



Chapter 4 Exercises

Review Questions

- _____ refers to the minimum amount of stimulus energy required to be detected 50% of the time.
 - Absolute threshold
 - Difference threshold
 - Just noticeable difference
 - Transduction
- Decreased sensitivity to an unchanging stimulus is known as _____.
 - transduction
 - difference threshold
 - sensory adaptation
 - inattentional blindness
- _____ involves the conversion of sensory stimulus energy into neural impulses.
 - Sensory adaptation
 - Inattentional blindness
 - Difference threshold
 - Transduction
- _____ occurs when sensory information is organized, interpreted, and consciously experienced.
 - Sensation
 - Perception
 - Transduction
 - Sensory adaptation
- Which of the following correctly matches the pattern in our perception of color as we move from short wavelengths to long wavelengths?
 - red to orange to yellow
 - yellow to orange to red
 - yellow to red to orange
 - orange to yellow to red
- The visible spectrum includes light that ranges from about _____.
 - 400 to 700 nm
 - 200 to 900 nm
 - 20 to 20,000 Hz
 - 10 to 20 dB
- The electromagnetic spectrum includes _____.
 - radio waves
 - X-rays
 - infrared light
 - all of the above
- The audible range for humans is _____.
 - 380 to 740 Hz
 - 10 to 20 dB
 - less than 300 dB
 - 20 to 20,000 Hz
- The quality of a sound that is affected by frequency, amplitude, and timing of the sound wave is known as _____.
 - pitch
 - tone
 - electromagnetic
 - timbre
- The _____ is a small indentation of the retina that contains cones.
 - optic chiasm
 - optic nerve
 - fovea
 - iris
- _____ operate best under bright light conditions.
 - Cones
 - Rods
 - Retinal ganglion cells
 - Striate cortexes

12. _____ depth cues require the use of both eyes.
- Monocular
 - Binocular
 - Linear perspective
 - Accommodating
13. If you were to stare at a green dot for a relatively long period of time and then shift your gaze to a blank white screen, you would see a _____ negative afterimage.
- blue
 - yellow
 - black
 - red
14. Hair cells located near the base of the basilar membrane respond best to _____ sounds.
- low-frequency
 - high-frequency
 - low-amplitude
 - high-amplitude
15. The three ossicles of the middle ear are known as the _____.
- malleus, incus, and stapes
 - hammer, anvil, and stirrup
 - pinna, cochlea, and utricle
 - both a. and b. (malleus, incus, and stapes & hammer, anvil, and stirrup)
16. Hearing aids might be effective for treating _____.
- Ménière's disease
 - sensorineural hearing loss
 - conductive hearing loss
 - interaural time differences
17. Cues that require two ears are referred to as _____ cues.
- monocular
 - monaural
 - binocular
 - binaural
18. Chemical messages often sent between two members of a species to communicate something about reproductive status are called _____.
- hormones
 - pheromones
 - Merkel's disks
 - Meissner's corpuscles
19. Which taste is associated with monosodium glutamate?
- sweet
 - bitter
 - umami
 - sour
20. _____ serve as sensory receptors for temperature and pain stimuli.
- Free nerve endings
 - Pacinian corpuscles
 - Ruffini corpuscles
 - Meissner's corpuscles
21. Which of the following is involved in maintaining balance and body posture?
- auditory nerve
 - nociceptors
 - olfactory bulb
 - vestibular system
22. According to the principle of _____, objects that occur close to one another tend to be grouped together.
- similarity
 - good continuation
 - proximity
 - closure
23. Our tendency to perceive things as complete objects rather than as a series of parts is known as the principle of _____.
- closure
 - good continuation
 - proximity
 - similarity

24. According to the law of _____, we are more likely to perceive smoothly flowing lines rather than choppy or jagged lines.
- a. closure
 - b. good continuation
 - c. proximity
 - d. similarity
25. The main point of focus in a visual display is known as the _____.
- a. closure
 - b. perceptual set
 - c. ground
 - d. figure

Critical Thinking Questions

26. Not everything that is sensed is perceived. Do you think there could ever be a case where something could be perceived without being sensed?
27. Give an original example of how just noticeable difference can change as a function of stimulus intensity.
28. Why do you think other species have such different ranges of sensitivity for both visual and auditory stimuli compared to humans?
29. Why do you think humans are especially sensitive to sounds with frequencies that fall in the middle portion of the audible range?
30. Compare the two theories of color perception. Are they completely different?
31. Color is not a physical property of our environment. What function (if any) do you think color vision serves?
32. Given what you've read about sound localization, from an evolutionary perspective, how does sound localization facilitate survival?
33. How can temporal and place theories both be used to explain our ability to perceive the pitch of sound waves with frequencies up to 4,000 Hz?
34. Many people experience nausea while traveling in a car, plane, or boat. How might you explain this as a function of sensory interaction?
35. If you heard someone say that they would do anything not to feel the pain associated with significant injury, how would you respond given what you've just read?
36. Do you think women experience pain differently than men? Why or why not?
37. The central tenet of Gestalt psychology is that the whole is different from the sum of its parts. What does this mean in the context of perception?