

21 Lecture - PHY101

Important Subjective

What is the difference between transverse waves and longitudinal waves?

Answer: Transverse waves are characterized by particles moving perpendicular to the direction of wave propagation, while longitudinal waves are characterized by particles moving parallel to the direction of wave propagation.

What is the formula for calculating the speed of a wave?

Answer: The speed of a wave can be calculated using the formula $v = f\lambda$, where v is the speed, f is the frequency, and λ is the wavelength.

What is the electromagnetic spectrum?

Answer: The electromagnetic spectrum is the range of all types of electromagnetic radiation, which is divided into several regions including radio waves, microwaves, infrared radiation, visible light, ultraviolet radiation, X-rays, and gamma rays.

What is wave interference?

Answer: Wave interference occurs when two or more waves interact with each other, resulting in a change in the amplitude of the resulting wave.

What is constructive interference?

Answer: Constructive interference occurs when two or more waves combine to produce a wave with a larger amplitude than any of the individual waves.

What is destructive interference?

Answer: Destructive interference occurs when two or more waves combine to produce a wave with a smaller amplitude than any of the individual waves.

What are standing waves?

Answer: Standing waves occur when two waves of the same frequency and amplitude are traveling in opposite directions and interfere with each other. This results in a wave pattern that appears to be stationary, with points along the wave that do not move.

What is the difference between mechanical waves and electromagnetic waves?

Answer: Mechanical waves require a medium to travel through, while electromagnetic waves can travel through a vacuum.

What is the frequency of a wave?

Answer: The frequency of a wave is the number of waves that pass a point in one second.

What is the wavelength of a wave?

Answer: The wavelength of a wave is the distance between two consecutive points on a wave that are in phase.