

## Light class 8

Fill in the blanks

1. A .....image can be received on a screen
2. Nerve cells which sense color are called .....
3. Image formed on the plane mirror under goes .....inversion
4. Angle  $i$  is 25 degree, then the angle formed by the incident ray and the mirror is .....
5. The ..... point for a normal eye is infinity
6. A normal eye can't clearly see objects closer than .....cm
7. In regular reflection, the reflected rays remain ... ..to each other.
8. Diffused reflection takes place from .....surface.
9. Transparent front part of eye is known as .....
10. The kaleidoscope uses .....to produce patterns
11. The hole in the eye that controls the amount of light that enters is .....
12. A ..... image can be received on a screen
13. Human eye can focus objects at different distances by adjusting the focal length of the eye lens.  
This is due to.....
14. The least distance of distinct vision for a young adult with normal vision is about .....
15. The change in focal length of an eye lens is caused by the action of .....
16. The part of the eye which is equivalent to the film in a camera is .....
17. The .....consists of muscles that expand and contract the pupil
18. Splitting of white light into seven colors is called .....
19. Behind the cornea there is a dark muscular structure called .....which controls the size of the pupil
20. Image formed in plane mirror undergoes .....inversion
21. Two mirrors inclined at an angle of 60 degree with each other forms ....number of images
22. ....part of eye gives it its distinct color

23. .... part of the eye acts like a screen
24. The image persists for about ....of a second on retina
25. The most comfortable distance at which one can read with a normal eye is about ....
26. A person 1m in front of a plane mirror seems to be .....m away from his image
27. The size of pupil becomes ..... when you see in dim light
28. Night birds have .... cones than rods in their eyes
29. Angle of incident is ....equal to angle of reflection
30. Marble floor with water spread over it produces ..... type of reflection
31. We are able to see objects due to ....reflection
32. We get .....images if two plane mirrors are placed at an angle of 30 degree to each other
33. The part of eye gives color to the eyes.....
34. We can see objects at all places and from every direction because of .....
35. The far point of a normal eye is .....
36. The near point of a normal eye is .....
37. ....are used in submarines to see things outside
38. Nerve cells which sense color are called .....
39. The phenomenon which enable us to see movie in a cinema hall is .....
40. A normal eye can see ..... And ..... object clearly
41. If advised, use suitable .....to correct your eye sight
42. The outermost part of human eye is.....
43. No image is formed on .....
44. Rainbow is the example of .....

## Short answers

1. What is accommodation? How is it achieved in the human eye?
2. What is Braille?
3. A doctor shines a bright torch into a patient's eye. He notices that the pupil doesn't change. Does the patient have normal eyes? Why or why not?
4. Uses of plane mirror.
5. What type of reflection does a sheet of ordinary paper produce?
6. Under what condition a light ray retrace its path after reflection?
7. If the angle of  $i$  is 25 degree what is the angle made by angle  $i$  and  $r$ ?
8. What is multiple reflections?
9. What happens to the image distance in the eye when we increase the distance of an object from the eye?
10. Name the part of the human eye on which the image of an object is formed
11. Name the type of lens of a human eye
12. Which type of lens is used by a person suffering from hypermetropia ?
13. Why can a chicken see only in bright light?
14. Behind the eye there is an opaque diaphragm which gives color to the eye. What is it?
15. Does diffused reflection mean failure of the laws of reflection?
16. Two example of regular and irregular reflection each
17. What is the angle of incidence of a ray if the reflected ray is at an angle of 90 degree to the incident ray?
18. On which principle does periscope work? Give two uses of periscope
19. What is blind spot?
20. Give one application of persistence of vision
21. Explain the function of iris, retina
22. Which concept is used in making animation films?

23. How is cataract rectified?
24. A child is not able to read clearly the work written on the black board from a back seat. Name the defect he has. Also state the correction
25. Which vitamin is required for good health of eyes? Write any two sources.
26. How many times a ray of light would be reflected by two plane mirrors placed parallel and facing each other?
27. The angle between incident ray and reflected ray is 90 degree. What is the value of the angle  $i$ ?
28. Name a device which works on the reflection of reflected light?
29. We are unable to see in the dark. Why?
30. Can the image formed by plane mirror be obtained on screen?
31. Give two characteristics of eyes of owl which help it to see clearly during night
32. List two defects of human eyes
33. What is dispersion of light?
34. Differences between regular and irregular reflection
35. What is multiple reflection?
36. What formula do you use to find out the number of images formed by two plane mirrors
37. List four characters of image formed by the plane mirror
38. Name one age related defects of human eye
39. Which cell on the retina is responsible for color?
40. What happens to the size of the pupil when you see in a dim light?
41. Name the ray of light which strikes any surface
42. What is lateral inversion?
43. Explain how many images of a candle will be formed if it is placed between two parallel plane mirrors separated by 40 cm?

