

Name: _____ Period: _____

1. Superman's eyes used _____, while his brain used _____.
 - A) perception; sensation
 - B) top-down processing; bottom-up processing
 - C) bottom-up processing; top-down processing
 - D) sensory adaptation; subliminal perception

2. Sensation is to _____ as perception is to _____.
 - A) recognizing a stimulus; interpreting a stimulus
 - B) detecting a stimulus; recognizing a stimulus
 - C) interpreting a stimulus; detecting a stimulus
 - D) seeing; hearing

3. Given normal sensory ability, a person standing atop a mountain on a dark, clear night can see a candle flame atop a mountain 30 miles away. This is a description of vision's:
 - A) difference threshold.
 - B) jnd.
 - C) absolute threshold.
 - D) signal detection.

4. Which of the following is true?
 - A) The absolute threshold for any stimulus is a constant.
 - B) The absolute threshold for any stimulus varies somewhat.
 - C) The absolute threshold is defined as the minimum amount of stimulation necessary for a stimulus to be detected 75 percent of the time.
 - D) The absolute threshold is defined as the minimum amount of stimulation necessary for a stimulus to be detected 60 percent of the time.

5. Concerning the evidence for subliminal stimulation, which of the following is the best answer?
 - A) The brain processes some information without our awareness.
 - B) Stimuli too weak to cross our thresholds for awareness may trigger a response in our sense receptors.
 - C) Because the "absolute" threshold is a statistical average, we are able to detect weaker stimuli some of the time.
 - D) All of the above are true.

6. If you can just notice the difference between 10- and 11-pound weights, which of the following weights could you differentiate from a 100-pound weight?
- A) 101-pound weight
 - B) 105-pound weight
 - C) 110-pound weight
 - D) there is no basis for prediction
7. In shopping for a new stereo, you discover that you cannot differentiate between the sounds of models X and Y. The difference between X and Y is below your:
- A) absolute threshold.
 - B) signal detection.
 - C) receptor threshold.
 - D) difference threshold.
8. Weber's law states that:
- A) the absolute threshold for any stimulus is a constant.
 - B) the jnd for any stimulus is a constant.
 - C) the absolute threshold for any stimulus is a constant proportion.
 - D) the jnd for any stimulus is a constant proportion.
9. When admiring the texture of a piece of fabric, Calvin usually runs his fingertips over the cloth's surface. He does this because:
- A) if the cloth were held motionless, sensory adaptation to its feel would quickly occur.
 - B) the sense of touch does not adapt.
 - C) a relatively small amount of brain tissue is devoted to processing touch from the fingertips.
 - D) of all of the above reasons.
10. A decrease in sensory responsiveness accompanying an unchanging stimulus is called:
- A) sensory fatigue.
 - B) accommodation.
 - C) sensory adaptation.
 - D) sensory interaction.
11. Which of the following is an example of sensory adaptation?
- A) finding the cold water of a swimming pool warmer after you have been in it for a while
 - B) developing an increased sensitivity to salt the more you use it in foods
 - C) becoming very irritated at the continuing sound of a dripping faucet
 - D) all of the above are examples

12. The process by which sensory information is converted into neural energy is:
- A) sensory adaptation.
 - B) feature detection.
 - C) signal detection.
 - D) transduction.
 - E) parallel processing.
13. Wavelength is to _____ as _____ is to brightness.
- A) hue; intensity
 - B) intensity; hue
 - C) frequency; amplitude
 - D) brightness; hue
14. One light may appear reddish and another greenish if they differ in:
- A) wavelength.
 - B) amplitude.
 - C) opponent processes.
 - D) brightness.
15. Nearsightedness is a condition in which the:
- A) lens has become inflexible.
 - B) lens is too thin.
 - C) eyeball is longer than normal.
 - D) eyeball is shorter than normal.
16. The size of the pupil is controlled by the:
- A) lens.
 - B) retina.
 - C) cornea.
 - D) iris.
17. In comparing the human eye to a camera, the film would be analogous to the eye's:
- A) pupil.
 - B) lens.
 - C) cornea.
 - D) retina.

