

OK, here's your second opportunity to let me know all the cool stuff you've learned this semester. As always, the Skidmore Honor Code is in effect. You should be able to complete the exam in 1.5 hours or less. I really enjoyed this particular class this semester, so thanks for all that you did to contribute to the quality of the class. Enjoy your summer. If you're graduating, do good! (And keep in touch!) If you're returning next year, I look forward to seeing you. (And stop by to pick up your paper and exam!) Take good care...

Answer the essay questions on the attached lined paper. Each essay is worth 20 points.

Essay 1. Compare detection of stimuli on the skin with visual perception. Highlight some of the similarities between the two senses, and some differences.

Essay 2. For the corollary discharge theory of motion perception, Gregory has argued that two separate systems are involved (image-retina and eye-head). How do the two systems interact to provide us with our perception of motion and stability? What would J. Gibson have to say about corollary discharge theory?

1. Endorphins are

- a. placebos given to relieve pain.
- b. powerful chemical substances available only by prescription.
- c. substances that occur naturally inside the body that have an analgesic effect.
- d. substances injected into the body through the thin needles used in acupuncture.

2. Which of the following statements about speech perception is correct?

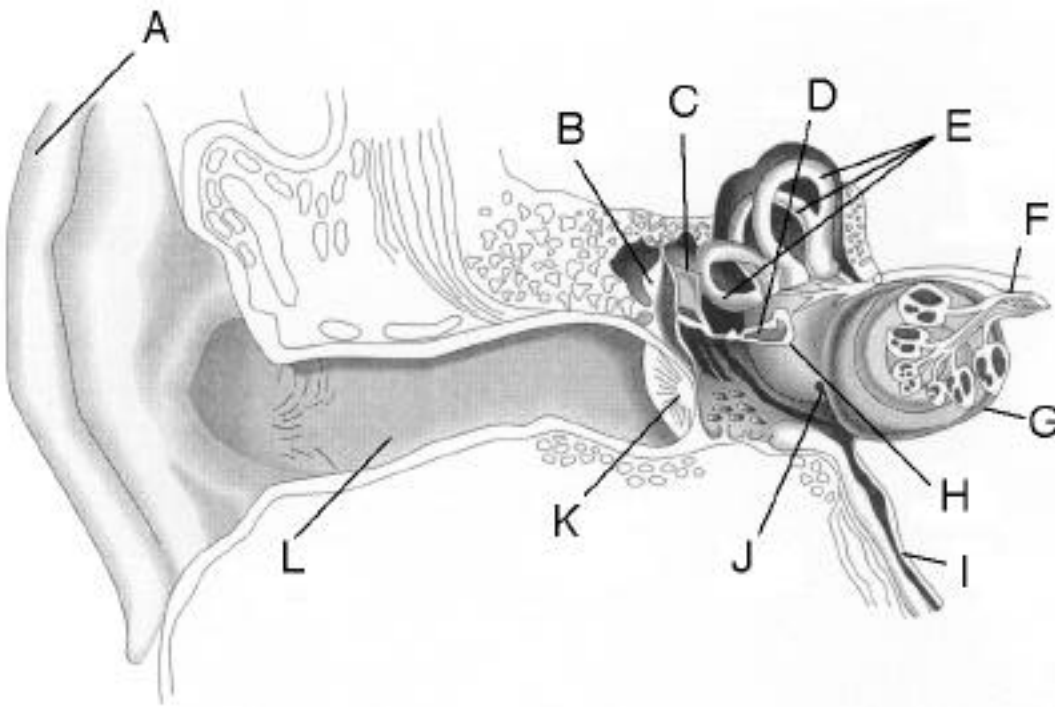
- a. It is easier to identify speech if the context is missing.
- b. Context always increases the accuracy of identifying the physical stimulus.
- c. If a phoneme is missing from a word, listeners typically cannot identify the word correctly.
- d. People have difficulty identifying an isolated word that had been spoken in their own previous conversations.

3. Research on categorical perception has shown that

- a. categorical perception can be demonstrated in a variety of animals other than humans.
- b. categorical perception is limited to speech perception.
- c. experimenters have been unable to demonstrate categorical perception for the distinction between voiced and voiceless phonemes.
- d. categorical perception cannot be demonstrated for human listeners.

4. Research on touch perception has revealed

- a. that Pacinian Corpuscles and rapidly adapting (RA) fibers respond to changes in stimulation to the skin but cease to respond to continuous pressure.
- b. that Pacinian Corpuscles in the lower half of the body respond only to changes in skin temperature and not to pressure on the skin.
- c. that Pacinian Corpuscles are only sensitive to stimulus onset and are not sensitive to stimulus offset.
- d. that continuous signals of pressure on the skin are often ignored by the somatosensory cortex.



