

Quiz 16

Name: _____

- 1) What makes sound?
 - a) **Something vibrating**
 - b) Sound Waves
 - c) Two objects moving in the same direction
 - d) Two objects moving towards one another

- 2) When you talk, sound travels through the air as
 - a) moisture from your mouth to the listener's ear
 - b) air currents from your mouth to the listener's ear
 - c) dust particles from your mouth to the listener's ear
 - d) **waves moving through the air from your mouth to the listener's ear**
 - e) as particles from your mouth to the listener's ear

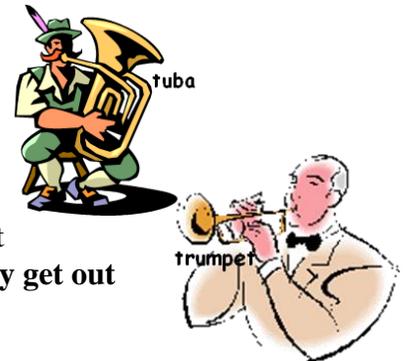
- 3) The energy of sound waves is always very small and can only be detected by our ears or other sensitive instruments.
 - a) True
 - b) **False**

- 4) Which of the following is NOT a cause of vibration for musical instruments
 - a) plucking a string
 - b) buzzing your lips
 - c) **pressing a key on a flute**
 - d) sliding a bow on a violin

- 5) When an object is made to vibrate at its natural frequency of vibration we say the object is
 - a) **in resonance**
 - b) in pitch
 - c) in harmony
 - d) in the cochlea
 - e) wavelength

- 6) Why does a tuba have lower sounds than a trumpet?
 - a) The large bell the sound comes out of
 - b) The fat tubes the sound waves move through before coming out
 - c) **The long distance the sound waves have to travel before they get out**
 - d) The way the musician blows into the tuba

- 7) A violin is basically a hollow wooden box with strings across it. If the wooden box were replaced by a solid piece of wood the violin would sound
 - a) the same
 - b) higher
 - c) lower
 - d) louder
 - e) **quieter.**

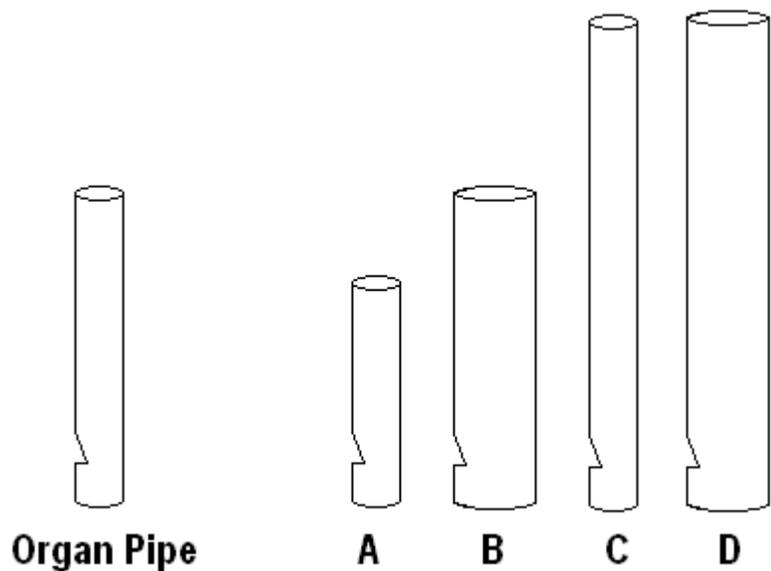


8) The organ pipe shown in the diagram produces a certain musical pitch. Which of the other four organ pipes shown would produce the same pitch?

- a) A
- b) B**
- c) C
- d) D

9) If a person blows over the top of the pipes shown in the diagram, which pipe will make a lower sound?

