16 Lecture - PHY101

Important Mcqs

What happens to the amplitude of damped oscillations over time?

a) It increases

b) It remains constant

c) It decreases

d) It oscillates

Answer: c) It decreases

What is resonance in forced oscillations?

a) The amplitude of oscillation decreases

b) The frequency of the external force is lower than the natural frequency of the oscillator

c) The frequency of the external force is equal to the natural frequency of the oscillator

d) The frequency of the external force is higher than the natural frequency of the oscillator

Answer: c) The frequency of the external force is equal to the natural frequency of the oscillator

What is the equation that describes damped oscillations?

a) The harmonic oscillator equation

b) The damped harmonic oscillator equation

c) The forced harmonic oscillator equation

d) The coupled harmonic oscillator equation

Answer: b) The damped harmonic oscillator equation

What are forced oscillations?

a) Oscillations that occur naturally in a system

b) Oscillations that are affected by external forces

c) Oscillations that are damped over time

d) Oscillations that are coupled to other oscillators

Answer: b) Oscillations that are affected by external forces

What is the equation that describes coupled oscillations?

a) The harmonic oscillator equation

b) The damped harmonic oscillator equation

c) The forced harmonic oscillator equation

d) The coupled harmonic oscillator equation

Answer: d) The coupled harmonic oscillator equation

What is synchronized behavior in coupled oscillations?

a) The oscillators all oscillate with the same frequency and phase

b) The oscillators oscillate with different frequencies and phases

c) The oscillators all come to rest

d) The oscillators oscillate with increasing amplitudes over time

Answer: a) The oscillators all oscillate with the same frequency and phase

What happens to the period of a damped oscillator over time?

a) It increases

b) It remains constant

c) It decreases

d) It oscillates

Answer: a) It increases

What is beating in coupled oscillations?

a) The amplitude of oscillation decreases

b) The amplitude of oscillation increases

c) The frequency of the oscillation decreases

d) The amplitude of oscillation varies periodically

Answer: d) The amplitude of oscillation varies periodically

What causes damping in oscillations?

a) An external periodic force

b) Friction or air resistance

c) Resonance

d) Coupling to other oscillators

Answer: b) Friction or air resistance

What is the behavior of a forced oscillator when the frequency of the external force is much higher than the natural frequency of the oscillator?

a) The amplitude of the oscillation is very large

b) The amplitude of the oscillation is very small

c) The oscillator does not oscillate

d) The behavior of the oscillator depends on the amplitude of the external force

Answer: b) The amplitude of the oscillation is very small