



St. Lawrence High School
A Jesuit Christian Minority Institution



Term : Pre – Test

Solution of Work Sheet – 12

Subject – Physical Science

Class – X

Date – 14.05.20

Chapter – Light

Topic – Image formation by
Convex lens

Choose the correct option for the following questions.

1 × 15 = 15

1. For image formation in lens, the magnification means –

- a. Ratio of the image distance to object distance
- b. Ratio of the object distance to image distance
- c. Ratio of the height of image to the height of object
- d. Both a. and c.

Ans: d. Both a. and c.

2. The angle of deviation of any ray incident at the optical centre of convex lens is –

- a. 180°
- b. 90°
- c. 45°
- d. 0°

Ans: d. 0°

3. The image of any object placed perpendicularly on the principal axis in front of a convex lens, at a distance twice the focal length of a convex lens ($2f$), will be formed –

- a. At a distance less than $2f$ from the lens.
- b. At a distance more than $2f$ from the lens.
- c. At a distance equal to $2f$ from the lens on the opposite side.
- d. At a distance equal to $2f$ from the lens on the same side.

Ans: c. At a distance equal to $2f$ from the lens on the opposite side.

4. The image of any object placed perpendicularly on the principal axis in front of a convex lens, at a distance twice the focal length of a convex lens ($2f$), will be –

- a. Real and erect
- b. Virtual and erect
- c. Virtual and inverted
- d. Real and inverted

Ans: d. Real and inverted

5. If any object is placed perpendicularly on the principal axis at a distance $2f$ (i.e. $u = 2f, f$ being the focal length) from a convex lens, then the magnification will be –

- a. $m > 1$
- b. $m < 1$
- c. $m = 1$
- d. m can be anything

Ans: c. $m = 1$

6. If any object is placed perpendicularly on the principal axis beyond $2f$ distance from a convex lens (i.e. $u > 2f$), then the image will be formed –
- Beyond $2f$ on the other side of the lens
 - Within $2f$ on the other side of the lens
 - At the same position that of the object
 - Within $2f$ on the same side of the lens

Ans: b. Within $2f$ on the other side of the lens

7. If any object is placed perpendicularly on the principal axis beyond $2f$ distance from a convex lens (i.e. $u > 2f$), then the image will be –
- Virtual and erect
 - Virtual and inverted
 - Real and erect
 - Real and inverted

Ans: d. Real and inverted

8. If any object is placed perpendicularly on the principal axis beyond $2f$ distance from a convex lens (i.e. $u > 2f$), then the image will be –
- Magnified
 - Of same size
 - Diminished
 - Can be a. and c.

Ans: c. Diminished

9. If any object is placed perpendicularly on the principal axis in between f and $2f$ distance from a convex lens (i.e. $f < u < 2f$), then the image will be formed –
- Beyond $2f$ on the other side of the lens
 - Within $2f$ on the other side of the lens
 - At the same position that of the object
 - Within $2f$ on the same side of the lens

Ans: a. Beyond $2f$ on the other side of the lens

10. If any object is placed perpendicularly on the principal axis in between f and $2f$ distance from a convex lens (i.e. $f < u < 2f$), then the image formed will be –
- Magnified
 - Of same size
 - Diminished
 - Can be a. and c.

Ans: a. Magnified

11. If any object is placed perpendicularly on the principal axis in between f and $2f$ distance from a convex lens (i.e. $f < u < 2f$), then the image formed will be –
- Virtual and erect
 - Virtual and inverted
 - Real and erect
 - Real and inverted

Ans: d. Real and inverted

12. The incident ray that remains undeviated after refraction in a convex lens and also passes through the focus of the lens is –
- Any ray incident at the optical centre
 - Any ray parallel to the principal axis
 - The ray that comes through the principal axis
 - None of these

Ans: c. The ray that comes through the principal axis

13. The focal length of a convex lens is 13.5cm. If an object of height 6.5cm is placed perpendicularly on the principal axis at a distance 27cm from the lens, then the height of the image will be –
- 13.5 cm
 - 6.5 cm
 - 27 cm
 - 7cm
- Ans: b. 6.5 cm
14. An object is placed at a distance 15 cm from a convex lens perpendicularly on the principal axis. If the focal length of the lens is 10 cm, then the nature of the image will be –
- Real, inverted and magnified
 - Real, inverted and diminished
 - Real, Erect and magnified
 - Real, Erect and diminished
- Ans: a. Real, inverted and magnified
15. The image of an object placed perpendicularly on the principal axis at a distance 12.8cm of a convex lens, is formed at 12.96 cm on the other side. The magnification in this case will be –
- 0.9876
 - 1
 - 1.0125
 - 10.125
- Ans: c. 1.0125

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