18. Which of the following is the correct order of the structures through which light passes after entering the eye?
- A) lens, pupil, cornea, retina
 - B) pupil, cornea, lens, retina
 - C) pupil, lens, cornea, retina
 - D) cornea, retina, pupil, lens
 - E) cornea, pupil, lens, retina
19. The process by which the lens changes its curvature is:
- A) accommodation.
 - B) sensory adaptation.
 - C) focusing.
 - D) transduction.
20. The transduction of light energy into nerve impulses takes place in the:
- A) iris.
 - B) retina.
 - C) lens.
 - D) optic nerve.
 - E) rods.
21. One reason that your ability to detect fine visual details is greatest when scenes are focused on the fovea of your retina is that:
- A) there are more feature detectors in the fovea than in the peripheral regions of the retina.
 - B) cones in the fovea are nearer to the optic nerve than those in peripheral regions of the retina.
 - C) many rods, which are clustered in the fovea, have individual bipolar cells to relay their information to the cortex.
 - D) many cones, which are clustered in the fovea, have individual bipolar cells to relay their information to the cortex.
22. Which of the following is not true of cones?
- A) Cones enable color vision.
 - B) Cones are highly concentrated in the foveal region of the retina.
 - C) Cones have a higher absolute threshold for brightness than rods.
 - D) Each cone has its own bipolar cell.

23. Assuming that the visual systems of humans and other mammals function similarly, you would expect that the retina of a nocturnal mammal (one active only at night) would contain:
- A) mostly cones.
 - B) mostly rods.
 - C) an equal number of rods and cones.
 - D) more bipolar cells than an animal active only during the day.
24. As the football game continued into the night, LeVar noticed that he was having difficulty distinguishing the colors of the players' uniforms. This is because the _____, which enable color vision, have a _____ absolute threshold for brightness than the available light intensity.
- A) rods; higher
 - B) cones; higher
 - C) rods; lower
 - D) cones; lower
25. In order to maximize your sensitivity to fine visual detail you should:
- A) stare off to one side of the object you are attempting to see.
 - B) close one eye.
 - C) decrease the intensity of the light falling upon the object.
 - D) stare directly at the object.
26. The receptor of the eye that functions best in dim light is the:
- A) fovea.
 - B) ganglion cell.
 - C) cone.
 - D) bipolar cell.
 - E) rod.
27. Hubel and Wiesel discovered feature detectors in the visual:
- A) fovea.
 - B) optic nerve.
 - C) iris.
 - D) cortex.
 - E) retina.

- 28.** The brain breaks vision into separate dimensions such as color, depth, movement, and form, and works on each aspect simultaneously. This is called:
- A) feature detection.
 - B) parallel processing.
 - C) accommodation.
 - D) opponent processing.
- 29.** Most color-deficient people will probably:
- A) lack functioning red- or green-sensitive cones.
 - B) see the world in only black and white.
 - C) also suffer from poor vision.
 - D) have above-average vision to compensate for the deficit.
- 30.** The Young-Helmholtz theory proposes that:
- A) there are three different types of color-sensitive cones.
 - B) retinal cells are excited by one color and inhibited by its complementary color.
 - C) there are four different types of cones.
 - D) rod, not cone, vision accounts for our ability to detect fine visual detail.
- 31.** According to the opponent-process theory:
- A) there are three types of color-sensitive cones.
 - B) the process of color vision begins in the cortex.
 - C) neurons involved in color vision are stimulated by one color's wavelength and inhibited by another's.
 - D) all of the above are true.
- 32.** Which of the following is the most accurate description of how we process color?
- A) Throughout the visual system, color processing is divided into separate red, green, and blue systems.
 - B) Red-green, blue-yellow, and black-white opponent processes operate throughout the visual system.
 - C) Color processing occurs in two stages: (1) a three-color system in the retina and (2) opponent-process cells en route to the visual cortex.
 - D) Color processing occurs in two stages: (1) an opponent-process system in the retina and (2) a three-color system en route to the visual cortex.

