Chapter 1: What Is Perception?

Test Bank

Multiple Choice

1. Why are sensation and perception studied by psychologists?
a. to understand how mood disorders arise from deficits in perception
b. because biologists tend to shy away from neuroscience issues
c. to understand how our brains make sense of the world around us
d. because biology has little effect on sensation or perception
Ans: C
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Knowledge
Answer Location: Why Is This Psychology?
Difficulty Level: Easy

2. Which statement best explains the role of bias in sensation and perception?
a. Bias makes it difficult to fully trust our senses and perceptions.
b. Bias most clearly affects our sensory experiences.
c. Bias affects how we perceive sensory stimuli.
d. Bias most clearly affects our sensation and perception of sound.
Ans: C
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Comprehension
Answer Location: Why Is This Psychology?
Difficulty Level: Medium

3. A marathon runner finishing a race can feel both pain and exhilaration because _____.
a. senses are interpreted in the context in which they are experienced
b. exhaustion causes the body to misinterpret sensory data
c. pain can be either an internal or an external stimulus
d. sense experience is altered by extreme physical exertion
Ans: A
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Comprehension
Answer Location: Why Is This Psychology?
Difficulty Level: Medium

4. Bob and Caroline are sitting next to each other while watching a tennis match. What is one reason that they might disagree on a judge's call, based on principles of perception?
a. Because each is cheering for a different player, their perceptions of the match are affected.
b. Because they see the play from very different angles, they interpret it differently.
c. Because vision and emotion are casually linked, their visual experiences of the match are affected.
d. Because watching sports causes different neurons to fire in male and female brains, they experience the event differently.
Ans: A
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Comprehension
Answer Location: Why Is This Psychology?
Difficulty Level: Medium

5. Artist Bev Doolittle paints pictures of horses in snow. What do these painting show about human perception?
a. We struggle to identify shapes if we are not told what to see.
b. We use our knowledge to discern camouflaged shapes.
c. Our perception is influenced by our biases, even when we try to be objective.
d. Our ability to differentiate between objects is affected by our vantage point.
Ans: B
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Comprehension
Answer Location: Why Is This Psychology?
Difficulty Level: Medium

6. Which is NOT considered one of the five canonical senses but is, in fact, a human sensory ability?
a. touch
b. proprioception
c. vision
d. lateralization
Ans: B
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Knowledge
Answer Location: The Myth of Five Senses
Difficulty Level: Easy

7. Which of the following has little effect in our perception of flavor?
a. taste
b. touch
c. smell

d. balance
Ans: D
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Comprehension
Answer Location: The Myth of Five Senses
Difficulty Level: Easy

8. The proprioception system allows us to _____.
a. keep our balance
b. process temperatures
c. monitor body position
d. identify pressure
Ans: C
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Knowledge
Answer Location: The Myth of Five Senses
Difficulty Level: Easy

9. How many sensory systems do humans have?
a. 1–2
b. 5–6
c. 7–12
d. 15–20
Ans: C
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Knowledge
Answer Location: The Myth of Five Senses
Difficulty Level: Easy

10. Carl notices that he has trouble keeping his balance in the dark. He is likely having a problem with his _____ system.
a. vestibular
b. proprioception
c. auditory
d. olfactory
Ans: A
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Application
Answer Location: The Myth of Five Senses
Difficulty Level: Medium

11. The registering of a physical stimulus on our sensory receptors is referred to as _____.
a. sensation
b. perception
c. attention

d. registration
Ans: A
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

12. Perception means _____.
a. turning sensory input into meaningful conscious experience
b. registering a physical stimulus on our sensory receptors
c. using logic to interpret sensory data
d. converting auditory input into a visual stimulus
Ans: A
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

13. Transduction is the process of _____.
a. having a visual experience
b. having an auditory experience
c. converting physical energy into a neural signal
d. converting a neural signal into physical energy
Ans: C
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

14. The signal produced by receptor cells that can then be sent to the brain is known as the _____.
a. perceptual attribute
b. perceptual absolute
c. neural signal
d. transduction signal
Ans: C
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

15. Wanda is smelling coffee. The receptor cells in Wanda's nose are _____.

a. converting light waves into an olfactory experience
b. responding to signals produced by the vestibular system
c. transducing the presence of airborne chemicals into a neural signal
d. interrupting the normal sequence of mental operations
Ans: C
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Application
Answer Location: The Basics of Perception
Difficulty Level: Medium

