

# Chapter 5: Light Energy

## Worksheet 1

### 1. Write T for true and F for false statement.

- (i) Passage of light from one transparent medium to another is called refraction of light.
- (ii) The speed of light is  $3 \times 10^8$  m/s in vacuum or air.
- (iii) The ray of light travelling in first medium and falling on the surface separating the two media is called incident ray.
- (iv) The centre of the sphere of which the spherical mirror forms a part is called centre of curvature.
- (v) The angle between the normal and the incident ray is called the angle of emergence.

### 2. Fill in the blanks.

- (i) \_\_\_\_\_ mirrors are used as rear-view mirrors.
- (ii) \_\_\_\_\_ image can be obtained on a screen.
- (iii) \_\_\_\_\_ of light occurs because sunlight is a mixture of seven colours.
- (iv) The geometric centre of a spherical mirror is called its \_\_\_\_\_.
- (v) The \_\_\_\_\_ ray is parallel to the incident ray when refraction is done through a glass slab.

### 3. Match the columns.

#### Column A

- (i) Real image
- (ii) Virtual image
- (iii) Red colour
- (iv) Violet colour
- (v) Concave mirror
- (vi) Convex mirror

#### Column B

- (a) Used as make-up mirror
- (b) Used in street light as reflector
- (c) Inverted image
- (d) Erect image
- (e) Deviated the least
- (f) Deviated the most

### 4. Answer the following questions.

- (i) What do you mean by refraction of light?
- (ii) What is the speed of light in glass?
- (iii) What is meant by radius of curvature?
- (iv) Establish the relationship between focal length and radius of curvature.
- (v) Which image cannot be obtained on a screen?

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### Worksheet 2

#### 1. Write T for true and F for false statement.

- (i) A medium in which light travels slower is called optically denser medium.
- (ii) The refractive index is a unitless quantity.
- (iii) The second law of refraction is also called Snell's law.
- (iv) Virtual image is formed when light rays from an object, after reflection, actually meet at one point.
- (v) Convex mirrors are used in solar cookers.

#### 2. Fill in the blanks.

- (i) \_\_\_\_\_ mirrors are used as reflectors in torches.
- (ii) The image formed is real and \_\_\_\_\_ when the object is placed at infinity.
- (iii) The band of seven colours is called \_\_\_\_\_.
- (iv) Rainbow is caused due to \_\_\_\_\_ of light by tiny raindrops present in the air.
- (v) The inner surface of the convex mirror is \_\_\_\_\_ and outer surface behaves as the \_\_\_\_\_ surface.

#### 3. Define the following.

- (i) Spherical mirror
- (ii) Normal
- (iii) Angle of incidence
- (iv) Angle of prism
- (v) Dispersion of light

#### 4. Answer these questions.

- (i) Define concave mirror.
- (ii) What is called the ratio of the speed of light in vacuum to the speed of light in the given medium?
- (iii) What does VIBGYOR indicate?
- (iv) Write the laws of refraction.
- (v) Write the nature of the image when the object is placed at the focus.