

Unit 4- Sensation & Perception
PRACTICE BOOKLET #3

Name: _____ Date: _____ Block: _____

1. 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 to focus images on the retina.

2. The axons of ganglion cells converge to form
 - A) the basilar membrane.
 - B) bipolar cells.
 - C) the auditory nerve.
 - D) the optic nerve.
 - E) the olfactory epithelium.

3. Compared with rods, cones are
 - A) more sensitive to dim light and more sensitive to fine detail.
 - B) less sensitive to dim light and less sensitive to fine detail.
 - C) more sensitive to dim light and less sensitive to fine detail.
 - D) less sensitive to dim light and more sensitive to fine detail.
 - E) more sensitive to any light and less sensitive to fine detail.

4. The feature detectors identified by Hubel and Weisel respond to specific aspects of _____ stimulation.
 - A) vestibular
 - B) visual
 - C) auditory
 - D) olfactory
 - E) kinesthetic

5. Ms. Shields, a recent stroke victim, cannot consciously perceive the large book on the coffee table in front of her. Yet, when urged to identify the book, she correctly reads aloud the printed title on the book cover. Her response best illustrates
- A) subliminal perception.
 - B) sensory adaptation.
 - C) synaesthesia.
 - D) blindsight.
 - E) the McGurk effect.
6. According to the opponent-process theory, cells that are stimulated by exposure to _____ light are inhibited by exposure to _____ light.
- A) red; blue
 - B) blue; green
 - C) yellow; green
 - D) blue; red
 - E) yellow; blue
7. Which theory best explains the occurrence of afterimages?
- A) trichromatic
 - B) opponent-process
 - C) place
 - D) frequency
 - E) signal-detection
8. Brightness is to light as _____ is to sound.
- A) pitch
 - B) loudness
 - C) frequency
 - D) amplitude
 - E) wavelength
9. The pitch of a sound is determined by what?
- A) the frequency of the sound wave
 - B) the amplitude of the sound wave
 - C) the loudness of the sound wave
 - D) the decibel level of the sound wave
 - E) the vestibular level of the sound wave

10. The coiled, fluid-filled tube in which sound waves trigger nerve impulses is called the
- A) eustachian tube.
 - B) auditory canal.
 - C) semicircular canal.
 - D) cochlea.
 - E) vestibular apparatus.
11. The mechanical vibrations triggered by sound waves are transduced into neural impulses by
- A) hair cells.
 - B) the eardrum.
 - C) the oval window.
 - D) the auditory cortex.
 - E) the vestibular apparatus.
12. Hair cells line the surface of the
- A) feature detectors.
 - B) eardrum.
 - C) basilar membrane.
 - D) auditory nerve.
 - E) fovea.
13. What is the purpose of the eardrum?
- A) Vibration of the eardrum directly causes ripples in the basilar membrane.
 - B) Axons on the eardrum converge to form the auditory nerve, which sends auditory messages to the brain.
 - C) Transduction of sound waves into neural messages occurs in the eardrum.
 - D) Movement of the eardrum directly causes the stirrup to vibrate.
 - E) To transmit sound from the air to the bones of the middle ear.
14. According to frequency theory
- A) most sound waves are a complex mixture of many frequencies.
 - B) high-frequency sounds trigger a wave of activity that peaks near the beginning of the basilar membrane.
 - C) the rate at which impulses travel up the auditory nerve matches the frequency of the tone being heard.
 - D) frequent or prolonged stimulation of a sensory receptor causes that receptor to become less sensitive.
 - E) we hear different pitches because different sound waves cause different parts of the nerve cells in the cochlea to fire.

15. Frequency theory best explains _____, while place theory best explains _____.
- A) how we process red, green, and blue light; why we experience color afterimages
 - B) how we perceive low-pitched sounds; how we perceive high-pitched sounds
 - C) how touch sensations involve more than tactile stimulation; why stroking a pressure spot leads to the sensation of a tickle
 - D) how we are able to sense our body position without looking; how the vestibular sense functions
 - E) how phantom limb sensations occur; how stimulation of the larger fibers in the spinal cord stop pain
16. 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.
 - E) specific area of the auditory cortex.
17. Cones and rods are to vision as _____ are to audition.
- A) eardrums
 - B) cochleas
 - C) oval windows
 - D) hair cells
 - E) semicircular canals
18. Damage to the hammer, anvil, and stirrup is most likely to cause
- A) prosopagnosia.
 - B) sensorineural hearing loss.
 - C) phantom limb sensations.
 - D) conduction hearing loss.
 - E) synaesthesia.
19. A cochlear implant converts sounds into
- A) decibels.
 - B) electrical signals.
 - C) air pressure changes.
 - D) fluid vibrations.
 - E) neurotransmitters.

20. The sense of smell is known as
- A) subliminal stimulation.
 - B) the vestibular sense.
 - C) transduction.
 - D) olfaction.
 - E) the gustatory sense.
21. Which of the following senses is best described as a chemical sense?
- A) touch
 - B) kinesthesia
 - C) audition
 - D) vision
 - E) smell
22. Olfactory receptor cells are essential for our sense of
- A) kinesthesia.
 - B) smell.
 - C) touch.
 - D) hearing.
 - E) equilibrium.
23. A gestalt is best described as a(n)
- A) binocular cue.
 - B) illusion.
 - C) perceptual adaptation.
 - D) organized whole.
 - E) perceptual set.
24. The perceptual tendency to group together stimuli that are near each other is called
- A) interposition.
 - B) perceptual set.
 - C) proximity.
 - D) closure.
 - E) disparity.

