

Fundamentals of Optics

Optics · Answer Key · 15 Questions

1. What is the phenomenon where light bounces off a surface called?

- A) Refraction
- B) Diffraction
- C) Reflection**
- D) Dispersion

2. When light passes from one medium to another and bends, this is known as:

- A) Reflection
- B) Scattering
- C) Interference
- D) Refraction**

3. Which type of mirror always produces a virtual, upright, and diminished image?

- A) Concave mirror
- B) Plane mirror
- C) Convex mirror**
- D) Curved mirror

4. A convex lens is also known as a:

- A) Diverging lens
- B) Converging lens**
- C) Magnifying glass
- D) Prism

5. What is the splitting of white light into its constituent colours called?

- A) Polarization
- B) Interference
- C) Dispersion**
- D) Diffraction

6. The speed of light in a vacuum is approximately:

- A) 3×10^8 m/s**
- B) 3×10^6 m/s
- C) 3×10^{10} m/s
- D) 3×10^4 m/s

7. According to the law of reflection, the angle of incidence is:

- A) Equal to the angle of refraction
- B) Equal to the angle of reflection**
- C) Twice the angle of reflection
- D) Half the angle of reflection

8. A concave mirror can form both real and virtual images. What type of image is formed if the object is placed beyond the focal point?

- A) Virtual and inverted
- B) Virtual and upright
- C) Real and inverted**
- D) Real and upright

9. Which optical instrument uses lenses to magnify distant objects?

- A) Microscope
- B) Telescope**
- C) Periscope
- D) Camera

10. What property of light explains why a rainbow forms?

- A) Reflection
- B) Refraction
- C) Diffraction
- D) Dispersion**

11. What is the point where parallel rays of light converge after passing through a convex lens called?

- A) Optical center
- B) Focal point**
- C) Vertex
- D) Principal axis

12. Light travels fastest in which of these mediums?

- A) Water
- B) Glass
- C) Air
- D) Vacuum**

13. The bending of light as it passes through small openings or around obstacles is called:

A) Interference

B) Diffraction

C) Polarization

D) Scattering

14. A concave lens is also known as a:

A) Converging lens

B) Magnifying lens

C) Diverging lens

D) Focusing lens

15. When light waves from two sources overlap and combine, this phenomenon is known as:

A) Diffraction

B) Dispersion

C) Interference

D) Reflection