St. Lawrence High School
A Jesuit Christian Minority Institution
Term : Pre – Test

Solution of Work Sheet – 13

Class – X   Subject – Physical Science   Date – 18.05.20

Chapter – Light   Topic – Convex Lens (rest) & concave 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 is more than 1 means –
   a. Object distance is more than image distance
   b. Image distance is more than object distance
   c. Image distance is equal to object distance
   d. None of these
   Ans: b. Image distance is more than object distance

2. If any object is placed perpendicularly on the principal axis at a distance f (i.e. $u = f$, f being the focal length) from a convex lens, then the magnification will be –
   a. $m < 1$
   b. $m = 1$
   c. m will be very large
   d. m will be very small
   Ans: c. m will be very large

3. If any object is placed perpendicularly on the principal axis at the focus of a convex lens, then the image will be formed –
   a. At focus on the other side of the lens
   b. At infinity on the other side of the lens
   c. At infinity on the same side
   d. At the same position that of object
   Ans: b. At infinity on the other side of the lens

4. If any object is placed perpendicularly on the principal axis at the focus of a convex lens, then the image will be
   a. Virtual and erect
   b. Virtual and inverted
   c. Real and erect
   d. Real and inverted
   Ans: d. Real and inverted

5. If any object is placed perpendicularly on the principal axis at the focus of a convex lens, then the image will be
   a. Magnified
   b. Of same size
   c. Diminished
   d. Highly magnified
   Ans: d. Highly magnified

6. If any object is placed perpendicularly on the principal axis within the focus of a convex lens, then the image will be formed -
   a. On the same side
   b. On the other side
   c. At any of the foci
   d. At infinity
      Ans: a. On the same side

7. If any object is placed perpendicularly on the principal axis within the focus of a convex lens, then the image will be formed -
   a. Within focus on the other side
   b. Within focus on the same side
   c. Beyond focus on the same side
   d. Beyond focus on the other side
      Ans: c. Beyond focus on the same side

8. If any object is placed perpendicularly on the principal axis within the focus of a convex lens, then the image formed will be -
   a. Virtual and erect
   b. Virtual and inverted
   c. Real and erect
   d. Real and inverted
      Ans: a. Virtual and erect

9. If any object is placed perpendicularly on the principal axis within the focus of a convex lens, then the linear magnification will be -
   a. $m = 1$
   b. $m < 1$
   c. $m > 1$
   d. $-1 < m < 1$
      Ans: c. $m > 1$

10. The image formed by a convex lens of focal length 15cm is magnified in nature. Then the object distance u can be –
    a. Greater than 30cm
    b. Less than 30 cm
    c. Equal to 30 cm
    d. Both a. and c.
       Ans: b. Less than 30 cm

11. The image formed by an unknown lens is always diminished in nature for any position of object. The lens is –
    a. A convex lens
    b. A concave lens
    c. Can be both convex or concave
    d. It is never possible
       Ans: b. A concave lens

12. If any object is placed perpendicularly on the principal axis of a concave lens, then the linear magnification will be -
    a. Greater than 1 always
    b. Less than 1 always
    c. Equal to 1 always
    d. Depends on the position of the object
       Ans: b. Less than 1 always

13. If any object is placed perpendicularly on the principal axis of a concave lens, then the image will be -
    a. Real and inverted
    b. Real and erect
    c. Virtual and inverted
    d. Virtual and erect
       Ans: d. Virtual and erect
14. The image produced by any concave lens for different positions of the object will be –
    a. On the same side (that of the object) always
    b. On the other side (that of the object) always
    c. Can be on the both sides depending on the object distance
    d. Beyond the focus always.
       Ans: a. On the same side (that of the object) always
15. If the lower half of a convex lens is cut of covered by a black paper, then for an object placed at $2f$ distance (perpendicularly on its principal axis)which one of the following will be correct?
    a. The height of the image will be halved
    b. The height of the image will be $\frac{1}{4}th.$
    c. No image will be formed at all
    d. Height will be same but the brightness of the image will be decreased.
       Ans: d. Height will be same but the brightness of the image will be decreased.

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