# Light, Shadows and Reflection

**Multiple choice questions**

**Question 1**
Which of the following is a false?
(a) All objects cast shadows.
(b) Mirror changes direction of light that falls on it
(c) image in a plane mirror is of the same size and colour as that of the object.
(d) Coloured objects form coloured shadows
(e) The phenomenon of bouncing back of light after falling on the surfaces of the objects is called reflection of light.

**Question 2**
What is true about reflection from plane mirror?
(a) The image formed by plane mirror is erect and virtual.
(b) Size of the image formed by plane mirror is equal to the size of the object.
(c) The distance of the image behind the plane mirror is equal to the distance of the object from the mirror.
(d) All the above

**Question 3**
Which of the following is sources of artificial light?
(a) electric bulb
(b) Candle
(c) Torch
(d) All the above

**Question 4**
What is lateral inversion?
(a) Image looks shorter in size
(b) Image looks larger in size
(c) The right side of the object appears to be the left side of its image and vice-versa
(d) None of the above

**Question 5**
Two statement are given
**Statement A**: We cannot see our image in the mirror in complete dark room because there is no light to reflect.
**Statement B**: We cannot see objects through T shaped pipe because light travels through straight line

(a) Statement A is correct only
(b) Statement A is correct only
(c) Statement A and B both are incorrect
(d) Statement A and B both are correct

**Long Answer type questions**

1. Distinguish between
a. transparent, translucent and opaque materials?
b. Luminous and Non Luminous objects
2. Moon appears bright at night. Is it a luminous or non-luminous body?
3. Explain how we see our image in the Mirror?
4. In what manner does size of our shadow change when we walk in sunlight?
5. Is it possible to form two or more shadows of an object at the same time?
6. How does the size of the shadow of an object change as the distance between the source of light, the object and the screen are changed?
7. Let us take the example of the object around which light could bend, like water flowing around a stone in its path. Would such an object form a shadow? Justify your statement.
8. Can we form (i) an image (ii) a shadow without a screen (iii) coloured shadow of an object?
9. **Match the beginnings and endings of the sentences:**

|  |  |
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| **Beginnings** |  **Endings** |
| 1. A pinhole camera is | (a) travelling of light in a straight line. |
| 2. Moon and Venus are | (b) natural source of light. |
| 3. Rectilinear propagation of light is | (c) give out light of their own. |
| 4. Luminous objects | (d) based upon the principle of rectilinear propagation of light. |
| 5. Glow-worm is a | (e) illuminating objects. |

1. **Write True (T) or False (F) against the following statements in the given brackets:**
1. Stars are luminous bodies. ( )
2. Translucent objects do not form shadows. ( )
3. An oiled paper is an example of an opaque body. ( )
4. A pinhole camera can take pictures of moving objects. ( )
5. A polished metal surface can't act as a mirror. ( )
6. We can see shadow even if there is no light. ( )
7. A heated iron rod becomes luminous but on cooling it becomes non-luminous. ( )
8. Image of an object is always black, shadow shows the colour of the object. ( )

**Fill in the blanks using the correct word given in the bracket:**
1. Light is a form of ............................ . (energy/electricity)
2. All bodies which emit light energy by themselves are called ..................... bodies. (luminous/opaque)
3. Light travels in a ............................ line. (straight/curved)
4. A glowing electric bulb is an example of ............................ source of light. (natural/artificial)
5. Any polished surface from which regular reflection takes place is called a ................. . (mirror/obstacle)
6. Reflection from a mirror gives clear ............................ . (image/shadow)
7. The shadow of a coloured object is ............................ . (coloured/black)
8. The image formed by a mirror is due to  ............................ of light. (reflection/ propagation)



**SPEED DISTANCE AND TIME**

1. A boy walks at a speed of 4 kmph. How much time does he take to walk a distance of 20 km?
2. A cyclist covers a distance of 15 miles in 2 hours. Calculate his speed.
3. A bus covers 216 km in 4 hours, convert the speed of the bus in m/s.
4. A man walks at the speed of 54 km/hr and runs at the speed of 10 km/hr. How much time will the man require to cover the distance of 28 km, if he covers half (first = 14 km/hr) his journey walking and half of his journey running?
5. A man takes 6 hours in walking to a certain place and riding back. He would have taken 2 hours less by riding both ways. What will be the time required by him to walk both ways?
6. A car covers a distance of 450 m in 1 minute whereas a train covers 69 km in 45 minutes. Find the ratio of their speeds.

**Force and Friction**

1. Define friction. Also give the SI unit of friction.
2. Define: a) Lubricants b) Drag
3. Give reasons, Why
	1. We sprinkle fine powder on carrom board?
	2. Sportsmen use shoes with spikes?
4. Explain why sliding friction is less than static friction?
5. Why are aeroplanes streamlined? Where do we find streamlined shapes in nature?
6. What is the cause of friction?
7. What are the factors affecting friction on an object in a fluid?
8. Give two ways of increasing and reducing friction.
9. What is fluid friction? Explain why objects moving in fluids must have special shapes.
10. Give examples to show that friction is both a friend and a foe.