



Chapter: 11

Light Shadows and Reflections

Notes

- Light is an energy which helps us to see objects.
- Objects can be group as luminous or non luminous depending on whether they have their own light or not.
- Luminous object are those object that gives out or emit light of their own.
Example: Sun, torch etc.
- Non luminous objects are those object that do not emit light of their own.
Example: Chair, table etc.
- Object can also be grouped as opaque, transparent and translucent depending on the light towards them.
- Opaque objects are those object that do not allow light to pass through them.
Example: Table, chair, tree etc.
- Transparent object are those object that allows light to pass through them.
Example: Glass, polythene etc.
- Translucent object are those objects that allows some of the light to pass through them.
Example: Butter paper, tissue paper etc.
- Shadow is the black patch formed when an opaque body block the source of light.
We need a source of light, an opaque object and a screen to see shadow.
- No shadows are formed in the absence of light.
- The characteristics of a shadows are
 - (i) The shadow is always erect.
 - (ii) The shadow is always black irrespective of colours of the object.
 - (iii) The shape of the shadow changes depending upon the angle at which the light falls on the object.
 - (iv) The size of the shadow depends on the distance of source of light.
 - (v) The shadow can be seen only on a screen.
- A pinhole camera is just a box with a very tiny hole on one of its sides. Light falls on the hole and an inverted image is formed on the opposite side of the hole.

- The properties of the image formed by the pin hole camera are:
 - (i) The image is of the same colour as the object.
 - (ii) An upside down (inverted) image is formed.
 - (iii) The image so formed is smaller in size.
 - The condition required to get a clear image through pin hole camera are:
 - (i) The object should be placed in bright sunshine.
 - (ii) Black cloth should cover the head and pinhole camera.
 - (iii) The pinhole should be very small.
 - Movement of sun can be observed by using pin-hole camera. Even the phenomenon of solar eclipse can be seen using this device.
 - With pinhole camera, we can view images of various objects like trees, building etc.
 - During solar eclipse, we should never look directly at the sun as looking to it directly could be extremely harmful for our eyes.
 - Sometime, we come across with natural pinhole camera on bright sunny days when we pass under a tree covered with number of leaves. The circular patch of sunlight seen under the tree is the pinholes images of the sun where the gaps between the leaves act as a pinholes.
 - Light travels in a straight line.
 - Mirror is a smooth surface that can make image.
 - The phenomenon of bouncing back of light from a smooth surface is known as reflection.
 - Mirror changes the direction of light that falls on it.
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