

Class 8 light and vision (Reflection and eye) CBSE Solved Test Paper - 03

1. Q. Why are multiple images are formed when two mirror are placed at an angle to each other?

Ans: This happen because image formed by first mirror act as an object for 2nd mirror.

No of image = $\frac{360}{\theta} - 1$ [0 degree or Parallel to each other --> Infinite number]

2. Q. What do you mean by persistence of vision?

Ans : Image of an object retain on retina for 1/16 th of a sec even after removed is called persistence of vision. This form the basis of the principle of cinematography.

3. Q. How persistence of vision form basis of the principle of cinematography?

Ans: in moving cinema, we take still pictures. The sequence of still pictures are projected on screen at rate of 24 images per second (persistence of vision is 1/16th of sec.)The successive images merge smoothly and give us feeling of movie.

4. Q. A person whose retina is damaged cannot see why?

Ans: This happens because retina acts as seen on which image is formed by eye lens.

5. Q. Does diffused reflection means failure of the law of reflection?

Ans: NO. Law of reflection apply to all reflecting surfaces whether plane or curved.

6. Q. Why are you not able to see complete rainbow at all places?

Ans: this is because rainbow is formed due to dispersion of light through water droplets in atmosphere.

7. Q. Why are red signals used in traffic signals to stop vehicles?

Ans: This is because red light scattered least through atmosphere due to longer wave length and seen from distance.

8. Q. When two prisms are placed in succession we can get white light back. Why?

Ans: This happen because the dispersed colour of first prism when pass through the inverted prism converge back into white.

10. Q. An object is placed in front of a plane mirror. If the mirror is moved away from the object through a distance x, by how much distance will the image move?

Ans: 2x meter

11. Q. A concave mirror is made up by cutting a portion of a hollow glass sphere of radius 30 cm. Calculate the focal length of the mirror.

Ans: $f = r/2 = 15$ cm

12. Q. An object 0.5 m tall is in front of a plane mirror at a distance of 0.2 m. what is the size of the image formed

And: $H_i = H_o = 0.5$ m

13. Q. Write uses of concave mirror?

Ans: Concave mirrors are used in torches, search lights and head lights of vehicles to get parallel beams of light. They are used as shaving mirrors to see larger image of the face. They are used by dentists to see larger images of the teeth. Large concave mirrors are used to concentrate sunlight to produce heat in solar furnaces

14. Q. Why does convex mirror used as rear-view mirrors in vehicles?

Ans: Convex mirrors give erect diminished images of objects. They also have a wider field of view than plane mirrors.

15. Q. Why concave mirrors are used In torches, search lights and headlights of vehicles?

Ans: In torches, search lights and headlights of vehicles the bulb is placed very near to the focus of the reflector to get parallel beams of light.

16. Q. What is Astigmatism?

Ans: Astigmatism is a condition in which the surface of the cornea is not spherical, it causes a blurred or slightly twisted image to be received at the retina. It is quite common to have only one eye affected, whilst the other is normal.

17. Q. What is myopia and how it is caused and cured?

Ans: Myopia: A person cannot see nearby objects clearly but cannot see distant objects distinctly.

A person with this defect has the far point nearer than infinity. The image of a distant object is formed in front of the retina.

This defect may arise due to (i) excessive curvature of the eye lens(decreased focal length), or (ii) elongation of the eyeball. This defect can be corrected by using a concave lens of suitable power.

18. Q. What is Hypermetropia and how it is caused and cured?

Ans: Hypermetropia: A person with Hypermetropia can see distant objects clearly but cannot see nearby objects distinctly. The near point, for the person, is farther away from the normal near point (25 cm).

A person with hyper myopic eye has to keep a reading material much beyond 25 cm from the eye for comfortable reading. This is because the light rays from a closeby object are focussed at a point behind the retina

This defect arises either because (i) the focal length of the eye lens is too long, or (ii) the eyeball has become too small. This defect can be corrected by using a convex lens of appropriate power.

18. Q. What is Presbyopia and how it is caused and cured?

Ans: A person cannot see nearby and far objects comfortably and distinctly without corrective eye-glasses. This defect is called Presbyopia. It arises due to the gradual weakening of the ciliary muscles and diminishing flexibility of the eye lens. Such people often require bifocal lenses consists of both concave and convex lenses. The upper portion consists of a concave lens. It facilitates distant vision. The lower part is a convex lens. It facilitates near vision. These days, it is possible to correct the refractive defects with contact lenses or through surgical interventions.