PHYSICS

BOOKS - NAND LAL PUBLICATION

LIGHT

Questions Asked In Between The Chapter

1. How is seeing made possible?

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2. Can any one see in the dark?

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3. Can you tell in which direction the light falling on a surface will be reflected?

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4. What do you infer.

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5. Paheli asked him to recall those features :

Was the image erect or upside down?

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6. Paheli asked him to recall those features :

Did the image appear at the same distance behind the mirror as the object was in front of it?

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7. Could it be obtained on a screen?

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8. Extend them further. Do they meet? Extend them backwards. Do they meet now?

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9. Are they parallel to one another?

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10. I have a question. Can the reflected rays be further reflected if incident on another mirror?

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11. Do you know how you could see the hair at the back of your head?

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12. Can you explain how reflection from the two mirrors enables you to see objects which are not visible directly?

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13. What happens if two plane mirror are used in combination?

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14. Do you know how you could see the hair at the back of your head?

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15. How can you explain this?

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16. When you see in dim light the size of your pupil becomes:

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17. In which case do you need to allow more light in the eye, when the light is dim or bright?

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18. What kind of lens is thicker at the centre?

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19. Do you see the bird in the cage?

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Questions Asked In Between The Chapter Activity 16 1

1. What do you observe? Is the solution (rust suspension) acidic or basic?

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2. Enter the data in Table

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3. What would happen if I threw the light on the mirror along the normal?

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Exercises

1. Suppose you are in a dark room. Can you see objects in the room? Can you see objects outside the room? Explain.

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2. Differentiate between regular and diffused reflection. Does diffused reflection mean the failure of the laws of reflection?

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3. Mention against each of the following whether regular or diffused reflection will take place when a beam of light stricks. Justify your answer in each case.

Polished wooden table

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4. State the laws of reflection.

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5. Describe an activity to show that the incident ray, the reflected ray, normal, the point of incidence lie in the same plane.

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6. Fill in the blanks in the following:

A person 1 m in front of a plane mirror seems to be _____ m away from his image.

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7. Fill in the blanks

If you touch your .....ear with right hand in front of a plane mirror it will be seen that your right ear is touched with.....

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8. Fill in the blanks

The size of pupil becomes..... when you in dim light .

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9. Fill in the blanks

Night birds have .....cones than rods in their eyes.

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10. Describe the construction of a Kaleiodeoscope.

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11. Draw a labelled sketch of the human eye.

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12. Gurmit wanted to perform activity 16.8 using a laser torch . Her teacher advised her not do so. Can you explain the basis of the teacher's advice?

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13. Explain how can you take care of your eyes.

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14. What is the angle of incidence of a ray if the reflected ray is at an angle of 90° to the incident ray?

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15. How many images of a candle will be formed if it is placed between two parallel plane mirrors separated by 40 cm?

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16. Two mirrors meet at right angles. A ray of light is incident on one at an angle of 30° as shown is figure. Draw the reflected ray from the second mirror.

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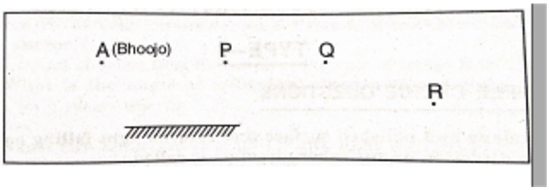
17. Bhooja stands at A just on the side of a plane mirror as shown in figure. Can he see

himself in the mirror? Also can be see image of objects situated at P, Q and R?



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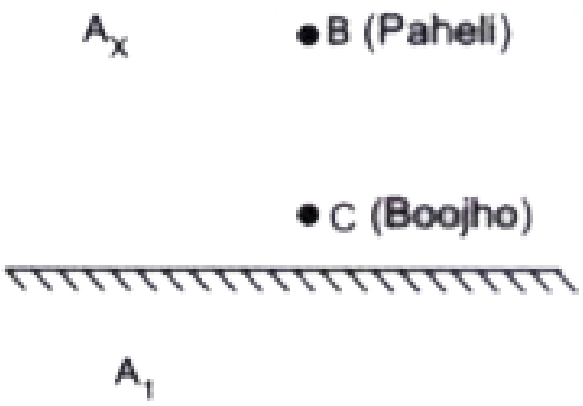
18. Find out position of the image of an object situated at A in the plane mirror (Fig.).



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19. When Paheli moves from B to C, where does the image of A move?

