



SUBJECT:-PHYSICS - CLASS X

Revision Assignment 1 - Light

Week: 17th November to 20th November, 2020

1. Draw a ray diagram to show the path of the reflected ray in each of the following cases.

A ray of light incident on a convex mirror:

- a) strikes at its pole making an angle θ from the principal axis
- b) is directed towards its principal focus
- c) is parallel to its principal axis

2. The linear magnification produced by a spherical mirror is $+1/3$.

Analyzing this value, state the type of mirror and position of the object with respect to the pole of the mirror. Draw any diagram to justify your answer.

3. A spherical mirror produces a magnification of -1 on a screen placed at a distance of 50cm from the mirror.

Write the type of the mirror.

Find the distance of the image from the object.

What is the focal length of the mirror?

Draw the ray diagram to show the image formation in this case.

4. Suppose you want to observe an erect image of a candle flame using a concave mirror of focal length 20 cm. State the range of the distance of the candle flame from the mirror. List two other characteristics of the observed image. Draw a ray diagram to show the formation of image in this case.

5. Define magnification produced by a spherical mirror in terms of the height of an object and image. How is it related to the object and image distance? Explain why magnification is positive for virtual image and negative for real image.

6. An object is placed at a distance of 25 cm away from a converging mirror of focal length 20 cm. Discuss the effect on the nature and position of the image if the position of the object changes from 25 cm to 15 cm. Justify your answer without using mirror formula.

7. An object 1cm high is held near a concave mirror of magnification 10. How tall will the image be?