

NAME _____

DATE _____

SPMD 201 – Human Anatomy for Sports Medicine
The Senses
Chapters 14 & 15

Multiple Choice

- _____ 1. Which of the following is a somatic sense?
- A. smell
 - B. taste
 - C. touch
 - D. sound
- _____ 2. When people smoke cigarettes, they damage some of their taste buds. Which type of sense has been damaged by the smoking?
- A. special
 - B. somatic
 - C. visceral
 - D. autonomic
- _____ 3. Vision is dependent upon:
- A. chemoreceptors.
 - B. photoreceptors.
 - C. thermoreceptors.
 - D. mechanoreceptors.
- _____ 4. The pain a person experiences with acute appendicitis results from stimulating nerve endings called:
- A. exteroceptors.
 - B. visceroreceptors.
 - C. proprioceptors.
- _____ 5. Free nerve endings respond to:
- A. temperature change and pain.
 - B. pressure and vibration.
 - C. light touch and two-point discrimination.
 - D. temperature change and pressure.

- _____6. Proprioceptive nerve endings associated with detection of muscle stretch are:
- A. muscle spindles.
 - B. Pacinian corpuscles.
 - C. Ruffini's end-organs.
 - D. Golgi tendon organs.
- _____7. In order for a molecule to be detected by the olfactory neurons, it must:
- A. be present in high concentrations.
 - B. be one of the five primary classes of odors.
 - C. be dissolved in fluid covering the olfactory epithelium.
 - D. interact with the mechanoreceptors of the olfactory hair membrane.
- _____8. Which of the following statements is *false*?
- A. Each taste bud is sensitive to one of the basic tastes.
 - B. Sensitivity of taste buds for sweet taste is very high.
 - C. Adaptation for taste is rapid.
 - D. olfaction influences taste.
- _____9. To which of the following substances would the taste buds be most sensitive?
- A. syrup
 - B. vinegar (sour)
 - C. salt water
 - D. tonic water (bitter)
- _____10. Which of the following structures are considered to be an accessory structure of the eye?
- A. lens
 - B. retina
 - C. sclera
 - D. palpabrae (eyelids)
- _____11. The lacrimal glands:
- A. cause a sty when inflamed.
 - B. constantly produce a fluid called tears.
 - C. are located in the superomedial corner of the orbit.
 - D. are innervated by the parasympathetic fibers from the oculomotor nerve.

- _____12. The outermost tunic of the eyeball is the:
- A. iris.
 - B. sclera.
 - C. retina.
 - D. choroid.
- _____13. The anterior and posterior compartments of the eye are separated by the:
- A. lens.
 - B. retina.
 - C. cornea.
 - D. canal of Schlemm.
- _____14. As an object moves closer to the eye,
- A. the lens flattens.
 - B. the eyes rotate medially.
 - C. the ciliary muscles relax.
 - D. the diameter of the pupil increases.
- _____15. Color vision:
- A. is a function of cone cells.
 - B. is most acute in dim light.
 - C. is interpreted in the cerebellum.
 - D. depends on the amount of available rhodopsin.
- _____16. The auditory tube:
- A. amplifies sound waves.
 - B. helps maintain balance.
 - C. carries sound to the eardrum.
 - D. equalizes air pressure between the middle ear and outside air.
- _____17. The direction from which a sound is coming can be determined by the:
- A. volume of the sound.
 - B. frequency of sound waves.
 - C. amplitude of sound waves.
 - D. differences in the time that sound waves take to reach each ear.

- _____18. The utricle and saccule are involved in:
- A. static balance.
 - B. kinetic balance.
 - C. hearing low intensity sounds.
 - D. hearing high frequency sounds.
- _____19. The semicircular canals:
- A. are parallel to each other.
 - B. allow a person to detect movement in all directions.
 - C. have a base called a papilla.
 - D. contain cupulae that respond to gravity.
- _____20. The position of the head with respect to gravity is determined by the:
- A. shift in fluid in the semicircular canals.
 - B. movements of otoliths in response to gravity.
 - C. movements of perilymph in the vestibular chamber.
 - D. impulses transmitted from the macula of the semicircular canals.

Alternate Choice

1. Sensory awareness occurs in the cerebellum / cerebral cortex (circle one).
2. Somatic / Visceral (circle one) senses are include general information about the body and the environment.
3. Golgi tendon organs are located within the muscle / tendon (circle one).
4. Gustatory sensation refers to smell / taste (circle one).
5. The senses of taste and smell are / are not (circle one) closely associated.
6. Cones / Rods (circle one) are specialized for color vision and sharpness of vision in bright light.
7. Tears are produced by the conjunctiva / lacrimal glands (circle one).
8. The kinetic / static (circle one) labyrinth consists of the utricle and saccule.
9. Sensitivity for bitter substances is highest / lowest (circle one).
10. Adaptation to taste occurs quickly / slowly (circle one).

11. The cornea is part of the fibrous / vascular (circle one).
12. The kinetic / static (circle one) labyrinth is involved in evaluating movements of the head.
13. The auricle is located in the external / middle (circle one) ear.
14. The cochlea is involved with balance / hearing (circle one).

Fill-In

1. The conscious awareness of stimuli received by sensory receptors is called _____.
2. Receptors that respond to painful mechanical, chemical, or thermal stimuli are called _____.
3. The colored portion of the eye is called the _____.
4. The decreased sensitivity of a sensory receptor to a prolonged stimulus is referred to as _____.
5. The sense of taste is an example of a(n) _____ sense.
6. _____ are receptors associated with joints, tendons, and other connective tissue.
7. The bending of light is called _____.
8. Another name for the auditory tube is the _____ tube.

Short Answer

1. LIST the steps required for sensation to occur.
2. LIST and DESCRIBE the eight major types of sensory nerve endings.
3. LIST the five special senses.
4. How is the sense of taste related to the sense of smell?
5. LIST the four basic tastes. To which is sensitivity *highest*? *lowest*?
6. NAME the three layers (tunics) of the eye. For each layer list the parts or structures it

forms, and explain their functions.

7. What is the “near point of vision” and describe how it changes with age.
8. DESCRIBE what occurs at the lens of the eye as an objects moves from a distance of 20 ft. to the near point of vision.
9. NAME the three anatomical subdivisions of the ear and LIST each region’s parts.

Multiple Choice

- | | | |
|------|-------|-------|
| 1. C | 8. B | 15. A |
| 2. A | 9. D | 16. D |
| 3. B | 10. D | 17. D |
| 4. B | 11. B | 18. A |
| 5. A | 12. B | 19. B |
| 6. A | 13. A | 20. B |
| 7. C | 14. B | |

Alternate Choice

- | | | |
|--------------------|--------------------|--------------|
| 1. cerebral cortex | 6. Cones | 11. fibrous |
| 2. Somatic | 7. lacrimal glands | 12. kinetic |
| 3. tendon | 8. static | 13. external |
| 4. taste | 9. highest | 14. hearing |
| 5. are | 10. quickly | |

Fill-In

- | | |
|---------------------------|-------------------|
| 1. perception (sensation) | 6. proprioceptors |
| 2. nociceptors | 7. refraction |
| 3. iris | 8. eustachian |
| 4. adaptation | |
| 5. special | |