33. In the opponent-process theory, the three pairs of processes are:
- A) red-green, blue-yellow, black-white.
 - B) red-blue, green-yellow, black-white.
 - C) red-yellow, blue-green, black-white.
 - D) dependent upon the individual's past experience.
34. After staring at a very intense red stimulus for a few minutes, Carrie shifted her gaze to a beige wall and “saw” the color _____. Carrie's experience provides support for the _____ theory.
- A) green; trichromatic
 - B) blue; opponent-process
 - C) green; opponent-process
 - D) blue; trichromatic
35. I am a cell in the thalamus that is excited by red and inhibited by green. I am a(n):
- A) feature detector.
 - B) cone.
 - C) bipolar cell.
 - D) opponent-process cell.
 - E) rod.
36. Which of the following explains why a rose appears equally red in bright and dim light?
- A) the Young-Helmholtz theory
 - B) the opponent-process theory
 - C) feature detection
 - D) color constancy
37. Frequency is to pitch as _____ is to _____.
- A) wavelength; loudness
 - B) amplitude; loudness
 - C) wavelength; intensity
 - D) amplitude; intensity
38. Which of the following correctly lists the order of structures through which sound travels after entering the ear?
- A) auditory canal, eardrum, middle ear, cochlea
 - B) eardrum, auditory canal, middle ear, cochlea
 - C) eardrum, middle ear, cochlea, auditory canal
 - D) cochlea, eardrum, middle ear, auditory canal
 - E) auditory canal, middle ear, eardrum, cochlea

- 39.** Dr. Frankenstein has forgotten to give his monster an important part; as a result, the monster cannot transduce sound. Dr. Frankenstein omitted the:
- A) eardrum.
 - B) middle ear.
 - C) semicircular canals.
 - D) basilar membrane.
- 40.** The receptors for hearing are located in:
- A) the outer ear.
 - B) the middle ear.
 - C) the inner ear.
 - D) all parts of the ear.
- 41.** The inner ear contains receptors for:
- A) audition and kinesthesia.
 - B) kinesthesia and the vestibular sense.
 - C) audition and the vestibular sense.
 - D) audition, kinesthesia, and the vestibular sense.
- 42.** The place theory of pitch perception cannot account for how we hear:
- A) low-pitched sounds.
 - B) middle-pitched sounds.
 - C) high-pitched sounds.
 - D) chords (three or more pitches simultaneously).
- 43.** Which of the following is the most accurate explanation of how we discriminate pitch?
- A) For all audible frequencies, pitch is coded according to the place of maximum vibration on the cochlea's basilar membrane.
 - B) For all audible frequencies, the rate of neural activity in the auditory nerve matches the frequency of the sound wave.
 - C) For very high frequencies, pitch is coded according to place of vibration on the basilar membrane; for lower pitches, the rate of neural activity in the auditory nerve matches the sound's frequency.
 - D) For very high frequencies, the rate of neural activity in the auditory nerve matches the frequency of the sound wave; for lower frequencies, pitch is coded according to the place of vibration on the basilar membrane.

44. The frequency theory of hearing is better than place theory at explaining our sensation of:
- A) the lowest pitches.
 - B) pitches of intermediate range.
 - C) the highest pitches.
 - D) all of the above.
45. Seventy-five-year-old Claude has difficulty hearing high-pitched sounds. Most likely his hearing problem involves:
- A) his eardrum.
 - B) his auditory canal.
 - C) the bones of his middle ear.
 - D) the hair cells of his inner ear.
46. The hearing losses that occur with age are especially pronounced for:
- A) low-pitched sounds.
 - B) middle-pitched sounds.
 - C) high-pitched sounds.
 - D) chords.
47. Nerve deafness is caused by:
- A) wax buildup in the outer ear.
 - B) damage to the eardrum.
 - C) blockage in the middle ear because of infection.
 - D) damage to the cochlea.
 - E) a puncture to the eardrum.
48. Of the four distinct skin senses, the only one that has definable receptors is:
- A) warmth.
 - B) cold.
 - C) pressure.
 - D) pain.
49. According to the gate-control theory, a way to alleviate chronic pain would be to stimulate the _____ nerve fibers that _____ the spinal gate.
- A) small; open
 - B) small; close
 - C) large; open
 - D) large; close

