

Definitions and Concepts for CAIE Physics A-level

Topic 8: Superposition

Antinodes: A position of maximum displacement in a stationary wave.

Coherence: Waves with the same frequency and constant phase difference.

Constructive Interference: The type of interference that occurs when two waves meet in phase. The wave amplitudes are superposed.

Destructive Interference: The type of interference that occurs when the two waves are in antiphase. When one wave is at a peak and one is at a trough their addition results in a minimum point.

Diffraction: The spreading of a wave as it passes through a gap, or around an obstacle, of a similar magnitude to its wavelength.

Diffraction Grating: A grating with hundreds of slits per millimetre, that results in sharper interference patterns when a wave passes through it. They are used to calculate atomic spacing and to analyse elements.

Interference: The superposition of the amplitudes of waves when they meet.

Nodes: A position of minimum displacement in a stationary wave.

Superposition: When two waves meet at the same point in space their displacements combine and the total displacement at that point becomes the sum of the individual displacements at that point.

Two Source Interference: Interference caused by the interference of two sources of waves.

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