- a) A
- b) B
- c) D
- d) Both C & D**
- e) Both B & D



10) Low pitch is

- a) a quiet sound
- b) a low sound (bass)**
- c) a loud sound
- d) a high sound (treble)

11) The pitch of sound depends on the

- a) frequency of the sound**
- b) loudness of the sound
- c) speed of the sound

12) Treble notes are high on the musical scale. The vibrations producing treble notes have

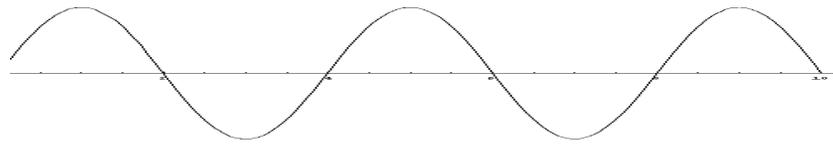
- a) low frequencies (vibrate slowly)
- b) high frequencies (vibrate quickly)**
- c) The note does not depend on the rate of the vibrations (# per second)

13) Humans can hear sound with wavelengths that range from half an inch and to 50 feet. Bass notes are low on the musical scale and have

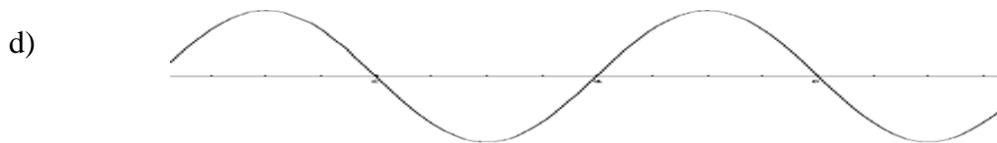
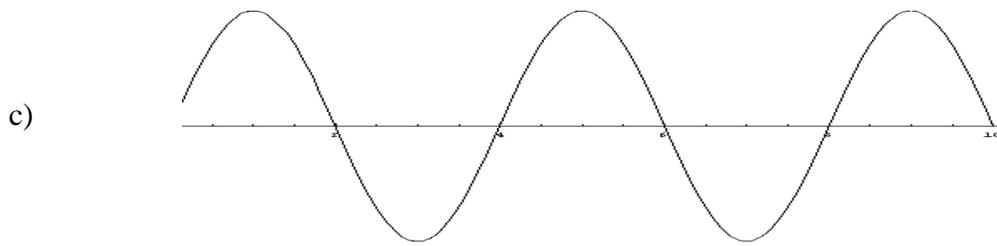
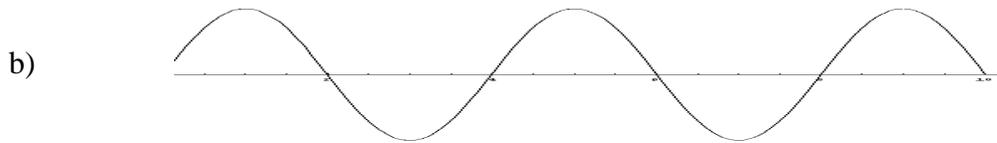
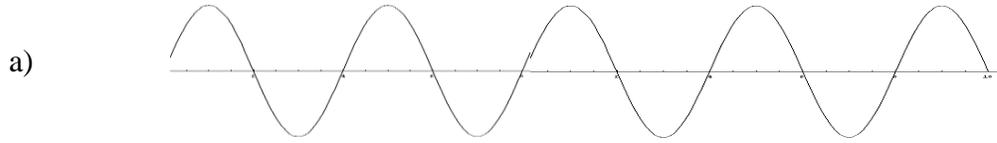
- a) longer wavelengths**
- b) shorter wavelengths
- c) The note does not depend on the length of the wave

14) What part of the ear is used to collect and funnel sound down the ear canal?

