Question Bank: Light

Chapter: Light
Class: 6 | Science | Oxford Curriculum
Total Questions: 25
Mapped with Bloom's Taxonomy
Competitive Exam Tags: NTSE, NSO, NSTSE

Section A: Remembering & Understanding (1 Mark Each)

1. What is light? **Answer:** Light is a form of energy that enables us to see objects when it reflects into our eyes.
   Tag: NSO

2. Name a natural source of light. **Answer:** The Sun.
   Tag: NSO

3. Name two luminous objects. **Answer:** The Sun and a burning candle.
   Tag: NSTSE

4. What are non-luminous objects? **Answer:** Objects that do not produce their own light.
   Tag: NTSE

5. Define a shadow. **Answer:** A dark area formed when an opaque object blocks light.
   Tag: NSO

6. What is rectilinear propagation of light? **Answer:** Light travels in a straight line.
   Tag: NSTSE

7. What are opaque objects? **Answer:** Objects that do not allow light to pass through them.
   Tag: NSO

8. Name an instrument used to observe how light travels. **Answer:** A pinhole camera.
   Tag: NTSE

9. What type of materials form shadows? **Answer:** Opaque materials.
   Tag: NSO

10. What is reflection? **Answer:** Bouncing back of light when it hits a surface.
    Tag: NTSE

Section B: Applying & Analyzing (2–3 Marks Each)

1. Differentiate between transparent and translucent materials. **Answer:** Transparent materials allow light to pass completely (e.g., glass), while translucent materials allow light to pass partially (e.g., frosted glass).
   Tag: NSTSE

2. How does a shadow form? **Answer:** A shadow is formed when light is blocked by an opaque object, creating a dark area behind the object on a surface.
   Tag: NSO

3. Why do we see objects? **Answer:** We see objects because light reflects off them and enters our eyes.
   Tag: NTSE

4. Describe the shape and size of a shadow. **Answer:** The shape resembles the object, but the size depends on the distance between the object and light source.
   Tag: NSO

5. Why are shadows not formed in the dark? **Answer:** Shadows require a light source to be formed. In the absence of light, no shadow is formed.
   Tag: NSTSE

Section C: Evaluating & Creating (3–5 Marks Each)

1. Describe an activity to prove light travels in a straight line. **Answer:** Place three cardboards with holes in a straight line. When a candle is lit behind the first hole, the flame is visible only if all holes are aligned, proving light travels in straight lines.
   Tag: NTSE

2. Explain how shadows change throughout the day. **Answer:** Shadows are longer in the morning and evening due to the angle of sunlight. They become shorter at noon when the sun is directly overhead. This variation occurs because of the changing position of the Sun in the sky.
   Tag: NSO

3. What are the properties of a shadow? **Answer:** A shadow is always dark, has the same shape as the object, and changes in size based on the distance between the object and light source.
   Tag: NSTSE

4. Create a table to classify objects as luminous, non-luminous, transparent, and opaque. **Answer:**

Category	Examples
Luminous	Sun, Bulb
Non-Luminous	Chair, Book

Category	Examples
Transparent	Glass, Clean Water
Opaque	Wood, Wall

Tag: NSO

1. Why do we need light to see objects? Give examples. **Answer:** Light reflects from objects into our eyes, making them visible. In a dark room, we can't see anything until a source of light is introduced, like a torch or bulb.
   Tag: NTSE

Section D: Case-Based/Scenario Questions (4–5 Marks Each)

1. **Case Study:** During a science fair, Arya built a pinhole camera using a shoebox and butter paper. She placed it facing a tree on a sunny day and observed an inverted image. a) What property of light is shown in this activity?
   b) Why is the image inverted?
   Answer:
   a) The activity shows rectilinear propagation of light.
   b) Light travels in straight lines and crosses at the small hole, projecting the top part of the object at the bottom and vice versa.
   Tag: NSTSE

2. **Scenario:** Rahul placed his hand in front of a torchlight and observed a shadow on the wall. His sister noticed the shadow was sharp. a) What kind of object is Rahul’s hand?
   b) Why was the shadow sharp and not blurred?
   Answer:
   a) His hand is opaque.
   b) The shadow is sharp because an opaque object blocks light completely and the light source was direct and small.
   Tag: NSO

3. **Case Study:** In an experiment, students observed that a glass object didn't form a clear shadow. Their teacher explained about material types. a) What kind of material is glass?
   b) Why was the shadow unclear?
   Answer:
   a) Transparent.
   b) Transparent objects allow light to pass through, so they do not block enough light to form a distinct shadow.
   Tag: NTSE

4. **Scenario:** At sunset, Rina's shadow appeared much longer than usual while playing outside. She became curious. a) Why does the shadow length change during the day?
   b) When is the shadow shortest and why?

Answer:
a) Due to the changing angle of the Sun, shadows become longer in the morning and evening.
b) At noon, when the Sun is overhead, the shadow is shortest as the light falls directly on the object.
Tag: NSO

5. **Case Study:** In a classroom activity, students used torches, paper cut-outs, and screens to study shadows. They noticed that the shadow's size changed based on the distance between the object and torch. a) What conclusion can you draw from this experiment?
   b) How does distance affect shadow size? **Answer:**
   a) Shadows are affected by the position of the object relative to the light source.
   b) The closer the object to the light source, the larger the shadow. The farther it is, the smaller the shadow becomes.
   Tag: NSTSE