

Assignment

Class :X

Physics

1. Why is a convex lens used by jewelers to magnify precious stone and see flaws or defects in them ?

2.(a) Draw a neat diagram of human eye.

(b) Name and label:

(i) the light sensitive membrane.

(ii) the muscular diaphragm that control the size of pupil.

3.(a) What happens when a ray of light strikes the surface of separation between the two media at right angle ?

(b) Light enters from air into diamond which has refractive index 2.42. Calculate the speed of light in diamond.

4(a) Draw a neat ray diagram to show the formation of an image when a convex lens is used as a projector.

(b) An object placed 50 cm from a lens produces a virtual image at a distance of 10 cm from the lens. Find the focal length of the lens and also state the type of the lens used. Also draw a ray diagram.

5.(a) What is the nature of mirror having a focal length of +15 cm ?

(b) Why are a convex mirror used as a rear view mirror in vehicles ?

©An object is placed at a distance of 10 cm from a concave mirror of focal length 20 cm. Draw a ray diagram to show the image formation.

(d) Draw a ray diagram to describe the nature, position and size of the image formed by a concave mirror for an object when it is placed at the focus of the mirror.

6. Read the passage carefully and answer the following questions given below it.

You are given that the size of the eye ball is nearly 2cm and the normal eye can adjust the focal length of its eye-lens to see objects situated anywhere from 25cm to an infinite distance away from it.

(a) What is the focal length (in metres) of the normal eye-lens, when it is viewing a very far object?

(b) What is the power of eye-lens in this case?

(c) A normal eye is viewing an object kept 25cm away from it. What is the focal length of the eye-lens in this case?

(d) What is the power of the eye-lens for this (normal) near-viewing?

(e) A short sighted person cannot see beyond 2m. Calculate the power of the lens to correct his vision. State the nature of corrective lens also.