- 50.** The phantom limb sensation indicates that:
- A) pain is a purely sensory phenomenon.
 - B) the central nervous system plays only a minor role in the experience of pain.
 - C) pain involves the brain's interpretation of neural activity.
 - D) all of the above are true.
- 51.** How does pain differ from other senses?
- A) It has no identifiable receptors.
 - B) It has no single stimulus.
 - C) It is influenced by both physical and psychological phenomena.
 - D) All of the above are true.
- 52.** While competing in the Olympic trials, marathoner Kirsten O'Brien suffered a stress fracture in her left leg. That she did not experience significant pain until the race was over is probably attributable to the fact that during the race:
- A) the pain gate in her spinal cord was closed by information coming from her brain.
 - B) her body's production of endorphins decreased.
 - C) an increase in the activity of small pain fibers closed the pain gate.
 - D) a decrease in the activity of large pain fibers closed the pain gate.
 - E) a decrease in the activity of large pain fibers opened the pain gate.
- 53.** The receptors for taste are located in the:
- A) taste buds.
 - B) cochlea.
 - C) fovea.
 - D) cortex.
- 54.** Tamiko hates the bitter taste of her cough syrup. Which of the following would she find most helpful in minimizing the syrup's bad taste?
- A) tasting something very sweet before taking the cough syrup
 - B) keeping the syrup in her mouth for several seconds before swallowing it
 - C) holding her nose while taking the cough syrup
 - D) gulping the cough syrup so that it misses her tongue
- 55.** The principle that one sense may influence another is:
- A) transduction.
 - B) sensory adaptation.
 - C) Weber's law.
 - D) sensory interaction.

- 56.** Elderly Mrs. Martinez finds that she must spice her food heavily or she cannot taste it. Unfortunately, her son often finds her cooking inedible because it is so spicy. What is the likely explanation for their taste differences?
- A) Women have higher taste thresholds than men.
 - B) Men have higher taste thresholds than women.
 - C) Being elderly, Mrs. Martinez probably has fewer taste buds than her son.
 - D) All of the above are likely explanations.
- 57.** Which of the following is an example of sensory interaction?
- A) finding that despite its delicious aroma, a weird-looking meal tastes awful
 - B) finding that food tastes bland when you have a bad cold
 - C) finding it difficult to maintain your balance when you have an ear infection
 - D) all of the above are examples
- 58.** Which of the following is not one of the basic tastes?
- A) sweet
 - B) salty
 - C) umami
 - D) bland
 - E) sour
- 59.** Kinesthesia involves:
- A) the bones of the middle ear.
 - B) information from the muscles, tendons, and joints.
 - C) membranes within the cochlea.
 - D) the body's sense of balance.
- 60.** What enables you to feel yourself wiggling your toes even with your eyes closed?
- A) vestibular sense
 - B) sense of kinesthesia
 - C) the skin senses
 - D) sensory interaction

Answer Key

1. C
2. B
3. C
4. B
5. D
6. C
7. D
8. D
9. A
10. C
11. A
12. D
13. A
14. A
15. C
16. D
17. D
18. E
19. A
20. B
21. D
22. D
23. B
24. B
25. D
26. E
27. D
28. B
29. A
30. A
31. C
32. C
33. A
34. C
35. D
36. D
37. B
38. A
39. D
40. C
41. C
42. A
43. C
44. A
45. D

- 46. C
- 47. D
- 48. C
- 49. D
- 50. C
- 51. D
- 52. A
- 53. A
- 54. C
- 55. D
- 56. C
- 57. D
- 58. D
- 59. B
- 60. B