



PHYSICS

BOOKS - NAND LAL PUBLICATION

LIGHT : REFLECTION AND REFRACTION

Intext Questions

1. Define the principal focus of concave mirror.



Watch Video Solution

2. The radius of curvature of a spherical mirror is 20cm. What is its focal length?



[Watch Video Solution](#)

3. Name a mirror which can give an erect and enlarged image of an object



[Watch Video Solution](#)

4. Why do we prefer a convex mirror as a back view mirror in vehicles?



[Watch Video Solution](#)

5. Find the focal length of a convex mirror whose radius of curvature is 32 cm.



[Watch Video Solution](#)

6. A concave mirror produces three times magnified (enlarged) real image of an object placed at 10cm in front of it, where is the image located?



[Watch Video Solution](#)

7. A ray of light travelling in air enters obliquely into water. Does the light ray bend towards normal or away from normal? Why?



[Watch Video Solution](#)

8. Light enters from air to glass having refractive index 1.50 what is speed of light in glass? Speed of light in vacuum is $3 \times 10^8 \text{ m s}^{-1}$.



[Watch Video Solution](#)

9. Find out from table 10.3 of the text-book, the medium having highest optical density. Also find the medium with lowest optical density?



[Watch Video Solution](#)

10. Refractive indices of kerosene, turpentine and water are 1.44, 1.47 and 1.33 respectively, in which material does the light travel fastest and why?



Watch Video Solution

11. The refractive index of diamond is 2.42. What is the meaning of this statement?



Watch Video Solution

12. Define 1 dioptre of power of a lens



Watch Video Solution

13. A convex lens forms a real and inverted image of a needle at a distance of 50 cm from it. Where is the needle to be placed in front of the convex lens if the image is equal to size of the object? Also, find the power of the lens?



Watch Video Solution

14. Find the power of a concave lens of focal length 2 meters?



Watch Video Solution

Exercises

1. Which one of the following material cannot be used to make a lens?

A. Glass

B. Plastic

C. Clay

D. Water

Answer: D



Watch Video Solution

2. The image formed by a concave mirror is observed to be virtual, erect and larger than object, where should be the position of the object?

A. At the centre of curvature

B. Beyond the centre of curvature

C. Between the pole of the mirror and its
principal plus

D. Between the principal focus and the
centre of adventure

Answer: D



Watch Video Solution

3. Where should an object be placed in front of a convex lens to get a real image of the size of the object?

A. At twice the focal length

B. At infinity

C. Between the optical centre of the lens and its principal focus .

D. At the principal focus of the lens

Answer: C





4. A spherical mirror and a thin spherical lens have each a focal length of -15 cm. The mirror and lens are likely to be:

A. both concave

B. both convex

C. the mirror is concave and the lens is convex

D. the mirror is convex .but the lens is concave .

Answer: A



Watch Video Solution

5. No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be:

A. only concave

B. only convex

C. either plane or convex .

D. only plane

Answer: D



Watch Video Solution

6. Which of the following lenses would you prefer to use while reading small letters in a dictionary?

A. A concave lens of focal length 50 cm

B. A convex lens of focal length 5 cm

C. convex lens of focal length 50 cm

D. A concave lens of focal length 5 cm .

Answer: C



Watch Video Solution

7. We wish to obtain an erect image of an object, using a concave mirror of focal length 15cm what should be the range of distance of

the object from the mirror? What is the nature of the image ? Is the image larger or smaller than object? Draw a ray diagram to show the image formation in this case.



Watch Video Solution

8. Name the type of mirror used in the following situation: Solar furnace



Watch Video Solution

9. One half of a convex lens is covered with a black paper .Will this lens produce a complete image of the object? Explain your observation



Watch Video Solution

10. An object 5 cm in length is held 25cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find the position, size and the nature of image formed



Watch Video Solution

11. A concave lens of focal length 15cm forms an image 10 cm from the lens. How far is the object placed from the lens? Draw ray diagram.



Watch Video Solution

12. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and nature of the image



Watch Video Solution

13. The magnification produced by plane mirror is +1. What does this mean?



Watch Video Solution

14. An object 5.0 cm of length is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 30 cm. Find the position of the image, its nature and size.



Watch Video Solution

15. An object of size 7.0 cm is placed at 27 cm in front of a concave mirror of focal length 18 cm. At what distance from the mirror should the screen be placed, so that a sharp focussed image can be obtained? Find the size and the nature of the image



Watch Video Solution

16. Find the focal length of a lens of power- 2.0
D.What type of lens this?



[Watch Video Solution](#)

17. A doctor has prescribed a corrective lens of power + 1.5 D. Find the focal length of lens. Is prescribed lens diverging or converging?



[Watch Video Solution](#)

[Additional Questions](#)

1. What are new cartesian sign coventions used for reflectionin spherical mirror? What is the mirror formula?



[Watch Video Solution](#)

2. What are the uses of concave and convex mirrors?



[Watch Video Solution](#)

3. Why do we prefer a convex mirror as back view mirror in vehicles?



[Watch Video Solution](#)

4. What happens to the wavelength of light when it goes from rarer to denser medium?



[Watch Video Solution](#)

5. A convex lens forms a virtual image of an object. What is the position of the object?



[Watch Video Solution](#)

6. What do you mean by a lens? What are concave and convex lenses? What do you mean by Principal axis, Optical centre and Principal focus and focal length of a lens?



[Watch Video Solution](#)

7. A virtual and enlarged image is formed by a
.....mirror.



Watch Video Solution