



St. Lawrence High School  
A Jesuit Christian Minority Institution



Term : 2<sup>nd</sup>

Work Sheet – 8

Class – X

Subject – Physical Science

Date – 28.04.20

Chapter – Light

Topic – Image formation by  
mirrors and refraction of light

Choose the correct option for the following questions.

1 × 15 = 15

- For any object placed within the focus of a concave mirror perpendicularly on the principal axis, the image will be formed –
  - in front of the mirror
  - behind the mirror
  - At the same position
  - At infinity
- For any object placed within the focus of a concave mirror perpendicularly on the principal axis, the image formed will be –
  - Magnified
  - Diminished
  - Of same size
  - Depends on the exact position of object.
- For any object placed within the focus of a concave mirror perpendicularly on the principal axis, the image formed will be –
  - Real and inverted
  - Real and erect
  - Virtual and inverted
  - Virtual and erect
- The image formed in convex mirror is –
  - Always real
  - Always virtual
  - May be both
  - Real, only when the object is at infinity
- If a point object is placed at infinity ( or at a very large distance) from a convex mirror, then its image will be formed –
  - At infinity
  - At centre of curvature
  - At focus
  - At pole
- If a point object is placed at infinity ( or at a very large distance) from a convex mirror of focal length 15cm, then its image will be formed –
  - At infinity
  - At 30cm behind the mirror
  - At 15 cm in front of the mirror
  - At 15 cm behind the mirror
- The linear magnification is defined as  $m =$ 
  - $\frac{\text{height of object}}{\text{height of image}}$
  - $\frac{\text{height of image}}{\text{height of object}}$

- c.  $\frac{\text{image distance}}{\text{object distance}}$
- d. Both b. and c.
8.  $m > 1$  means –
- Image is magnified
  - Image is diminished
  - Image is of same size
  - None of the above
9. Value of  $m$  in case of image formation by concave mirror, –
- is always greater than 1
  - is always less than 1
  - is always equal to 1
  - Can be greater or less than 1 depending on the position of object
10. Value of  $m$  in case of image formation by convex mirror, –
- is always greater than 1
  - is always less than 1
  - is always equal to 1
  - Can be greater or less than 1 depending on the position of object
11. The SI unit of linear magnification is –
- m/sec
  - m/rad
  - rad/m
  - it's a unit less quantity
12. If any object is placed at centre of curvature of a convex mirror perpendicularly on its principal axis, then the linear magnification will be –
- Less than 1
  - Greater than 1
  - Equal to 1
  - It depends on the radius of curvature of the mirror
13. The absolute refractive index of any medium (except air) –
- Is less than 1
  - Equal to 1
  - Will be always greater than 1
  - Can be more than 1 or less than 1, depending on the nature of medium
14. If,  $c$  = the speed of light in vacuum and  $v$  = the speed of light in water, then, the r.i. of water, =
- $\frac{v}{c}$
  - $\frac{c}{v}$
  - $\frac{cv}{c+v}$
  - $\frac{c+v}{cv}$
15. If, r.i. of any medium is  $\sqrt{3}$ , then the speed of light in that medium is –
- $3\sqrt{3} \times 10^8 \text{ m/s}$
  - $10^8 \text{ m/s}$
  - $\frac{1}{\sqrt{3}} \times 10^8 \text{ m/s}$
  - $\sqrt{3} \times 10^8 \text{ m/s}$