**CHAPTER 5**

**Sensation**

1. The detection and encoding of stimulus energies by the nervous system is called:

a. signal detection.

b. sensory interaction.

c. subliminal perception.

d. accommodation.

e. sensation.

2. Perception is the process by which:

a. stimulus energies are detected.

b. stimulus energies are transformed into neural activity.

c. sensory input is selected, organized, and interpreted.

d. nerve cells respond to specific features of a stimulus.

3. Sensation is to \_\_\_\_\_\_\_\_ as perception is to \_\_\_\_\_\_\_\_.

a. encoding; detection

b. detection; interpretation

c. interpretation; organization

d. organization; adaptation

4. Patients’ negative expectations about the outcome of a surgical procedure can increase their postoperative experience of pain. This best illustrates the importance of:

a. transduction.

b. accommodation.

c. sensory adaptation.

d. difference thresholds.

e. top-down processing.

5. Julie has developed cataracts in both eyes, preventing her from being able to identify even her mother’s face. Julie most clearly suffers a deficiency in:

a. the optic nerve.

b. accommodation.

c. bottom-up processing.

d. kinesthesis.

6. The minimum amount of stimulation a person needs to detect a stimulus 50 percent of the time is called the:

a. sensory adaptation threshold.

b. difference threshold.

c. subliminal threshold.

d. absolute threshold.

7. Which theory emphasizes that personal expectations and motivations influence the level of absolute thresholds?

a. signal detection theory

b. frequency theory

c. opponent‑process theory

d. feature detection theory

8. News about the supposed effects of briefly presented messages on moviegoers’ consumption of popcorn and Coca-Cola involved false claims regarding:

a. parallel processing.

b. difference thresholds.

c. kinesthesis.

d. sensory interaction.

e. subliminal stimulation.

9. The principle that two stimuli must differ by a constant proportion for their difference to be perceived is known as:

a. the opponent‑process theory.

b. Weber’s law.

c. feature detection.

d. frequency theory.

10. Sensory adaptation refers to:

a. the process by which stimulus energies are changed into neural impulses.

b. diminishing sensitivity to an unchanging stimulus.

c. the process of selecting, organizing, and interpreting sensory information.

d. changes in the shape of the lens as it focuses on objects.

11. Failure to realize how very hot the bath water really is after you have been sitting in it for ten minutes best illustrates the process of sensory:

a. adaptation.

b. accommodation.

c. transduction.

d. equilibrium.

e. interaction.

12. The process by which our sensory systems convert stimulus energies into neural messages is called:

a. accommodation.

b. sensory adaptation.

c. transduction.

d. parallel processing.

e. sensory interaction.

13. Which process allows more light to reach the periphery of the retina?

a. accommodation of the lens

b. transduction of the cones

c. dilation of the pupils

d. sensory adaptation of feature detectors

14. The amount of light entering the eye is regulated by the:

a. lens.

b. iris.

c. retina.

d. optic nerve.

e. feature detectors.

15. Accommodation refers to the:

a. diminishing sensitivity to an unchanging stimulus.

b. system for sensing the position and movement of muscles, tendons,

and joints.

c. quivering eye movements that enable the retina to detect

continuous stimulation.

d. process by which stimulus energies are changed into neural messages.

e. process by which the lens changes shape in order to focus images

on the retina.

16. If images of distant objects are typically focused at a point in front of the retina, a person will:

a. have a larger-than-normal blindspot.

b. be nearsighted.

c. have unusually good visual acuity.

d. be farsighted.

17. The blind spot is located in the area of the retina:

a. called the fovea.

b. that contains rods but no cones.

c. where the optic nerve leaves the eye.

d. where bipolar cells connect with ganglion cells.

