QUIZIZZ Worksheets

Name _____

Wave Optics Quiz

Total questions: 13

Worksheet time: 7mins

Instructor name: Dr. Ramanathan Saitechinfo

Class _____

Date _____

1. Who proposed the wave theory of light in 1678?

    a) Christiaan Huygens   b) James Clerk Maxwell

    c) Isaac Newton   d) René Descartes

2. What phenomenon did Thomas Young's interference experiment establish?

    a) Light travels in straight lines   b) Light can be polarized

    c) Light is a wave phenomenon   d) Light reflects off surfaces

3. According to Huygens' principle, what is a wavefront?

    a) A surface of constant frequency   b) A surface of constant speed

    c) A surface of constant phase   d) A surface of variable amplitude

4. What is the relationship between the angles of incidence and refraction according to Snell's law?

    a) n1 sin i = n2 sin r   b) i + r = 90 degrees

    c) sin i = sin r   d) n1 sin r = n2 sin i

5. What happens to the speed of light when it enters a denser medium?

    a) It remains the same   b) It decreases

    c) It increases   d) It becomes zero

6. What is the wavelength of yellow light approximately?

   a) 0.5 μm

   b) 0.6 μm

   c) 0.4 μm

   d) 0.7 μm

7. What is the critical angle in refraction?

   a) The angle at which light passes through without bending

   b) The angle at which light is absorbed

   c) The angle at which light is totally reflected

   d) The angle at which light bends towards the normal

8. What does the Doppler effect describe?

   a) Change in wavelength due to temperature

   b) Change in speed due to medium

   c) Change in amplitude due to distance

   d) Change in frequency due to motion

9. What is the effect of increasing the slit width in a single-slit diffraction pattern?

   a) No effect on the pattern

   b) Narrower central maximum

   c) Wider central maximum

   d) Increased intensity of all maxima

10. What is the Brewster angle related to?

   a) The angle of minimum reflection

   b) The angle where reflected light is polarized

   c) The angle of maximum transmission

   d) The angle of total internal reflection

11. What is the intensity of light after passing through two crossed polaroids?

   a) Maximum intensity

   b) No intensity

   c) Half of the incident intensity

   d) Minimum intensity

12. What type of wave is light considered to be?

   a) Surface wave

   b) Longitudinal wave

   c) Mechanical wave

   d) Transverse wave

13. What is the main characteristic of coherent sources?

a) Different frequencies and random phase difference

b) Same frequency and stable phase difference

c) Same amplitude and random phase difference

d) Different amplitudes and stable phase difference

Answer Keys

1. a) Christiaan Huygens

2. c) Light is a wave phenomenon

3. c) A surface of constant phase

4. a) n1 sin i = n2 sin r

5. b) It decreases

6. b) 0.6 μm

7. c) The angle at which light is totally reflected

8. d) Change in frequency due to motion

9. c) Wider central maximum

10. b) The angle where reflected light is polarized

11. d) Minimum intensity

12. d) Transverse wave

13. b) Same frequency and stable phase difference