5. Match the labels from the figure above to each of the following parts of the auditory system: [6 pts]

- | | | | |
|-------|-----------------------------|-------|------------------|
| _____ | Stapes (Stirrup) | _____ | Incus (Anvil) |
| _____ | External Auditory Canal | _____ | Oval Window |
| _____ | Contains the Organ of Corti | _____ | Auditory Nerve |
| _____ | Pinna | _____ | Round Window |
| _____ | Cochlea | _____ | Malleus (Hammer) |
| _____ | Eardrum | _____ | Eustachian Tube |

6. Match the labels from the figure above to each of the following descriptions: [3 pts]

- | | |
|-------|--|
| _____ | Important for localization |
| _____ | Amplifies some frequencies through resonance |
| _____ | Important for equalizing air pressure in the auditory system |
| _____ | Membrane that pushes in on fluids in the vestibular canal |
| _____ | Membrane at the end of the tympanic canal |
| _____ | Important for a sense of orientation in space |
| _____ | Marks the boundary between the outer and middle ear |

7. Research on absolute thresholds for passive touch shows that

- these thresholds are the same as the ones measured by two-point discrimination threshold techniques.
- women are significantly more sensitive to touch than men are.
- the various parts of the body are remarkably similar in their sensitivity.
- for both men and women, stomachs and backs are extremely sensitive to touch.

8. Point-light displays are important because
- they minimize the cost of doing research on biological motion.
 - they allow the researcher precise control over the stimuli being presented.
 - without them researchers could not study biological motion.
 - they illustrate the minimal amount of information needed to perceive biological motion.
9. Which of the following statements *best* summarizes the transduction process of the auditory system?
- The traveling wave carried by the basilar membrane causes displacement of the stereocilia, which ultimately culminates in the production of action potentials.
 - The differences in air pressure carried by sound waves directly cause the hair cells to begin vibrating at the same rate which ultimately culminates in the production of action potentials.
 - A system of afferent and efferent fibers between the inner ear and the brain enables transduction to occur.
 - The auditory system does not need to perform a transduction process.
10. Research on active touch has shown that
- active touch produces more accurate identification than passive touch only if a long time is allowed for identification.
 - active touch and passive touch produce equivalent scores for identification accuracy.
 - passive touch is often more accurate than active touch.
 - active touch is usually more accurate than passive touch.
11. According to Békésy's research on place theory, why does the traveling wave die out more rapidly near the stapes?
- Because the basilar membrane is stiffer near the stapes than near the helicotrema.
 - Because the basilar membrane is more relaxed near the stapes than near the helicotrema.
 - Because a wave that travels as far as the stapes is unable to gather strength from external stimuli.
 - None of the above.
12. In a classic study on phonemic restoration, Warren and Warren cut a phoneme out of a recorded sentence and inserted a coughing sound in the gap. What did the listeners report hearing?
- They accurately reported that the phoneme was missing and the cough was inserted.
 - An additional phoneme seemed to have been inserted, other than the one that had been removed.
 - They could not perceive the cough, even when they were warned that it would be present.
 - They reported that the sentence was intact.
13. Your uncle who has been taking large doses of aspirin for his arthritis complains of ringing in his ears. Of the choices below, what is his most probable diagnosis?
- tinnitus
 - presbycusis
 - eustachian disorder
 - conduction deafness

14. Autokinesis is presumably due to
- a. small movements of a stationary car produced by action of the engine.
 - b. induced motion.
 - c. involuntary eye movements.
 - d. movement aftereffects.

15. List 3 important pieces of evidence that support the place theory of pitch perception and 1 piece of evidence that argues against the place theory of pitch perception. [4 pts]

Pro 1 _____

Pro 2 _____

Pro 3 _____

Con 1 _____

16. List 3 components of timbre [3 pts]

17. Principles of Gestalt psychology are important for auditory perception as well as visual perception. Provide one good example to illustrate the operation of Gestalt principles in auditory perception. [2 pts]

18. We are quite good at localizing objects in space using only auditory information. Briefly list *and* describe the two major principles that underlie our auditory localization abilities. [4 pts]

Principle 1 _____

Principle 2 _____

19. How do we know that bats rely on their eyes? And what senses do Mexican freetail bat moms use to locate their kids in the cave? [3 pts]

20. Provide three good examples of the importance of context in perception, using material that we covered since the last exam (visual motion perception, audition, skin senses). [3 pts]