18. Which receptor cells most directly enable us to distinguish different wavelengths of light?

a. rods

b. cones

c. bipolar cells

d. feature detectors

19. The feature detectors identified by Hubel and Weisel respond to specific aspects of \_\_\_\_\_\_\_\_ stimulation.

a. taste

b. visual

c. auditory

d. olfactory

e. kinesthetic

20. The feature detectors identified by Hubel and Weisel consist of:

a. nerve cells in the brain.

b. rods and cones.

c. bipolar cells.

d. ganglion cells.

21. The ability to simultaneously process the pitch, loudness, melody, and meaning of a song best illustrates:

a. sensory interaction.

b. kinesthesis.

c. accommodation.

d. subliminal perception.

e. parallel processing.

22. Evidence that some cones are especially sensitive to red light, others to green light, and still others to blue light is most directly supportive of the \_\_\_\_\_\_\_\_ theory.

a. frequency

b. Young-Helmholtz

c. gate-control

d. opponent-process

e. signal detection

23. The fact that people who are colorblind to red and green may still see yellow is most easily explained by:

a. the Young‑Helmholtz theory.

b. the gate‑control theory.

c. place theory.

d. frequency theory.

e. the opponent‑process theory.

24. The vibrations of the eardrum are amplified by three tiny bones located in the:

a. eustachian tube.

b. semicircular canals.

c. inner ear.

d. cochlea.

e. middle ear.

25. The cochlea is a:

a. fluid‑filled tube in which sound waves trigger nerve impulses.

b. fluid‑filled tube that provides a sense of upright body position.

c. fluid‑filled tube that provides a sense of body movement.

d. set of three tiny bones that amplify the vibrations of the eardrum.

26. Place theory suggests that:

a. structures in the inner ear provide us with a sense of the position of our bodies in space.

b. we have a system for sensing the position and movement of the various parts of our body.

c. we can locate the place from which a sound is emitted because of the distance between our ears.

d. the pitch we hear is related to the place where the cochlea’s basilar membrane is stimulated.

27. Cocking your head would be most useful for detecting the \_\_\_\_\_\_ of a sound.

a. timbre

b. pitch

c. loudness

d. location

e. amplitude

28. Deaf Culture advocates are most likely to object to the use of cochlear implants for:

a. children who have been deaf from birth.

b. adults who have experienced a loss of both vision and hearing.

c. children who have never learned sign language.

d. adults whose hearing becomes impaired later in their lives.

29. The sense of touch includes the four basic sensations of:

a. pleasure, pain, warmth, and cold.

b. pain, pressure, hot, and cold.

c. wetness, pain, hot, and cold.

d. pressure, pain, warmth, and cold.

30. The sensation of hot results from the simultaneous stimulation of adjacent \_\_\_\_\_\_\_\_ spots on the skin.

a. warmth and pain

b. pain and cold

c. cold and warmth

d. warmth and pressure

31. The opponent‑process theory is to our sense of color as the gate‑control theory is to our sense of:

a. pitch.

b. smell.

c. equilibrium.

d. kinesthesis.

e. pain.

32. Which of the following pain control techniques is emphasized in the Lamaze method of childbirth training?

a. accommodation

b. acupuncture

c. subliminal stimulation

d. kinesthesis

e. distraction

33. Taste receptors are located:

a. on the top of the tongue.

b. on the sides of the tongue.

c. on the roof of the mouth.

d. in all the above places.

34. Which of the following senses is best described as a chemical sense?

a. touch

b. kinesthesis

c. audition

d. vision

e. smell

35. Our sense of the position and movement of individual body parts is called:

a. feature detection.

b. accommodation.

c. kinesthesis.

d. sensory interaction.

e. the vestibular sense.

36. Receptor cells for kinesthesis are located within the:

a. fovea.

b. inner ear.

c. muscles, tendon, and joints.

d. olfactory epithelium.

e. auditory cortex.

37. Which of the following play the biggest role in our feeling dizzy and unbalanced after a thrilling roller coaster ride?

a. olfactory receptors

b. feature detectors

c. basilar membranes

d. bipolar cells

e. semicircular canals

38. 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.

39. 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

40. 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.