Waves Multiple Choice

PSI Physics		Name:						
1.	The distance	traveled by a w	ave in one peri	od is called?				
	A. Frequency	B. Po	eriod C. S	Speed of wave	D. Wavelength	E. Amplitude		
2.	Which of the	following is the	e speed of a wa	ve traveling with	a wavelength λ , freque	ncy f, and period T		
	A. v = $\frac{\lambda}{f}$	B. v = $\frac{f}{\lambda}$	C. v = λ·f	D. v = f [.] T	E. v = $\frac{f}{T}$			
3.	The frequend speed of the	cy of a wave is d wave?	loubled when t	he wavelength re	emains the same. What	happens to the		
	A. It doubles		B. It quadruples		C. Remains unchan	ged		
	D. It is cut to one-half		E. It is cut t	o one-fourth				
4.	The frequenc	cy of a wave inc	reases when th	e speed remains	the same. What happen	ns to the distance		
	between two consecutive crests?							
	A. It increase	S	B. It decrea	ises	C. Stays unchanged	ł		
	D. It increase	s first and then	decreases	E. It decrea	ses first and then increa	ses		
5.	Which of the following statements is true about transverse waves?							
	A. They always have the same frequencies							
	B. They always have the same velocities							
	C. They always have the same wavelengths							
	D. They always travel through a dense medium							
	E. The particl	es vibrate in pe	rpendicular dir	ection with respe	ect to the wave motion			
6.	Which of the following statements is true about longitudinal waves?							
	A. They always have the same frequencies							
	B. They always have the same velocities							
	C. They always have the same wavelengths							
	D. They always travel through a dense medium							
	E. The particl	es vibrate along	g the same dire	ction as the wave	e motion			
7.	A wave travels on a string of length L, linear density μ , and tension T. Which of the following is true?							
	A. The wave speed is inversely proportional to the tension T							
	B. The wave speed is directly proportional the linear density μ							
	C. The wave speed increases with increasing tension T							
	D. The wave speed increases with increasing linear density							
	E. The wave speed only depends on the length of the string							



8. A wave pulse travels a long a thin part of a horizontal cord and reaches another part of the cord which is much thicker and heavier. Which of the following is true about the reflected and transmitted pulse by the boundary in the cord?

Reflected pulse

- A. Upright
- B. Inverted
- C. Upright
- D. Inverted
- E. Zero amplitude

Transmitted pulse Upright Inverted Inverted Upright

Zero amplitude



9. A wave pulse travels a long a thick part of a horizontal cord and reaches another part of the cord which is much thinner and lighter. Which of the following is true about the reflected and transmitted pulse by the boundary in the cord?

Reflected pulse

- A. Upright
- B. Inverted
- C. Upright
- D. Inverted
- E. Zero amplitude

Transmitted pulse Upright

- Inverted
- Inverted
- Upright Zana amality





- 10. Two wave pulses with equal positive amplitudes travel on a cord approaching each other. What is the result of the oscillations when the pulses reach the same point?
 - A. It is constructive interference with twice the amplitude
 - B. It is destructive interference with zero amplitude
 - C. It is constructive interference with slightly greater amplitude
 - D. It is constructive interference with the negative amplitude
 - E. The standing wave is produced



- 11. Two wave pulses one with a positive amplitude the other with equal negative amplitude travel on a cord approaching each other. What is the result of the oscillations when the pulses reach the same point?
 - A. It is constructive interference with twice the amplitude
 - B. It is destructive interference with zero amplitude
 - C. It is constructive interference with slightly greater amplitude
 - D. It is constructive interference with the negative amplitude
 - E. The standing wave is produced

A "snapshot" of a wave at a given time is presented by the graph to the right. Use this graph for questions 12 and 13.

- 12. What is the amplitude of oscillations? A. 0.5 cm B. 1 cm C. 2 cm D. 5 cm E. 20 cm
- 13. What is the wavelength of the wave? A. 0.5 cm B. 1 cm C. 2 cm D. 5 cm E. 20 cm



A "snapshot" of a wave at a given time is presented by the graph to the right. Use this graph for questions 14 and 15.

14. What is the amplitude of oscillations?

A. 1 cm	B. 2 cm	C. 4 cm
D. 6 cm	E. 8 cm	

15. What is the wavelength of the wave?

A. 1 cm	B. 2 cm	C. 4 cm
D. 6 cm	E. 8 cm	





A. 100 Hz B. 200 Hz C. 300 Hz D. 400 Hz E. 500 Hz

20. A guitar string resonates at a fundamental frequency of 300 Hz. Which of the following frequencies can set the string into resonance?
A 20 Hz = R 100 Hz = C 100 Hz = D 500 Hz = C 600 Hz

A. 30 Hz B. 100 Hz C. 400 Hz D. 500 Hz E. 600 Hz

Answer Guide
1. D
2. C
3. A
4. B
5. E
6. E
7. C
8. D
9. A
10.A
11.B
12.C
13.E
14.C
15.B
16.B
17.D
18.D
19.A

20.E