25. The organization of two-dimensional retinal images into three-dimensional perceptions is called
- A) retinal disparity.
 - B) monocular cues.
 - C) perceptual constancy.
 - D) depth perception.
 - E) sensory interaction.
26. Which of the following is most helpful in perceiving the distance of objects far away from you?
- A) binocular cues
 - B) phi phenomenon
 - C) perceptual constancy
 - D) monocular cues
 - E) continuity
27. As we move, objects that are fixed in place (a light pole, for example) may appear to move. What is this monocular cue for depth called?
- A) relative motion
 - B) interposition
 - C) proximity
 - D) retinal disparity
 - E) continuity
28. When two adjacent lights blink on and off in quick succession, we perceive a single light moving back and forth between them. This is called
- A) lightness constancy.
 - B) perceptual adaptation.
 - C) the phi phenomenon.
 - D) perceptual set.
 - E) a context effect.
29. The Ames illusion involving two girls who are perceived as very different in size can best be explained in terms of
- A) shape constancy.
 - B) retinal disparity.
 - C) the principle of continuity.
 - D) the misperception of distance.
 - E) the visual cliff.

30. ESP refers to
- A) perception that occurs apart from sensory input.
 - B) the ability to move objects without touching them.
 - C) a readiness to perceive an object in a distorted fashion.
 - D) the ability of our brain to use feature detectors.
 - E) how we perceive patterns through neural images.
31. Parapsychology refers to the
- A) study of phenomena such as ESP and psychokinesis.
 - B) study of perceptual illusions.
 - C) study of the phi phenomenon.
 - D) direct transmission of thoughts from one mind to another.
 - E) direct transduction of energy into neural impulses.
32. Jamal claims that his special psychic powers enable him to perceive exactly where the body of a recent murder victim is secretly buried. Jamal is claiming to possess the power of
- A) psychokinesis.
 - B) precognition.
 - C) telepathy.
 - D) clairvoyance.
 - E) transduction.
33. Shauna claims that she knows at any given moment exactly what important political figures are thinking. Shauna is claiming to possess the power of
- A) telepathy.
 - B) precognition.
 - C) psychokinesis.
 - D) clairvoyance.
 - E) transduction.
34. Farouk insists that by intense mental concentration he can actually influence the mechanically generated outcomes of slot machines. Farouk is most specifically claiming to possess the power of
- A) telepathy.
 - B) clairvoyance.
 - C) psychokinesis.
 - D) precognition.
 - E) transduction.

35. Psychologists are skeptical about the existence of ESP because
- A) ESP researchers frequently accept evidence that they know is fraudulent.
 - B) there is no way to scientifically test claims of ESP.
 - C) many apparent demonstrations of ESP have been shown to be staged illusions.
 - D) ESP experiments show the impact of ESP, but correlational studies do not.
 - E) researchers have difficulty finding participants for ESP studies.

36. **FREE RESPONSE PRACTICE Qs:**

1) Use the following terms to describe in detail how you visually perceive an object that you can see right now. Use the terms in order to correctly describe the sequence of events involved in your example of visual perception.

- Thalamus
- Retina
- Pupil
- Transduction
- Action potential
- Feature detector
- Excitatory neurotransmitter

37. You have been asked to paint a picture that includes buildings, fields, a river, and a mountain. Describe how you would use at least four monocular cues to give your painting a sense of depth.
38. Use the following terms to explain an example of visual perception: sensation, retina, absolute threshold, transduce, top-down processing, feature detector.

Answer Key

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

36. Point 1: Pupil: Students should describe how light reflects off the object, and some of the light passes through the pupil into the eye.

Point 2: Retina: Students should explain that the light that passes through the pupil is eventually reflected on the pupil, activating neurons in the retina. Students may use the terms *rods* and/or *cones* to describe these neurons, but they do not have to use these specific terms to earn this point.

Point 3: Transduction: Students should explain that light waves that were reflected off the object are changed into neural impulses (transduction) at the point of the retina, where neurons fire in response to light waves. Again, students may use the terms *rods* and/or *cones* to describe these neurons, but they do not have to use these specific terms to earn this point.

Point 4: Action potential: Students should explain that action potentials are released when neurons fire, sending an electrical charge through the neuron. Students can go on to explain this process in more detail (describing the role of neural structures such as dendrites and the axon.) but they do not need to explain those details to earn the point.

Point 5: Excitatory neurotransmitter: Students should explain that excitatory neurotransmitters are released when the action potential reaches the axon terminal, and that these neurotransmitters increase the chances that the next neuron will fire.

Point 6: Thalamus: Students should describe the role of the thalamus in the process, specifically that the neural message from the retina first passes through the thalamus, and that the thalamus routes the impulse elsewhere in the brain.

Point 7: Feature detector: Students should discuss the role of feature detectors in their visual perception. The thalamus routed the neural impulse to the feature detectors, and these groups of neurons organize the neural firings into a conscious visual perception of the object. Students can identify the specific location of the feature detectors (visual cortex in the occipital lobe), but they do not need to provide this detail to earn the point.

37. Students can describe the use of any four monocular depth cues: Relative height (painting some objects higher in the field of vision so that they are perceived as farther away), relative size (painting objects smaller so that they are perceived as farther away), interposition (painting one object partially obscuring another to indicate depth), linear perspective (painting parallel lines or paths converging to indicate distance), light and shadow (painting objects with shading to indicate depth).
38. Students should provide an example of visual perception and explain each term in its context: the light is reflected off the object entering our eye (sensation), passes through our eye and is reflected on the retina, the light energy is strong enough to be perceived (absolute threshold), the light energy is changed into neural impulses (transduce), our brain interprets the neural impulses as a specific visual image based on our past experiences (top-down processing), the neural impulses are interpreted by feature detectors in the visual cortex.