

# **PHYSICS TEST CHAPTER 19 & 20**

## **PLEASE READ**

You will complete this test during class time on May 22nd from 9:10am – 9:50am.

You will have 40 minutes to complete the test (~2 minutes per question).

It is an open book test, so please feel free to use your Physics textbook.

The bonus question is worth a maximum of 5 points. Your answer to the bonus question will be assessed on the clarity and correctness of the explanation. You can receive partial credit.

The test is 21 questions, to include the bonus question. Do NOT take all of your time trying to answer the bonus question.

You will put your answers on a piece of loose-leaf paper. You will include your name and date on the test. You will only need to submit the answer sheet.

Please number your piece of loose-leaf paper from 1-20. The Bonus Question answer needs to be signified using “BONUS ANSWER” as the title.

I will grade the tests and return them to your respected cubbies as soon as possible.

## **GOOD LUCK AND SEE YOU NEXT YEAR!**

1. **The distance between successive identical parts of waves**
  - a. wavelength
  - b. amplitude
  - c. nodes
  - d. frequency
  
2. **The snail-like structures in the inner ear where various pitches are sorted before being sent by the auditory nerve to the brain are called**
  - a. cilia
  - b. stirrups
  - c. eardrum
  - d. cochlea
  
3. **The change in frequency due to motion of the source (and/or the receiver) is called**
  - a. resonance
  - b. pitch
  - c. doppler effect
  - d. refraction
  
4. **Bending of sound waves is called**

- a. echo
- b. elasticity
- c. superposition
- d. refraction

**5. Sound can be transmitted**

- a. by transverse waves
- b. through a solid or liquid but not through a gas
- c. By any elastic material
- d. Much more quickly in air than in a metal

**6. When a sound source moves toward you, you measure**

- a. An increase in wave speed
- b. A decrease in wave speed
- c. Either a decrease or an increase in wave speed depending on air temperature
- d. no change in wave speed

**7. Sound will travel**

- a. slower in more dense materials
- b. faster in less dense materials
- c. faster in more dense materials
- d. at a speed that is unaffected by the density of the material medium through which it travels

**8. Through wave motion \_\_\_\_\_ is transferred from place to place without transfer of \_\_\_\_\_ between points**

- a. matter, energy
- b. energy, matter
- c. mass, energy
- d. matter, material

**9. Sound is really tiny fluctuations of**

- a. wavelength
- b. amplitude
- c. air pressure
- d. nodes

10. The frequency of sound is referred to as

- a. loudness
- b. pitch
- c. intensity
- d. the period

11. The maximum displacement of a sine curve to either side of equilibrium is

- a. amplitude
- b. natural frequency
- c. resonance
- d. forced vibration

### **MATCHING**

Place letter of chosen answer in the blank provided with the numbered questions

- |    |              |    |            |
|----|--------------|----|------------|
| a. | longitudinal | b. | ultrasonic |
| c. | harmonics    | d. | decibel    |
| e. | hertz        | f. | pitch      |
| g. | an echo      | h. | infrasonic |
| i. | acoustics    | j. | light      |
| k. | sound        | l. | transverse |

12. The unit of frequency \_\_\_\_\_.

13. \_\_\_\_\_ moves by means of longitudinal waves

14. Sounds with frequencies below 20 Hz are called \_\_\_\_\_
15. The reflection of sound is called \_\_\_\_\_
16. The study of sound is called \_\_\_\_\_

**TRUE/FALSE**

17. **The concept of wavelength applies only to transverse waves** \_\_\_\_\_

True

False

18. **The relation  $v = f\lambda$  is referred to as the wave equation** \_\_\_\_\_

True

False

19. **The response of a body when a forcing frequency matches its natural frequency is called resonance**

True

False

20. **An object made to vibrate by another vibrating object is an example of**

- a. a forced vibration
- b. an echo
- c. refraction
- d. reflection

### **Bonus**

You are camping with your friends on one side of a pond. There are campers on the other side of the pond. It is 11 pm, and it is a perfect, cold summer night. You begin to hear the other camper's conversation, but you could not hear it during the daytime. Why do you hear their whispers only during the nighttime? What is this an example of?

*HINT: The answer is in this test...*