

Important Questions for Class 8

Science

Chapter 16 – Light

Multiple Choice Questions

1 Mark

1. When all the parallel rays reflected from a rough or irregular surface are not parallel, the reflection is known _____.

A. multiple reflections

B. regular reflection

C. lateral inversion

D. diffused reflection

Ans: D. diffused reflection.

2. The angle between normal and incident rays is called the _____.

A. angle of incidence

B. angle of reflection

C. angle of refraction

D. normal

Ans: A. angle of incidence

3. Which part of the eye protects the interior from accidents?

A. pupil

B. retina

C. cornea

D. rods

Ans: C. Cornea protects the eye's sensitive components from dirt, bacteria, and other foreign particles.

4. Which one of the following works on the basis of multiple reflections?

A. kaleidoscope B. microscope C. telescope D. periscope

Ans: A. Kaleidoscope. A kaleidoscope is an optical device containing two or more reflecting surfaces that are angled at an angle to each other.

5. Angle of incidence is _____ equal to the angle of reflection

A. Sometimes

B. Never

C. always

D. almost

Ans: C. Always

6. White light consist of _____ colours

A. six

B. seven

C. eight

D. nine

Ans: B. Seven. Red, orange, yellow, green, blue, indigo, and violet are the colors that make up white light.

Short Answer Type Question

2 Marks

7. Image formed in a plane mirror undergoes _____.

Ans: lateral inversion. The reversal of a mirror image, where the right side of the object appears on the left side behind the mirror, is known as lateral inversion.

8. Name the part of the eye which gives distinctive color.

Ans: Iris is the part of the eye that gives distinctive color. The iris is a colored ring that surrounds our pupils and gives our eyes their distinct color.

9. The lens focuses light on the back of the eye, on a layer called_____.

Ans: Retina. Thousands of light-sensitive cells (rods and cones) and other nerve cells make up the retina, which receives and organizes visual data. Through your optic nerve, your retina conveys this information to your brain, allowing you to see.

10. What is a blind spot?

Ans: There are no sensory cells at the intersection of the optic nerve and the retina, hence vision is impossible there. This is referred to as the blind spot.

11. _____ are sensitive to bright light in eye.

Ans: Cones. In the retina, cones are a type of photoreceptor cell. They are responsible for our color perception. Cones are concentrated in the macula, which is located in the center of our retina and helps us see small details.

12. Lack of which nutrient is responsible for eye troubles?

Ans: Deficiency of Vitamin A causes eye troubles. Xerophthalmia is a progressive eye disease caused by a lack of vitamin A. Xerophthalmia can progress to night blindness or more serious damage to the cornea, the outer layer of the eye.

13. Some persons may lose their eyesight because of a _____ or an _____. **Ans: Disease, injury.**

14. Who developed a system for visually challenged persons and published it in 1821?

Ans: Braille was developed in the 1820s by Louis Braille and is the most widely used resource for visually impaired people. Louis Braille. Blind individuals read and write using the Braille system. A set of raised bumps or dots can be sensed with a finger in the Braille system.

15. Do you think a ray of light is an idealization? Why?

Ans: Yes a ray of light is an idealization. In reality, there is a narrow beam of light that is made up of several rays. For simplicity, the term ray is used for a narrow beam of light.

16. Give any two uses of periscope.

Ans: Submarines, tanks, and soldiers in bunkers use periscopes to see things outside.

17. _____ system helps visually challenged persons to read and write.

Ans: Braille. Braille is a written language for the blind in which characters are represented by patterns of raised dots that can be felt with their fingertips.

18. The impression of an image does not vanish immediately from the retina. It persists there for about _____ of a second.

Ans: $1/16^{\text{th}}$

Short Answer Type Question

3 Marks

19. a. Define dispersion of light.

b. Give an example of dispersion.

Ans: a. Dispersion of light is referred to as splitting of light into its constituent colors.

b. Rainbow is a natural phenomenon that shows dispersion.

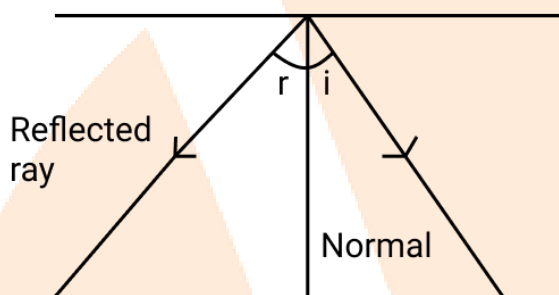
20. Define the following,

a. Incident ray

b. reflected ray.

Ans: a. Incident ray is defined as the light ray, which strikes any surface.

b. The ray that returns from the surface after it has been reflected is known as the reflected ray.



The angle of incidence equals the angle of reflection, according to the law of reflection.

21. List the food items which contain vitamin A.

Ans: Vitamin A is abundant in raw carrots, broccoli, and green vegetables (such as spinach) as well as cod liver oil. Vitamin A is found in foods including eggs, milk, curd, cheese, butter, and fruits like papaya and mango.

22. State laws of reflection.

Ans: 'The angle of incidence is always equal to the angle of reflection,' says the first law of reflection.