- a) Eardrum
- b) Pinna**
- c) Cochlea
- d) Ossicles



Original wave

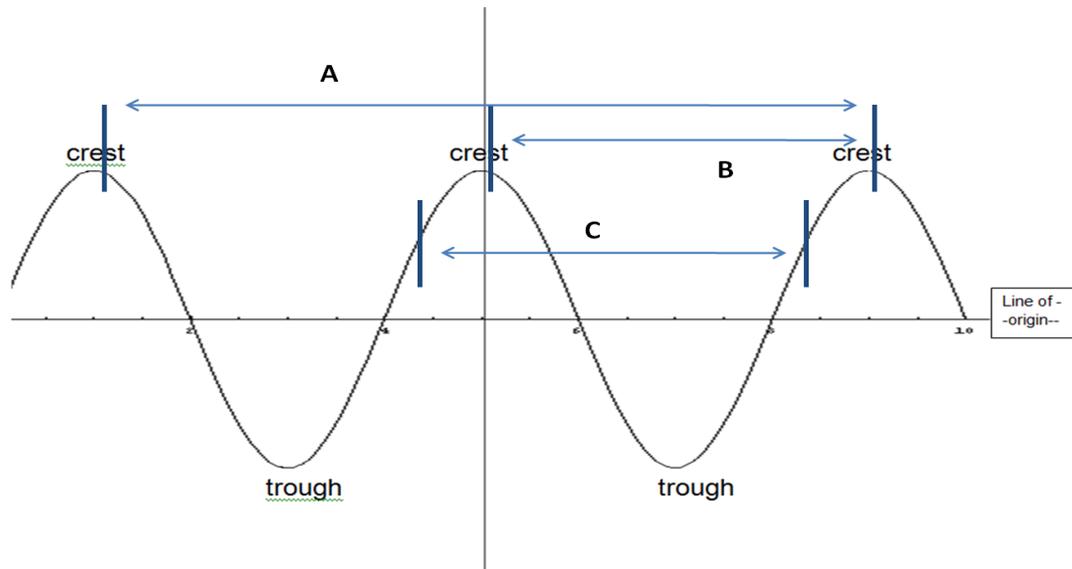


e) None of the above

If all of the waves shown above are shown for equal lengths of time,

15) Which of the options has a larger amplitude than the original wave? C

16) Which of the options has a larger frequency than the original wave? A



17) Which distance, labeled above, is equal to **one** wavelength.

- a) A
- b) B
- c) C
- d) A & B
- e) **B & C**

Answer the following questions on this sheet, not the scantron.

18) Hair cells in different parts of the cochlea respond to different frequencies.

Strongly agree Agree Don't know Disagree Strongly disagree

19) Sound waves hit the eardrum and cause it to vibrate.

Strongly agree Agree Don't know Disagree Strongly disagree

20) The vibrations continue through the ossicles in the middle ear and travel to the cochlea.

Strongly agree Agree Don't know Disagree Strongly disagree

21) Sound that is too loud can damage the tiny hair cells of the inner ear.

Strongly agree Agree Don't know Disagree Strongly disagree

22) The hair cells turn the vibrations into electrical signals that are sent to the brain.

Strongly agree Agree Don't know Disagree Strongly disagree

23) Being around loud sounds a lot will help your ears get used to it and protect your hearing.

Strongly agree Agree Don't know Disagree **Strongly disagree**

24) The more time I spend around loud sound, the worse my hearing will be.

Strongly agree Agree Don't know Disagree Strongly disagree

25) Hair cells in the cochlea can be fixed after being damaged by loud sounds.

Strongly agree Agree Don't know Disagree **Strongly disagree**

26) **5 points** Please describe what the general characteristics of musical instruments are. How do they

a) make sound,

Source of vibration

b) change pitch and

usually by changing the length of something. That is because the pitch you hear is determined by the natural frequency of some part of the instrument (ie. strings, length of straw)

c) what makes them loud?

Somehow it needs to move lots of air.

27) 6 pts What determines the natural frequency in each of the following instruments?

a) Straw instrument

The length of the straw

b) cup instrument

The length of string that is plucked (also the tension of the string)

c) your voice

The length of vocal folds as well as the length of the chamber you make with your mouth and throat.

d) acoustic guitar

Length of strings

e) electric guitar

Length of strings

f) piano

Length of strings (and thickness) that are hit by the hammer.

28)8 pts Don't grade voice	What makes it loud? Resonance or Sympathetic Vibration	Where is it happening	Why do you think this?
Straw instrument	R	Body of straw	Vibrates lots of air and only one note can be amplified. The same part of the instrument changes pitch and amplifies the sound.
cup instrument	S	Cup	When the cup was added to the string, it made it loud. Amplifies every note. Also, cup is not what determines the pitch
your voice	R	Chamber made by mouth and throat. Also cheekbones and chest	The note is determined by shape of mouth and throat along with vocal folds.
acoustic guitar	S	Body of guitar	Amplifies every note. Also, body is not what determines the pitch, strings are.
electric guitar	X	Not loud without an external amp	
Piano	S	Sound board and body of piano	Every note is loud. Strings determine pitch, not the board which moves lots of air.