Additional Important Questions

1. Those substance which allow light rays to pass through them completely are called transparent objects. One can see clearly through these objects.
2. Transparent objects are: Spectacles, and membrane of table.

   Opaque objects are: A stone, wood, a heap of salt, dense smoke.

   Translucent objects are: Blood, milk, wax, skin, balloon, rubber.
3. We may say that cloud behaves as transparent object.
4. Optical nature of the object.
5. (i) Sun (ii) Stars (iii) Fire (iv) Jugnu (Direfly).
6. Those objects which allow only a small part of the light rays to pass through them are called translucent objects. These are the objects through which one cannot see properly.
7. Those materials which do not allow light to pass through them, are called opaque.

   Example: wood, stone, etc.
8. On the basis of the experience, we observe our eyelids are opaque.
9. (i) By smearing a thin layer of oil we may convert a transparent glass sheet into a translucent sheet into a translucent sheet.

   (ii) By covering one side by butter paper.
10. Tubelight, jugnu.
11. Yes, fire emits light.
12. The objects which emit light own are called luminous bodies e.g., the sun, the stars, etc.
13. (i) Candle (ii) Oil lamp (iii) Electric bulb (iv) Torch

What Exactly are Shadows?

1. Wood and bricks are substances through which light does not pass.
2. We need

   (i) A source of light,

   (ii) an opaque object in the way of light and

   (iii) a screen.
3. Yes, the direction of shadow changes as the sun changes its position during the day. The length of the shadow also changes from season to season.
4. An object which comes to the path of light is called an obstacle.
5. Shadow is not just two-dimensional outline that you see on the ground. All the space behind the opaque object up to some distance behind it, seems to be filled with the shadow.

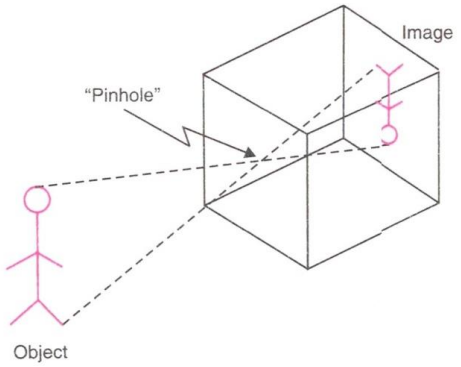

Image formed by a pinhole camera

6. Screen is a butter on which images are formed.
7. A shadow is a dark outline or image cast by an opaque object that blocks light coming from a sources of light. It is formed when light hits the opaque object which does not let the light pass through. Everywhere else around the opaque object, the light continues in a straight path until it bounces off the ground or wall behind the object. The wall or ground behind the opaque is the screen. On this screen is a dark patch, or shadow, with the same outline as the object surrounded by light. The colour of the opaque objects does not affect the colour of the shadow that we see.

A Pinhole Camera:

1. It is a device which form a photograph, like image of a bright object on a screen.
2. Straight line.
3. In dark room we can see with torch light which goes straight. Similarly, dust particles becomes visible when light enters the room through fine hole.

   All these examples indicate that light travels in straight line.
4. In a pinhole camera image formed is inverted because the object is between radius of curvature and focus.

Mirrors And Reflections:

1. A smooth shining surface, which rebounds the light back in same or in different direction is called a mirror.
2. When a ray of light falls on a smooth and shiny surface, the whole of light is sent back in the same medium. It is called reflection. Mirrors do not allow even a small amount of medium light to pass through them. Mirrors show regular and complete reflection.
3. The extent of reflection depends upon the shine and smoothness of the surface. More is the shine and smoothness of the surface, more will be the reflection. That is why, mirrors reflect most of the light falling on it. Hence, for reflection, shiny surfaces are required.
4. Mirror is silvered on one side, so it does not allow the light to pass through it. It reflects almost whole of the light falling on it.
5. The silvered glass has a smooth surface and the smoothness helps in forming clear image. Silvering makes it shiny and the shiny surface helps in reducing the absorption.
6. The light comes back in the same plane, when light falls on a shiny surface.
7. Because they reflect light from the sun.