

Waves Quiz PDF

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What is the unit of frequency?

- Meters
- Seconds
- Hertz
- Joules

What type of wave requires a medium to travel through?

- Electromagnetic Wave
- Mechanical Wave
- Transverse Wave
- Longitudinal Wave

Provide an example of how the Doppler Effect is observed in everyday life.

How does diffraction differ from refraction?

Why can't sound waves travel through a vacuum?

Describe how amplitude affects the energy of a wave.

What happens when two waves meet and combine to form a larger wave?

- Destructive Interference
- Constructively Interference
- Diffraction
- Reflection

Which type of wave is light?

- Mechanical
- Longitudinal
- Electromagnetic
- Surface

Which of the following factors affect the speed of a wave? (Select all that apply)

- Medium
- Amplitude
- Frequency
- Wavelength

What phenomenon explains the change in frequency of a wave relative to an observer moving towards or away from the source?

- Wave-Particle Duality
- Doppler Effect
- Reflection
- Refraction

Which phenomena involve the bending of waves? (Select all that apply)

- Reflection
- Refraction
- Diffraction
- Interference

What occurs when a wave bends as it enters a different medium?

- Reflection
- Refraction
- Diffraction
- Interference

What is the relationship between wave speed, frequency, and wavelength?

- $v = f + \lambda$
- $v = f \times \lambda$
- $v = f / \lambda$
- $v = \lambda / f$

Which of the following is an example of a longitudinal wave?

- Light wave
- Water wave

- Sound wave
- Radio wave

Which of the following are types of mechanical waves? (Select all that apply)

- Sound waves
- Light waves
- Water waves
- Radio waves

Explain the difference between transverse and longitudinal waves.

Discuss the significance of wave-particle duality in modern physics.

Which characteristics are true for sound waves? (Select all that apply)

- They are transverse waves.
- They require a medium.
- They can travel through a vacuum.
- They are longitudinal waves.

Which statements are true about wave-particle duality? (Select all that apply)

- It applies only to light waves.
- It is a concept in quantum mechanics.

- It describes waves exhibiting particle properties.
- It is only applicable to sound waves.

Which of the following are correct expressions of the wave equation? (Select all that apply)

- $v = f \times \lambda$
- $f = v / \lambda$
- $\lambda = v / f$
- $v = \lambda \times f$