

Light

1. What is Light?

Ans. Light is a form of energy which produces the sensation of sight in us.

2. What is source of light?

Ans. An object that gives out light is called Source of Light.

3. How many types of sources of light?

Ans. There are two types of Source of light

- a. Natural Source of light
- b. Artificial Source of light

4. What are Natural Sources of Light?

Ans. Source of light that occur in nature are called Natural Source of Light.

Ex: Sun Star, Fireflies etc.

5. What are artificial sources of light?

Ans. Source of light that are made by humans are called Artificial or Human made source of light.

Ex: LED Bulb, Electric Tube etc.

6. On the basis of size and shape Source of Light is how many types?

Ans. On the basis of size and shape sources of light are two types:

- a. Point Source of Light
- b. Extended Source of Light.

7. What is Point Source of Light?

Ans. A source of light that has negligible dimensions is called Point Source of Light.

Ex: A distant star seen through a small telescope is an example of point source of light.

8. What are Extended sources of light?

Ans. A source of light that is made of a large number of point source of light is called Extended source of light.

Ex: Electric Bulb, Burning candle.

9. What are Luminous Objects?

Ans. An object that gives out its own light is called Luminous Object.

Ex: Sun, Star, Burning Candle, Electric Bulb etc.

10. What are Non-luminous Objects?

Ans. An object that does not give out its own light is called a non-luminous Object.

Ex: Planets, Chair, Table, Moon etc.

11. What is the definition of Transparent Object?

Ans. An object that allows light to pass through it completely is called Transparent Object.

Ex. Clear glass, Clean Air Clean Water etc.

12. What is the definition of Translucent Object?

Ans. An object that allows only a part of light to pass through it is called Translucent Object.

Ex: Ground Glass, Butter Paper, Oiled paper.

13. What is the definition of Opaque object?

Ans. An object that does not allow light to pass through it is called an Opaque Object.

Ex: Wood, Metal Stone etc.

14. What is Rectilinear Propagation of Light?

Ans. Line travels in a straight line. The property of light travelling in a straight line is called rectilinear propagation of light.

15. What is the definition of Rays of Light?

Ans. The narrow path along which the light travels in the given direction is called Ray of Light.

16. What is the definition of Beams of Light?

Ans. A group of light rays which are travelling together is called a beam of light.

17. What are Parallel Beams of Light?

Ans. It consists of light rays that travel parallel to one another.

A beam of light which comes from a source located very far has light rays parallel to one another.

18. What are Divergent Beams of Light.

Ans. It consist pf light rays that come from a source and travel in different direction.

19. What are Convergent Beams of Light?

Ans. Convergent Beams of Light consists of light that come from different directions and meet at a point.

20. On which principle a pinhole camera can works?

Ans. Pinhole Camera works on the principle of rectilinear propagation of light.

21. What are the characteristics of image formed by a pinhole camera?

Ans. The Image formed by Pinhole Camera is

- a. Real
- b. Inverted.
- c. generally smaller than the size of the object.

22. On which factors the image formed by pin hole are not affected?

Ans. The image formed by a pinhole camera is not affected by the shape of the pinhole.

23. Which factors are affected the size of the image of Pin hole Camera?

Ans. The size of the image formed by pin hole camera depends on the following factors.

a. The distance between the pinhole and the screen

When the distance of the screen from the pin hole is increased, the size of the image increased.

b. The distance between the pinhole and the object

When the distance between the object and the pinhole increased i.e. when the object is moved away from the pinhole, the size of the image decreased.

$$\text{i.e. } \frac{\text{Size of the Image}}{\text{Size of the object}} = \frac{\text{Distance of the image from the pinhole}}{\text{Distance of the object from the Pinhole}}$$

24. What is called Magnification?

Ans. In pinhole camera

$$\frac{\text{Size of the Image}}{\text{Size of the object}} = \frac{\text{Distance of the image from the pinhole}}{\text{Distance of the object from the Pinhole}}$$

The ratio between Size of the Image to the Size of the Object is called Magnification.

25. What are the advantages of Pine hole Camera?

Ans. The advantage of Pin Hole Camera is
It does not require any lens.

26. What are the disadvantages of Pine Hole Camera?

Ans. The disadvantages of Pine Hole Camera are

- a. The image obtained is temporary and dos not show the details of the object.
- b. It cannot be used to see the motion of the moving objects.

27. What is Shadow?

Ans. A shadow is a dark patch formed behind an opaque object when it blocks the path of the light coming from the source of light.

28. Why does a shadow form?

Ans. A shadow is formed because a light travel in a straight line. The rays that fall on the opaque object are blocked. Due to this they do not reach the screen. So, the position of screen does not receive any light and remains dark. This dark position is the shadow of the object.

