

PHYSICS 198
Exam 6
Fall 1997

Name _____

Allowed: 3" x 5" card and calculator.
Not Allowed: notebooks and textbooks.

Use a No. 2 pencil and put your NAME and STUDENT SOCIAL SECURITY NUMBER on the scoring sheet.

Choose the most correct answer.

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1. If the amplitude of a wave is doubled, the wave intensity will be
- A. doubled
 - B. halved
 - C. four times as great
 - D. sixteen times as great
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2. The vocal tract is like a pipe with _____ having lowest resonance frequencies of _____ for a typical person.
- A. both ends open; 100, 1000, 16000 Hz
 - B. both ends closed; 5000, 15000, 25000 Hz
 - C. one end closed; 500, 1500, 2500 Hz
 - D. a torus-shaped bagel; more than 50,000 Hz
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3. Desirable reverberation times for an auditorium are
- A. shorter for speech than for organ music.
 - B. longer for speech than for organ music.
 - C. longer for speech than for orchestra music.
-
4. The primary sound source for talking is the vocal cords which have typical frequencies of _____ for a woman.
- A. 220 Hz
 - B. 330 Hz
 - C. 110 Hz
-

5. If one marching band is playing 20 DB louder than a second band, the sound intensity of the first band is _____ times that of the second band.

- A. 20
- B. 200
- C. 100

6. The reverberation time is larger for rooms having

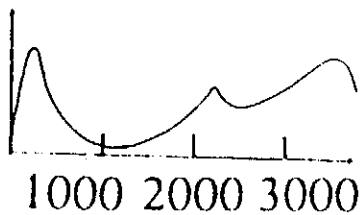
- A. smaller volume and more sound absorbing walls.
- B. smaller volume and less sound absorbing walls.
- C. larger volume and more sound absorbing walls.
- D. larger volume and less sound absorbing walls.

7. The "singer's formant", which allows her to be heard above an orchestra, results from changing the shape of her _____ to shift _____.

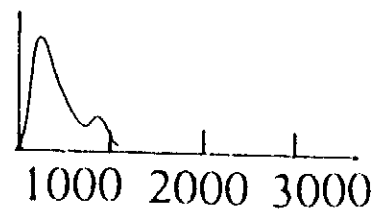
- A. vocal tract, its resonance frequencies.
- B. vocal cords, their resonance frequencies.
- C. diaphragm, the resonance frequencies.
- D. microphone, the speaker system. (This isn't the correct answer!)

8. Which of the figures shown most represents the spectrum resulting from speaking the word "heed"?

- A. Figure A.
- B. Figure B.



Hz
Figure A



Hz
Figure B