching off all lights and drawing curtains on the windows. Switching on the torch light and observe the light rays. You will see that light travels in straight line and gets reflected from the mirror.

5. Differentiate between the image and the shadow of an object.

Ans:- Image :-

(i) Image is formed due to reflection or refraction of light.

(ii) Image is seen when light coming from the object after reflection or refraction enters the observer's eye.

(iii) Image gives more information, such as colour, structure etc., about the object.

Teacher's Signature \_\_\_\_\_

Shadow :-

- (i) Shadow is formed when light falls on an opaque body.
- (ii) No light enters the eye from the shadow of the object.
- (iii) Shadow does not provide any detail about the object. It gives an idea about the shape of the object.

D. Tick the odd-one out giving reasons.

1. Sun, Stars, Earth, Jyru

Ans :- Earth :- others are natural luminous bodies.

2. Wood, Iron sheet, Glass, Rocks.

Ans :- Glass :- others are opaque objects.

3. Rock, Mirror, Iron plate, Plywood.

Ans :- Mirror :- It reflects the light.

4. A source of light, An opaque object, A ~~plane~~ mirror, a screen

Ans :- A plane mirror - others are required for formation of shadow.

5. Solar eclipse, Pinhole camera, Rectilinear propagation of light, Reflection from mirror.

Ans :- Reflection from mirror :- others are based on rectilinear propagation of light.

Teacher's Signature \_\_\_\_\_

## Define the following terms :-

### 1. Luminous and Nonluminous bodies.

Luminous bodies - The bodies which emit (give out) light are called luminous bodies. Example :- The sun etc.

Nonluminous bodies - The bodies which do not emit (or give out) light are called nonluminous bodies. Example: Table.

### 2. Mirror → A smooth, highly polished reflecting surface is called mirror.

3. Reflection of light → The phenomenon in which a ray of light after falling on a smooth polished surface or a mirror <sup>bounces back</sup> ~~returns~~ into the same medium is called reflection.

4. Transparent material → A substance which allows light to pass through it is called transparent substance. Example :- Glass etc.

5. Translucent material → A substance which allows only a part of light to pass through it is called a translucent substance. Example :- Wax-paper etc.

Teacher's Signature \_\_\_\_\_

**HOIS :-**

1. Is it possible to see through a sheet that does not permit light to pass through it? How is the material of such a sheet classified?

Ans :- No, it is not possible to see through such sheet which does not allow the light to pass through it. The material of such a sheet is classified as opaque.

2. Why don't you see the image of your face when you stand in front of a clear glass window-pane?

Ans :- We cannot see the image of our face in front of a clear glass window pane because ~~being~~ being transparent light passes through it instead of reflecting back.

Teacher's Signature \_\_\_\_\_