16. A central goal of our perceptual processes is producing a _____ representation.
a. quick
b. pleasing
c. truthful
d. creative
Ans: C
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Comprehension
Answer Location: The Basics of Perception
Difficulty Level: Easy

17. Humans must choose which stimuli to focus on. Important or interesting stimuli that stand out to us are known as _____ stimuli.
a. attended
b. potential
c. internal
d. favored
Ans: A
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

18. Which term describes our subjective experience of perception?
a. action
b. phenomenology
c. reception
d. cognitive penetrations
Ans: B
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Nature of Experience and Phenomenology

Difficulty Level: Easy

19. In the Aristotle illusion, two crossed fingers are touched by a pencil. Participants observe that _____.
a. two points are perceived instead of one
b. the pencil feels larger than it is
c. the two touches cancel each other out
d. the touch is felt only on the bottom finger
Ans: A
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: The Beginnings
Difficulty Level: Easy

20. What is physicist Thomas Young (1773–1829) known for?
a. the doctrine of specific nerve energies
b. the discovery of the sensory experience known as motion aftereffect
c. the view that three nerve fibers are responsible for color vision
d. the first acuity test for vision
Ans: C
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: The Beginnings
Difficulty Level: Easy

21. The doctrine of specific nerve energies argues that activating _____.
a. visual neurons will cause auditory experience
b. auditory neurons can cause only an auditory experience
c. sensory neurons cause loss of action in the opposite hemisphere
d. multiple neurons simultaneously can lead to misperception
Ans: B
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: The Beginnings
Difficulty Level: Easy

22. You stare at a downward-moving escalator for some time, then look at a black suitcase sitting stationary on the floor. Most likely, the suitcase will appear to be _____.
a. colored
b. moving upward
c. moving downward
d. wobbly
Ans: B
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Application

Answer Location: The Beginnings
Difficulty Level: Hard

23. The view that perceptions are created using information from our senses and cognitive processes is known as the _____ view.
a. environmental
b. direct perception
c. constructivist
d. gestalt
Ans: C
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: Helmholtz Versus Hering
Difficulty Level: Easy

24. What did Helmholtz and Hering disagree about?
a. what should be considered perception and what should be considered sensation
b. signal detection theory and just-noticeable differences
c. the nature of color vision and whether perception involves unconscious inferences
d. the doctrine of specific energy and the role of psychophysics in understanding perception
Ans: C
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Helmholtz Versus Hering
Difficulty Level: Medium

25. Which sentence states Weber's law?
a. The specific neurons activated determine the particular type of experience.
b. Information from a sensory signal is inadequate to explain the richness of human experience.
c. A just-noticeable difference between two stimuli is related to the magnitude or strength of the stimuli.
d. To perceive a doubling of brightness, the intensity of light must increase 10-fold.
Ans: C
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: Weber, Fechner, and the Birth of Psychophysics
Difficulty Level: Easy

26. What happens when we spin Benham's disk?
a. We see colors that are illusory.
b. We see motion-induced auditory illusions.
c. The direction of the spin appears to reverse.
d. Our fingers detect two-point thresholds.
Ans: A

Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Weber, Fechner, and the Birth of Psychophysics
Difficulty Level: Easy

27. Which statement is TRUE of gestalt psychology?
a. It was first articulated by Gustav Fechner.
b. It rejects the role of nature in human behavior.
c. It stresses the visual perception of edges.
d. It views the human brain as a giant computer.
Ans: C
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Gestalt Psychology
Difficulty Level: Medium

28. What is remarkable about Kanizsa's triangle?
a. The triangle is seen because we perceive edges that are not present.
b. The triangle is physically presented but masked so that it is not seen.
c. The triangle appears to fade in and out when you stare at it.
d. The triangle appears to be in motion even though it is not.
Ans: A
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Gestalt Psychology
Difficulty Level: Easy

29. The approach to perception that claims that information in the sensory world is complex and abundant, and therefore the perceptual systems need only directly perceive such complexity, is known as _____.
a. the signal detection view
b. the cognitive approach
c. the unconscious inference approach
d. the direct perception view
Ans: D
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: Direct Perception (The Gibsonian Approach)
Difficulty Level: Easy

30. The view that perceptual processes take place over time and can be thought of in terms of a software/hardware metaphor is known as the _____.
a. information processing view
b. direct perception view
c. Gibsonian approach
d. provisionist approach

Ans: A
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Information Processing Approach
Difficulty Level: Easy