29. What is called a Screen?

Ans. An opaque material on which a shadow is formed is called a screen.

30. Which Conditions are essential for the formation of shadow?

Ans. Following conditions are essential for the formation of Shadow:

- There must be a source of light.
- There must be an opaque object to block the path of light.
- There must be an opaque screen to receive the shadow of opaque object.
- Object must be placed in between the screen and the source of light.

31. What are the characteristics of Shadow?

Ans. The characteristics of Shadow are

- It is always dark. It is not affected by the color of the object or the color of the light.
- The shape of the shadow is similar to the shape of the object.
- It is always formed in the direction opposite to the source of light.

32. What is Umbra and Penumbra?

Ans. For an extended source of light the shadow is dark at the center and is surrounded by a less dark area. The Dark position is called Umbra and the less dark position is called Penumbra.

33. What are the differences between Umbra and Penumbra?

Ans.

Umbra	Penumbra
(1) It is the darkest part of shadow.	(1) It is less dark part of shadow.
(2) No light reaches to this region.	(2) Light from some parts of the source reaches.
(3) It is central part of shadow.	(3) It is outer part of a shadow.

34. When only Umbra is formed?

Ans. Only Umbra is formed on the screen when an opaque object is lit up with a point source of light.

35. When Umbra and Penumbra are formed?

Ans. Umbra and Penumbra are formed on the screen when an opaque object is lit up with an extended source of light.

36. What is Eclipse?

Ans. An eclipse takes place when one heavenly body such as a moon or planet moves into the shadow of another heavenly body.

37. Eclipse are how many types?

Ans, Eclipse are two types:

- Lunar Eclipse
- Solar Eclipse

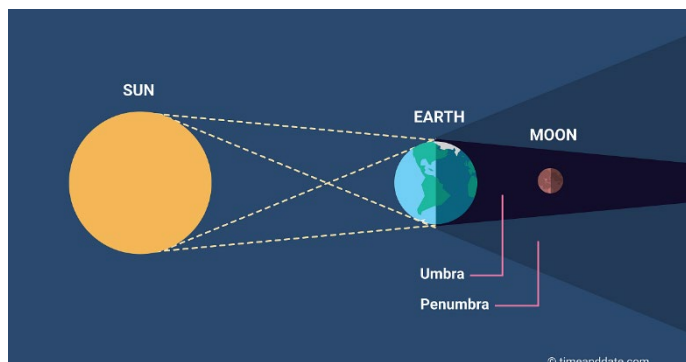


38. What is Lunar Eclipse?

Ans. A lunar eclipse occurs when the Sun, the Earth, and the Moon are in a straight line with Earth in between the Sun and the Moon. The Earth casts shadow on the Moon.

39. What is Total Lunar Eclipse?

Ans. When the whole moon is in the umbra region of the earth's shadow, it is not visible at all. This is called Total Lunar Eclipse.

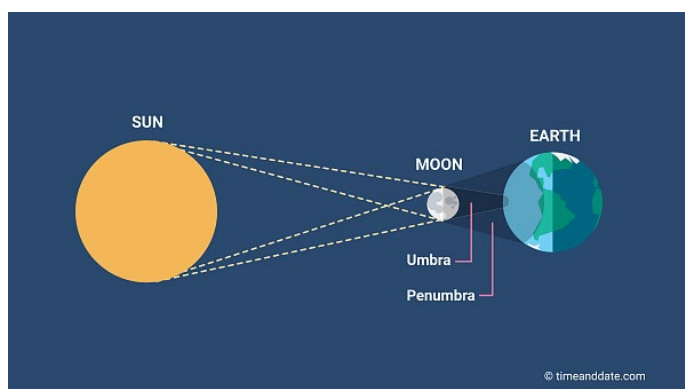


40. What is Partial Lunar Eclipse?

Ans. When the moon comes slightly out of line. It is not completely in the umbra region of the Earth's Shadow. It receives some light from the sun that it reflects to earth. This makes it partially visible. This is called Partial Lunar Eclipse.

41. What is Solar Eclipse?

Ans. A solar Eclipse occurs when the sun, Earth and the Moon are in a straight line with the moon in between the Sun and the Earth. The moon casts its shadow on the Earth.



42. When Total Solar Eclipse happen?

Ans. A total solar eclipse happens when the Moon completely covers the Sun. It can take place only when the Moon is near perigee, the point of the Moon's orbit closest to the Earth. You can see a total solar eclipse only if you are in the path where the Moon casts its darkest shadow, the umbra.

43. When Partial Solar Eclipse happen?

Ans. A partial solar eclipse occurs when the Moon only partially obscures the Sun's disk and casts only its penumbra on the Earth.