Waves and Sound Quiz

This is a preview of the published version of the quiz

Started: May 3 at 9:01am

Quiz Instructions

Question 1 — 1 pts

Waves travel on a string with velocity 40 m/s. The length between crest to crest is 5 meters. What is the frequency of the wave? Hz

Question 2 — 1 pts

A string creates a standing wave with one loop when an oscillation of 20 Hz occurs. The speed of all waves traveling on the string is 60 m/s. What must be the length of the string? meters

Question 3 — 1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the velocity of waves traveling on the rope? m/s

Question 4

1 pts

A rope has standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the wavelength of the fundamental frequency? m/s

Question 5

1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the fundamental frequency? Hz

Question 6

1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the frequency of the 2nd harmonic? Hz

Question 7

1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the wavelength of the 2nd harmonic? meters

Question 8

1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the wavelength of the 3rd harmonic? meters

Question 9

1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the frequency of the 3rd harmonic? Hz

Question 10

1 pts

A rope has a standing wave with one loop. The rope is of uniform density. The force tension in the rope is 16 N; its mass is 5 kg; its length is 5 meters. What is the wavelength of the 4th harmonic? meters

Question 11

1 pts

A pipe with both ends open has a length 4 meters. The speed of sound in air is assumed to be 344 m/s. What is the wavelength of its fundamental frequency? meters

Question 12

1 pts

A pipe with both ends open has a length 4 meters. The speed of sound in air is assumed to be 344 m/s. What is its fundamental frequency? Hz

Question 13

1 pts

A pipe with both ends open has a length 4 meters. The speed of sound in air is assumed to be 344 m/s. What is the frequency of its second harmonic? Hz

Question 14

1 pts

A pipe with both ends open has a length 4 meters. The speed of sound in air is assumed to be 344 m/s. What is the wavelength of its second harmonic? meters

Question 15

1 pts

A pipe with both ends open has a length 4 meters. The speed of sound in air is assumed to be 344 m/s. What is the frequency of its third harmonic? Hz

Question 16

1 pts

A pipe with both ends open has a length 4 meters. The speed of sound in air is assumed to be 344 m/s. What is the wavelength of its third harmonic? meters

Question 17

1 pts

A pipe with one end open and one end closed has a length of 2 meters. The speed of sound in air is assumed to be 344 m/s. What is the wavelength of its fundamental frequency? meters

Question 18

1 pts

A pipe with one end open and one end closed has a length of 2 meters. The speed of sound in air is assumed to be 344 m/s. What is its fundamental frequency? Hz

Question 19

1 pts

A pipe with one end open and one end closed has a length of 2 meters. The speed of sound in air is assumed to be 344 m/s. What is the wavelength of its second harmonic?
meters

Question 20

1 pts

A pipe with one end open and one end closed has a length of 2 meters. The speed of sound in air is assumed to be 344 m/s. What is the frequency of its second harmonic?
Hz

Question 21

1 pts

A wave travels on a string. When the wave reaches a specific point on the string, that point will move _____.

- vertically
- not at all
- horizontally

Question 22

1 pts

As the tension of a string increases, the velocity of waves traveling on the string _____.

- increase
- stay the same
- decrease

Question 23

1 pts

As the mass per unit length of a string increases, the velocity of waves traveling on the string _____.

- stays the same
- decreases
- increases

Question 24

1 pts

The velocity of a wave depends on which of the following?

- the medium
- period
- frequency
- wavelength

Question 25

1 pts

Sound waves can travel in a vacuum (i.e. no air).

- True

- False

Question 26

1 pts

Two pitches are played at the same time. The first pitch has a frequency of 125 Hz. The second pitch has a frequency of 122 Hz. What is the beat frequency? Hz

Question 27

1 pts

You are standing still on a street corner when a police car with sirens approaches you at a high speed. The apparent frequency you experience is _____ compared to the actual frequency of the siren.

- higher
- the same
- lower

Question 28

1 pts

You are standing still on a street corner when a police car with sirens drives away from you at a high speed. The apparent frequency you experience is _____ compared to the actual frequency of the siren.

- lower
- the same
- higher

Question 29

1 pts

You are in a car driving at a high speed toward a loud stationary siren. The apparent frequency you experience is _____ compared to the actual frequency of the siren.

- lower
- the same
- higher

Question 30

1 pts

You are in a car driving at a high speed away from a loud stationary siren. The apparent frequency you experience is _____ compared to the actual frequency of the siren.

- lower
- higher
- the same

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