31. Which of the following statements describes the computational approach?
a. It was pioneered by J. J. and Eleanor Gibson.
b. It was informed by early research into artificial intelligence.
c. It emphasizes the role of sensory organs in perception.
d. It rejects the foundations of the information-processing approach.
Ans: B
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Computational Approaches
Difficulty Level: Medium

32. Hubel and Wiesel used single-cell recording to _____.
a. uncover the basic organization of the olfactory system
b. determine the function of individual neurons in mammalian visual cortex
c. determine the rate at which information moves across synapses in the mammalian visual cortex
d. uncover the role of dopamine and other neurotransmitters in perceptual processes
Ans: B
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Medium

33. The study of the relation of brain damage to changes in behavioral and cognitive function is known as _____.
a. functional neuroscience
b. gestalt psychology
c. psychophysics
d. neuropsychology
Ans: D
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Easy

34. Which of the following statements about neuroscience is TRUE?
a. It is interested in the cellular level.
b. It envisions the brain as a giant computer.
c. It focuses on the whole rather than its parts.
d. It is primarily concerned with a single region of the brain.

Ans: A
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Easy

35. Damage to area V1 in patient DB's occipital cortex resulted in _____.
a. a condition known as apraxia
b. a condition known as visual agnosia
c. blindness in certain parts of the visual field
d. no behavioral changes
Ans: C
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Medium

36. Agnosia is a deficit in _____ due to brain damage.
a. memory
b. perception
c. a balance
d. a sensation
Ans: B
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Easy

37. Which of the following is the most likely application of sensation and perception research?
a. developing a more efficient car engine
b. inventing a safer self-driving car
c. creating an alternative to gasoline
d. building more fuel-efficient vehicles
Ans: B
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Application
Answer Location: Application: Avoiding Collisions
Difficulty Level: Medium

38. According the size-arrival effect, smaller objects are perceived as _____.
a. moving faster
b. moving slower
c. closer to the viewer
d. farther from the viewer

Ans: D
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Comprehension
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Easy

39. You are driving a car. As you prepare to turn, you see a motorcycle coming toward you. The motorcycle is likely to appear farther away than it is because it is _____.
a. smaller than your car
b. facing you directly
c. moving faster than your car
d. moving slower than your car
Ans: A
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Application
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Hard

40. Time to collision is _____.
a. the estimate of when an approaching object will contact another
b. the likelihood that a moving object will self-destruct
c. the idea that the further an object is away from you, the closer it appears
d. the idea that when two objects collide, we perceive one as faster than the other
Ans: A
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Knowledge
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Easy

41. What is prosopagnosia?
a. an acquired deficit in face perception because of brain damage
b. the complete loss of the somatosensory system
c. blindness due to brain damage
d. a condition that develops after extended exposure to fMRI fields
Ans: A
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Neuroscience in Sensation and Perception
Difficulty Level: Medium

42. The ecological approach to perception finds fault with experiments that _____.
a. focus on audition because vision is more important
b. use laboratory stimuli that do not correspond to real-world stimuli

c. use neuroimaging technology to study perceptual phenomena
d. focus on physiological rather than psychological processes
Ans: B
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Direct Perception (The Gibsonian Approach)
Difficulty Level: Medium

43. Which of the following is an example of cognitive penetration?
a. wanting to listen to a favorite song when you are sad
b. craving ice cream on a hot day
c. having a car accident on an already-bad day
d. thinking flowers look more vibrant when you are happy
Ans: D
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Application
Answer Location: The History of Sensation and Perception
Difficulty Level: Hard

44. The placebo effect is an example of _____.
a. aftereffect
b. transduction
c. the size-arrival effect
d. cognitive penetration
Ans: D
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Comprehension
Answer Location: The History of Sensation and Perception
Difficulty Level: Medium

45. In order to design safer self-driving cars, it would be most useful for engineers to understand _____.
a. the history of sensation and perception research
b. how human eyes and brains work
c. the systemic biases that human drivers share
d. the relative sizes of different objects
Ans: B
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Comprehension
Answer Location: The History of Sensation and Perception
Difficulty Level: Medium

True/False

1. Listening to music is an example of a simple perceptual process.
Ans: F
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Comprehension
Answer Location: Introduction
Difficulty Level: Easy

2. Biologists have little interest in sensation.
Ans: F
Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Knowledge
Answer Location: Why Is This Psychology?
Difficulty Level: Easy

3. Human beings have only five senses.
Ans: F
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Knowledge
Answer Location: The Myth of Five Senses
Difficulty Level: Easy

4. Most scientists believe that vision and hearing should be considered part of the same sensory system.
Ans: F
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Knowledge
Answer Location: The Myth of Five Senses
Difficulty Level: Easy

