

Fundamentals of Optics

Optics · Practice Test · 24 Questions

1. Which phenomenon describes the bouncing back of light rays when they strike a surface?

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

2. When light passes from one medium to another and changes direction, this is called:

- A) Reflection
- B) Interference
- C) Diffraction
- D) Refraction

3. The splitting of white light into its constituent colours when passing through a prism is known as:

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

4. A mirror that curves inward and can form magnified, real images is a:

- A) Plane mirror
- B) Convex mirror
- C) Concave mirror
- D) Spherical mirror

5. A mirror that curves outward and always forms virtual, diminished images is a:

- A) Plane mirror
- B) Concave mirror
- C) Convex mirror
- D) Parabolic mirror

6. Light travels fastest in which medium?

- A) Water
- B) Glass
- C) Diamond
- D) Vacuum

7. What is the unit of luminous flux?

- A) Candela
- B) Lux
- C) Lumen
- D) Watt

8. The law of reflection states that the angle of incidence is equal to the:

- A) Angle of refraction
- B) Angle of diffraction
- C) Angle of reflection
- D) Angle of dispersion

9. A lens that is thicker in the middle and thinner at the edges, and converges parallel light rays, is a:

- A) Diverging lens
- B) Concave lens
- C) Convex lens
- D) Biconcave lens

10. A lens that is thinner in the middle and thicker at the edges, and diverges parallel light rays, is a:

- A) Converging lens
- B) Convex lens
- C) Concave lens
- D) Biconvex lens

11. The phenomenon where light bends as it passes through a narrow opening or around an obstacle is called:

- A) Reflection
- B) Refraction
- C) Interference
- D) Diffraction

12. What property of light allows us to see colours?

- A) Polarization
- B) Intensity
- C) Wavelength
- D) Frequency

13. A ray of light striking a plane mirror perpendicularly will reflect back along the same path. What is the angle of incidence in this case?

- A) 90 degrees
- B) 45 degrees
- C) 0 degrees
- D) 180 degrees

14. The point where parallel rays of light converge after passing through a convex lens is called the:

- A) Virtual focus
- B) Principal axis
- C) Optical centre
- D) Focal point

15. Which of these is a primary colour of light?

- A) Yellow
- B) Cyan
- C) Green
- D) Magenta

16. The bending of light when it enters a denser medium is due to a change in its:

- A) Frequency
- B) Colour
- C) Speed
- D) Amplitude

17. A camera obscura works on the principle of:

- A) Reflection
- B) Diffraction
- C) Rectilinear propagation of light
- D) Interference

18. What type of image is formed by a convex lens when the object is placed beyond the focal point?

- A) Virtual and erect
- B) Real and inverted
- C) Virtual and inverted
- D) Real and erect

19. Which optical instrument uses a combination of lenses to magnify distant objects?

- A) Microscope
- B) Telescope
- C) Periscope
- D) Spectacles

20. The phenomenon of light behaving as waves is demonstrated by:

- A) Reflection
- B) Refraction
- C) Diffraction and Interference
- D) Rectilinear propagation

21. The colour of an object is determined by the wavelengths of light it:

- A) Absorbs
- B) Refracts
- C) Scatters or reflects
- D) Diffracts

22. A pinhole camera produces an image that is:

- A) Virtual and erect
- B) Real and erect
- C) Virtual and inverted
- D) Real and inverted

23. When light passes from a rarer medium to a denser medium, it bends:

- A) Away from the normal
- B) Towards the normal
- C) Parallel to the normal
- D) Does not bend

24. The optical property that allows light waves to vibrate in only one plane is called:

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