St. Lawrence High School

A Jesuit Christian Minority Institution

Term : Pre – Test

Solution of Work Sheet – 12

Class – X   Subject – Physical Science   Date – 14.05.20

Chapter – Light   Topic – Image formation by Convex lens

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Choose the correct option for the following questions. $1 \times 15 = 15$

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.

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°

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.

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

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

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 –
    a. Beyond $2f$ on the other side of the lens
    b. Within $2f$ on the other side of the lens
    c. At the same position that of the object
    d. Within $2f$ on the same 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 –
    a. Virtual and erect
    b. Virtual and inverted
    c. Real and erect
    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 –
    a. Magnified
    b. Of same size
    c. Diminished
    d. Can be a. and c.

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 –
    a. Beyond $2f$ on the other side of the lens
    b. Within $2f$ on the other side of the lens
    c. At the same position that of the object
    d. Within $2f$ on the same 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 –
    a. Magnified
    b. Of same size
    c. Diminished
    d. Can be a. and c.

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 –
    a. Virtual and erect
    b. Virtual and inverted
    c. Real and erect
    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 –
    a. Any ray incident at the optical centre
    b. Any ray parallel to the principal axis
    c. The ray that comes through the principal axis
    d. None of these

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 –
    a. 13.5 cm
    b. 6.5 cm
    c. 27 cm
    d. 7cm

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 –
    a. Real, inverted and magnified
    b. Real, inverted and diminished
    c. Real, Erect and magnified
    d. Real, Erect and diminished

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 –
    a. 0.9876
    b. 1
    c. 1.0125
    d. 10.125

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