Optics and Light Knowledge Quiz

Optics · Answer Key · 8 Questions

1. What is the approximate speed of light in a vacuum?

A) 300,000 kilometres per second
B) 150,000 kilometres per second
C) 3,000,000 kilometres per second
D) 30,000 kilometres per second

2. Which optical phenomenon allows light signal transmission through fiber optic cables with minimal loss?

A) Diffraction
B) Total internal reflection
C) Polarization
D) Refraction

3. Which scientist demonstrated in 1666 that white light is composed of a spectrum of colors using a glass prism?

A) Isaac Newton
B) Christiaan Huygens
C) Thomas Young
D) James Clerk Maxwell

4. Which famous experiment conducted in 1801 demonstrated the wave nature of light through interference patterns?

A) Michelson-Morley experiment
B) Young's double-slit experiment
C) Cavendish experiment
D) Fizeau-Foucault experiment

5. Which type of lens is used to correct myopia (nearsightedness)?

A) Diverging (concave) lens
B) Converging (convex) lens
C) Cylindrical lens
D) Bifocal convex lens

6. What characteristic of light waves allows light to be polarized?

A) It is a longitudinal wave
B) It is a transverse wave
C) It has a constant frequency
D) It requires a physical medium

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7. Which optical scattering process explains why the clear daytime sky appears blue?

A) Raman scattering
B) Mie scattering
C) Rayleigh scattering
D) Tyndall effect

8. What unit is used to measure the optical power of a lens, equal to the reciprocal of its focal length in meters?

A) Lumen
B) Candela
C) Diopter
D) Lux

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