44. Explain how a hair dresser makes your hair at the back of your head after the haircut is complete
45. The light ray which strikes any surface is called
46. What is mirror?
47. How many colours are present in the sun light?
48. How many types of nerve cells are present on retina?
49. Which vitamin is good for human eye? Write two sources
50. Write two laws of reflection

### **Give reason**

1. We are not able to see clearly for some time when we enter a dark room from bright light outside the room. Give reason
2. Owl can see very well in night but not during the day. Give two reasons.
3. Lateral inversion occurs in a plane mirror
4. Pupil of our eyes contract in bright eyes
5. Why do we feel glare when headlight falls into our eyes at night?

### **Definition**

Incident ray, reflected ray, normal, blind spot, persistence of vision,

What are the functions of the following parts

1. Iris
2. Retina
3. Eye lens
4. Ciliary muscle
5. Optic nerve

6. Cornea

7. pupil

## Differentiation

1. myopia and hypermetropia

2. Regular and diffused reflection

3. Image formed by plane mirror and cinema screen

4. Rod and cone cells

## Match the following

A	B
Optic nerve	The angle between the angle $i$ and normal
VIBGYOR	Carries visual images to the brain
cataract	Doesn't have rod and cone cells
Divergent beam of light	Produced when white length splits
Angle of incidence	Eye lens become cloudy
Blind spot	Appear to spread from a point
	It has rod and cone cells

## True false

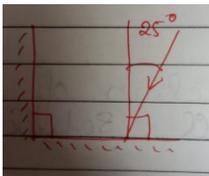
- a) Too little or too much light is bad for eyes
- b) in irregular reflection angle of i and angle of r is different
- c) an image is formed on plane mirror is laterally inverted
- d) two mirrors inclined to each other give multiple reflection
- e) an unpolished surface can also acts like a mirror

## Numerical

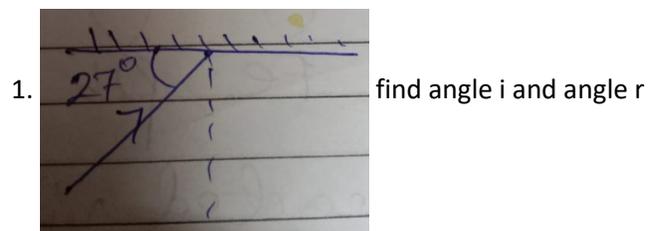
1. How many images of an object will be formed when inclined at the following angles

- a) 120 degree
- b) 60
- c) 45
- d) 180
- f) 90

diagrams 1.



complete the diagram

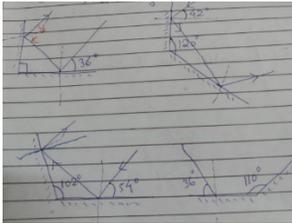


find angle i and angle r



6. A boy is standing in front of a plane mirror at a distance of 2m. what is the distance between the boy and his image? Then the boy moves 0.5m towards the mirror. Find the new distance between the boy and his image.

7.

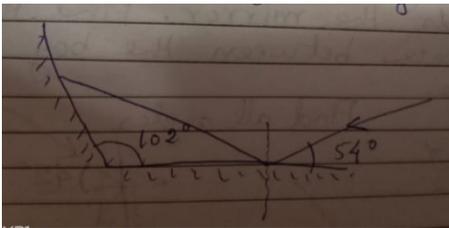


find all images

8. Anita stands 7m in front of a plane mirror with a painting on a wall 3m, behind her. Calculate the distance between

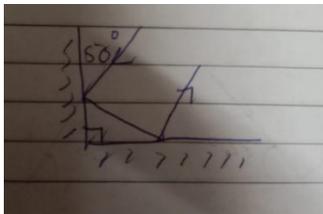
- Anita and image of the painting
- Anita's image and image of painting
- Anita and her image

9.



find angle i and r

10.



find all angles