Vasquez High School -- Physical Science -- Spring '15 -- Quest #2 -- 70 points

Write TRUE if the statement is true OR write the word that substitutes for the underlined word that would make it true. Writing false only earns partial credit. Three points each.

_____ 1) Overtones are multiples of the fundamental frequency.

_____ 2) Decibels are sometimes used to examine parts of the body, including the heart and liver.

_____ 3) The hollow chamber of a guitar that amplifies sound when the air is vibrated is called the compression.

_____ 4) A change in the perceived pitch of a sound due to movement is called the Doppler Effect.

_____ 5) The amplitude of a sound wave depends on how tightly packed the sound molecules are.

Short Answer/Fill-in. Be neat and complete. Three points each.

6) A note of C is sounded at 256 Hz. Another C is sounded at 257 Hz. What is it you hear? (Be specific)

_____

7) _____ is the human perception of sound intensity.

8) The three bones of the middle ear are called the _____, _____, _____.

9) Tiny hairs in the spiral part of the ear, called the _____ vibrate, sending nerve impulses to the _____ by way of the _____ nerve.

10) What do fishermen use to detect where the fish are? _____

Multiple Choice. Write the letter that best answers each example. Three points each.

_____ 11) Sound will travel the fastest through which of these?

a) warm air b) cool air c) hot water d) cold steel

_____ 12) The speed of sound in air is closest to about

a) 7,500 meters per second
b) 750 miles per hour
c) 3×10^8 meters per second
d) 340 miles per second

_____ 13) Sound is commonly caused by a

a) vibration. b) chemical reaction. c) wave. d) reflection.

_____ 14) If you played an A note and then you played the next higher A note, you would say these are

a) echoes b) octaves c) wavelengths d) compressions

_____ 15) The floppy part of your outer ear is called the

a) pinna b) floppy part of your outer ear c) eardrum d) Eustachian tube

More Short Answer. Be neat and complete.

16) Why does sound travel faster in hotter air than in cooler air? _____

_____.

17) You're sitting in the left field bleachers at a Dodger game. You see the batter hit a long fly ball, but you don't seem to hear the contact for about 1/3 second. Why? _____

_____.

18) You play a C note. Aside from another C, what letter note could you play to make a pleasing sound with that C note, that is, what other note produces consonance? _____

19) Explain how placing your hand on a bell that has just been rung stops the sound. _____

_____.

20) The normal range of human hearing is from _____ to _____.

Calculations and Diagrams. Show everything carefully. Five points each.

21) A girl is speaking rather lowly at 30 dB. If there were 10,000 girls just like her speaking at the same intensity, how many decibels would the overall sound be?

22) Carefully sketch a typical sound wave, with labels for compressions, rarefactions, and wavelength.