Chapter: Light- Numerical Practice questions class 10 Paper- 4

1.An object 5.0 cm in length is placed at a distance of 10cm from a convex mirror of radius of curvature 150cm. Find the position, nature and size of the image.

2.Find the position, nature and size of image of an object 4cm high placed at a distance of 10 cm from a concave mirror of focal length 20 cm.

3.An object is placed at a distance of 25 cm from the pole of a spherical mirror which forms a real, inverted image on the same side of object at 37.5 cm from the pole. Calculate the focal length of mirror and find nature of the mirror.

4.An object 2.0 cm in size is placed 20.0 cm in front of a concave mirror of focal length 10.0 cm. Find the distance from the mirror at which a screen should be placed in order to obtain a sharp image. What will be the size and nature of the image formed?

5.Find the position of an object which when placed in front of a concave mirror of focal length 20 cm produces a virtual image, which is twice the size of the object.

6.A concave lens has a focal length of 15cm. At what distance should an object 10 cm long be placed so that it forms an image of 10 cm from the lens? Find the nature and size of the image formed.

7.A convex lens has a focal length of 30 cm. Calculate at what distance should the object be placed from the lens so that it forms an image at 60 cm on the other side of the lens. Find the magnification produced by the lens in this case.

8.A concave lens has focal length 20cm. At what distance from the lens a 5 cm tall object be placed so that it forms an image at 15 cm from the lens? Also calculate the size of the image formed.

9.A Calculate the focal length of convex lens which produces a virtual image at a distance of 25 cm of an object placed 10cm in front of it.

10.A concave lens of focal length 15 cm forms an image of 10 cm from the lens. How far is object from the lens? What are its characteristics?

11.Light enters from air into glass plate which has a refractive index of 1.5. Calculate the speed of light in glass. (Given, speed of light in vacuum is 3 x 108ms-1

12.A person cannot see distinctly any object placed beyond 40 cm from his eye. Calculate the power of the lens which will help him to see distant object clearly.

13. The near point of a hypermetropic person is 75 cm from the eye. What is the power of lens required to enable him to read clearly a book held at 25 cm from the eye?

14.A person with a myopic eye is not able to see beyond 3 m distinctly. Determine the nature, focal length and power of the lens required.

15.The near point of a hypermetropic person is 1m. What is the power of lens required to correct this defect? Assume that near point of the normal eye is 25 cm

16. A 2.0-cm-high object is placed at a distance of 20cm from a concave mirror. A real image is formed at 40cm from the mirror. Calculate the focal length of the mirror and size of the image.

17. Q.A man who wears glasses of power +3D must hold a book at least 25 cm. away to see the print clearly. How far away would the newspaper have to be if he took off the glasses and still wanted clear vision?

18. Q. An object of height 3 cm. is kept in front of a concave mirror at a distance of 15 cm .If the radius of curvature of this mirror if 20 cm. then find the nature, position, magnification and height of this image.

19. Q. A convex lens having focal length 20 cm. forms an image on a screen. If the height of this image is twice the height of object then find the positions of object and image from the lens.