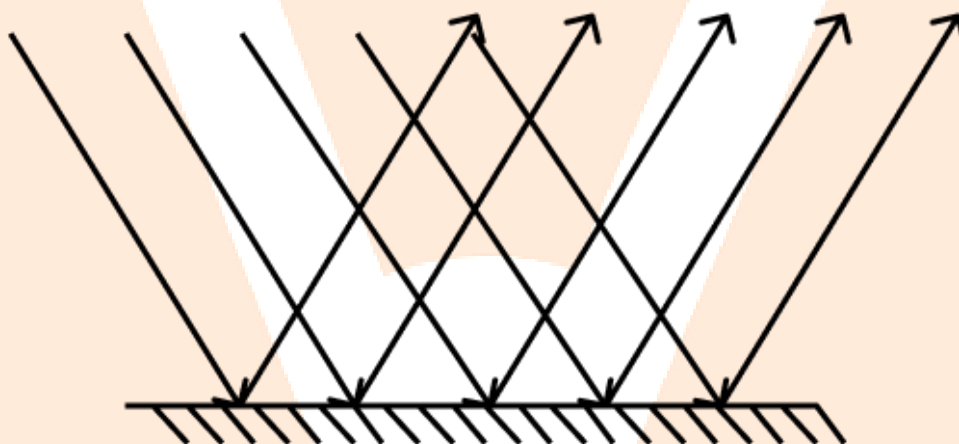
The incident rays, reflected rays, and normal rays drawn at the point of incidence to the reflecting surface all lie in the same plane, according to the second law of reflection.

23. Give any four examples of luminous objects.

Ans: The Sun, fire, flame of a candle and an electric lamp are the examples of luminous objects.

24. Describe regular reflection with the help of a diagram.

Ans: Regular reflection is reflection from a smooth surface such as a mirror. Regular reflection creates images.



25. What is the function of retina?

Ans: The lens directs light to the retina, which includes a number of nerve cells. The nerve cells' sensations are subsequently transferred to the brain via the optic nerve.

26. Given an example to show that reflected light can be reflected again.

Ans: Stand in front of a mirror and tell a friend to hold a mirror behind you so you can see your hair cut; your hair picture will appear in the mirror in front of you; this is the best example of reflected light returning to the source.

27. Can we see objects in dark? Why?

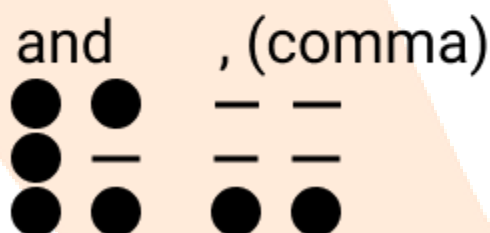
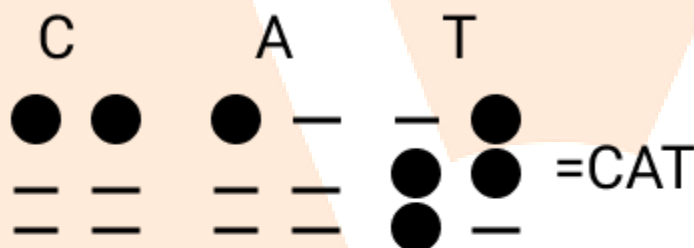
Ans: When light reflected by an object reaches our eyes, we can see it. However, when there is no light reflected by the object, we cannot see it.

Long Answer Type Question

6 Marks

28. How does braille system work?

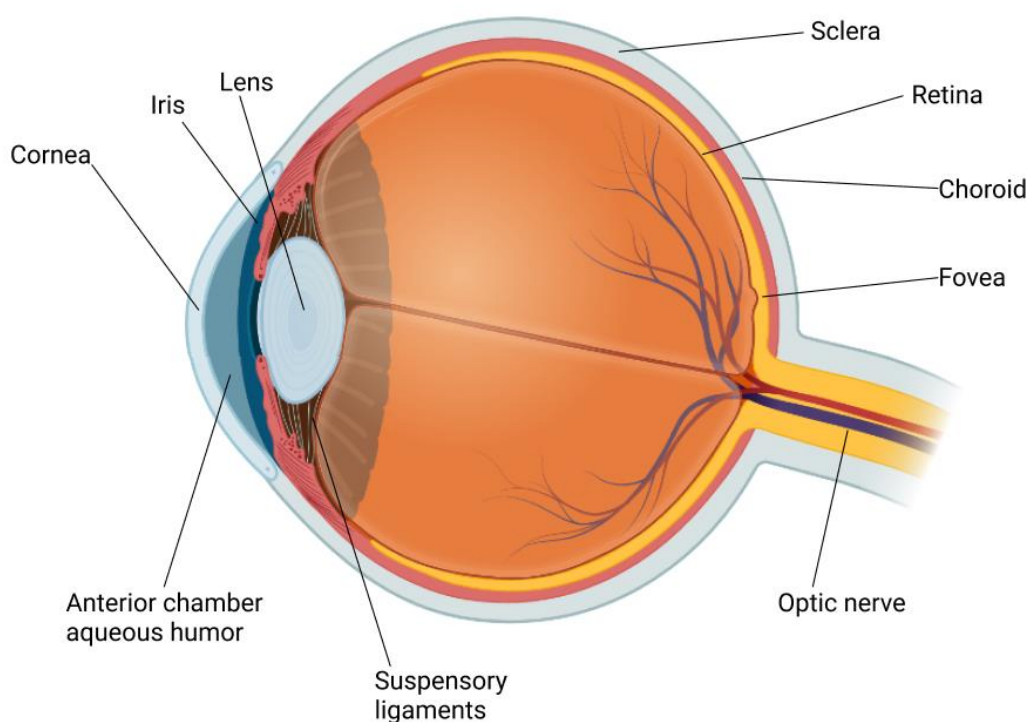
Ans: There are 63 dot patterns or characters in the Braille system. A letter, a combination of letters, a common word, or a grammatical sign is represented by each character. Dots are arranged in cells of two vertical rows of three dots each. Below are various dot patterns that symbolise English letters and common words.