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Exercises Choose The Correct Options In The Questions

1. Angle of incidence is equal to angle of reflection

A. Always

B. Sometimes

C. Under special conditions

D. Never

Answer: A

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2. Image formed by a plane mirror is

A. virtual, behind the mirror and enlarged

B. virtual, behind the mirror and of the same size as the object

C. real, at the surface of the mirror and enlarged

D. real, behind the mirror and of the same size as the object.

Answer: B

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Extended Learning Activities And Project

1. Make your own mirror. Take a glass strip or glass Slab. Clean it and put it on a white sheet of paper. See yourself in the glass. Next put the glass slab on a black sheet of paper. Again look into the glass. In which case do you see yourself better and why?

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2. Make friends with some visually challenged students. Inquire from them how they read and write. Also find out how they are able to recognise objects, hurdles and currency notes.

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3. Explain how can you take care of your eyes.

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4. Survey your neighbourhood. Find out how many children below the age of 12 years use spectacles. Find out from their parents, what, in their view could be the reason for the weak eyesight of their children.

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Additional Questions Multiple Choice Questions

1. Which of the following is a non-luminous object? (

A. sun

B. star

C. moon

D. fire

Answer: c

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2. The human eye forms the image of an object at its:

A. retina

B. cornea

C. iris

D. none of these

Answer: a

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3. The angle of incidence is the angle between

,

A. incident ray and reflected ray

B. incident ray and normal

C. reflected ray and normal

D. normal and the mirror

Answer: b

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4. Image formed by a plane mirror is

A. upside down

B. smaller

C. bigger

D. laterally inverted

Answer: d

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5. When two mirrors are kept at right angles to each other with a coin in between them, the number of images of the coin would be ,

A. 1

B. 2

C. 3

D. 4

Answer: c

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Additional Questions Fill In The Blanks

1. Two mirrors inclined to each other give.....images.

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2. Visually challenged person can read and write using.....system

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3. The objects which emit their own light are known as.....objects.


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4. Angle of incidence is equal to angle of reflection


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5. Fill in the blanks

Night birds have .....cones than rods in

their eyes.

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Additional Questions Write T Or F For The Following Statements

1. In a periscope, two plane mirrors are used.

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2. The retina contains several nerve cells. true/ false

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3. The size of the pupil is controlled by cornea. true / false

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4. Diffused reflection takes place from a polished surface. true/ false

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5. Bifocal lens is an optical aid. true/ false

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Additional Questions Answer The Following Questions In One Word

1. Name a natural phenomenon based on the principle of dispersion.

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2. How many mirrors are used to make kaleidoscope?

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3. What do we call the band of seven colours obtained on the screen after dispersion?

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4. What do we call the ray of light which falls on an object?

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5. What kind of image can be obtained on a screen?

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Additional Questions Very Short Answer Type Questions

1. What are illuminated objects?

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2. Define normal.

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3. What is reflection of light? State the laws of reflection of light.

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4. What is the cause of myopia? How can it be corrected ? Explain with a labelled diagram.

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5. What is the principle on which a kaleidoscope works?

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Additional Questions Short Answer Type Questions

1. What is cataract? How is it corrected?

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2. What is blind spot of eye?

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3. Write the characteristics of image formed in a plane mirror

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4. What is a periscope? Write some of its uses.

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5. For how long does the image remain at retina?

6. What are different types of resources used to help visually challenged persons?

7. Explain giving examples, how eyes of animals are different in shapes.

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Additional Questions Long Answer Type Questions

1. Name the parts of human eye and explain their functions.

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Additional Questions Higher Order Thinking Skills Hots

1. We are able to see objects around us due to diffused reflection. Justify.

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Additional Questions Value Based Question

1. Manya's science teacher explained in the class that many children now a days are

having weak eye sight because they do not take proper diet and maintain poor life style by playing games on mobile and watching TV till late night. Manya discussed this with her mother and promised to take proper meal so that she can maintain a good eye sight.

What are the common defects of vision?

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2. Manya's science teacher explained in the class that many children now a days are

having weak eye sight because they do not take proper diet and maintain poor life style by playing games on mobile and watching TV till late night. Manya discussed this with her mother and promised to take proper meal so that she can maintain a good eye sight.

What are the qualities shown by Manya?

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Additional Questions Self Practice Problems

1. Differentiate between a real image and a virtual image.

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2. How many colours are present in white sunlight?

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3. What is the most convenient distance for reading by a normal eye?

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