When embossed on Braille sheets, these patterns assist visually impaired people in recognising words by touch. The dots have been slightly raised to make them easier to touch.

29. Explain the structure of the eye with a neat labelled diagram.

Ans: The shape of the eye is generally spherical. The eye's outer layer is white. It is tough in order to protect the interior of the eye from damage. The cornea is the translucent front section of the eye. The iris is a dark muscular tissue that lies behind the cornea. The pupil is a tiny aperture in the iris that allows light to pass through. The iris regulates the size of the pupil. The iris is the colored portion of the eye.

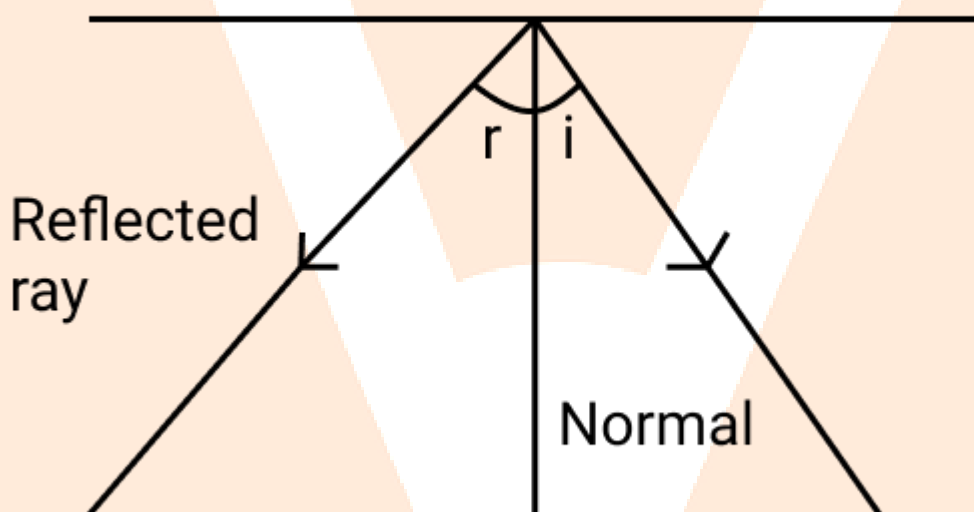


30. How do you make a kaleidoscope?

Ans: Get three rectangular mirror strips, each about 15 cm long and 4 cm broad, to build a kaleidoscope. To make a prism, join them together. Place the mirrors in a circular cardboard tube or a tube made of thick chart paper. Assemble the tube so that it is slightly longer than the mirror strips. Close one end of the tube with a cardboard disc with a hole in the middle that you can see through. Put a piece of the transparent plastic sheet under the cardboard disc to make it more durable. Fix a round plane glass plate at the opposite end, touching the mirrors. Place numerous little pieces of colored glass on this glass plate (broken pieces of colored bangles). A ground glass plate is used to close this end of the tube. Make sure there's enough space for the color pieces to move around. Now, the kaleidoscope is ready to use.

31. Demonstrate an activity to show that the angle of incidence is always equal to the angle of reflection.

Ans: On the paper, draw lines to illustrate the position of the plane mirror, incident ray, and reflected ray. At the place where the incident ray reaches the mirror, draw a line at a 90° angle to the line representing the mirror. The normal to the reflecting surface at that location is this line. The angle of incidence and the angle of reflection should be measured. Change the angle of incidence and repeat the activity multiple times. The angle of incidence is always equal to the angle of reflection when the experiment is accurately carried out.



32. Write any five ways to take care of your eyes.

Ans: Some possible measures to take care of the eyes are as follows:

- Use appropriate eyewear if advised.
- It is harmful to the eyes to have too little or too much light. Eye strain and headaches are caused by insufficient light. The retina can be damaged by too much light, such as that of the Sun, a strong lamp, or a laser torch.
- Do not look directly at the Sun or bright light.

d. Do not rub your eyes. If dust particles get into your eyes, rinse them out with clean water. If your condition does not improve, see a doctor.

e. Always read at a comfortable distance for your eyes. Avoid bringing the book too close to your eyes or keeping it too far away when reading.