5. Perception is the process of creating conscious perceptual experience from sensory input.
Ans: T
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

6. Transduction is the process of converting a physical stimulus into an electrochemical signal.
Ans: T
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a

neural signal.
Cognitive Domain: Knowledge
Answer Location: The Basics of Perception
Difficulty Level: Easy

7. The idea that the brain needs to reconstruct a visual image based on insufficient information is consistent with a constructivist approach.
Ans: T
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Comprehension
Answer Location: Helmholtz Versus Hering
Difficulty Level: Medium

8. The computational approach builds on the information-processing approach.
Ans: T
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.
Cognitive Domain: Knowledge
Answer Location: Direct Perception (The Gibsonian Approach)
Difficulty Level: Easy

9. Cognitive penetration is the view that cognitive and emotional factors influence the phenomenology of perception.
Ans: T
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Knowledge
Answer Location: Exploration: Cognitive Penetration
Difficulty Level: Easy

10. A car driver is making a turn. He is likely to think an approaching school bus is farther away than it is.
Ans: F
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Application
Answer Location: Application: Avoiding Collisions
Difficulty Level: Medium

Short Answer

1. Explain how bias can influence our perception of images. Give an example.
Ans: Student examples will vary. A sample answer follows: Bias can influence how we perceive even simple images. For example, you know that your friend is coming to your house at 3:30, so when you look out the window at 3:25 and see a distant, unidentifiable figure walking up your street, you are likely to perceive the figure as your friend, even though you would not perceive it in the same way in a different situation.

Learning Objective: 1.1: Discuss why understanding sensation and perception is important.
Cognitive Domain: Application
Answer Location: Why Is This Psychology?
Difficulty Level: Hard

2. Describe how most contemporary scientists think we should view human senses. Explain why they believe this is an improvement over the previous model.
Ans: Most modern scientists reject the idea that there are only five human senses. Instead, they believe that humans have 7–12 sensory systems. In addition to the traditional senses of touch, taste, smell, taste, and hearing, sensory systems include the vestibular system that helps us keep our balance, the proprioception system that allow us to monitor the position of our bodies, and possibly even hunger and thirst. Thinking of sensory systems allows us to consider how senses interact--such as when smell, or even vision, impacts our perception of taste.
Learning Objective: 1.2: Assess why there are actually more than five senses.
Cognitive Domain: Analysis
Answer Location: Why Is This Psychology?
Difficulty Level: Medium

3. Is phenomenology a uniquely human concept? Why or why not?
Ans: Students could correctly answer either yes or no as long as the answer is supported with details that show an understanding of what phenomenology is. Responses should explain that phenomenology is our subjective experience of perception. A yes answer might emphasize that phenomenology currently distinguishes humans from robots. A no answer might suggest that animals and/or artificially intelligent devices might qualify as having subjective experiences.
Learning Objective: 1.3: Describe how transduction transforms a physical signal into a neural signal.
Cognitive Domain: Analysis
Answer Location: The Nature of Experience and Phenomenology
Difficulty Level: Hard

4. Compare and contrast the work of Ernst Heinrich Weber and Gustav Fechner. Describe what they have in common, as well as how they are different.
Ans: Both Weber and Fechner were interested in how we perceive changes in stimuli. Weber developed what is known as Weber's law, which states that the just-noticeable difference between two stimuli is related to the magnitude or strength of the stimuli. This explains why an equal change in stimulus (such as adding an additional inch of length) will be perceived in some cases (a piece of pipe that increases from 2 to 3 inches) but not others (an inch of fishing line added to a roll that is hundreds of feet in length). Fechner developed Fechner's law, which says that sensory experiences change at a slower rate than the intensity of the stimulus. This law helped to explain why our perception of increases in stimuli is not always proportionate to the actual increase (a 10-fold increase in brightness is perceived as being only twice as bright).
Learning Objective: 1.4: Illustrate the history of the study of sensation and perception.

Cognitive Domain: Analysis
Answer Location: Weber, Fechner, and the Birth of Psychophysics
Difficulty Level: Hard

5. Explain how sensation and perception research could improve self-driving cars. Be sure to give specific examples.
Ans: Sense and perception research could help us build better self-driving cars because it helps us understand how human drivers react to common experiences when they are driving. Understanding these processes will help researchers build cars that will be able to process data and react in the way that a human driver would. For example, studies of time to collision have found that our visual system estimates the time until an approaching object will hit us by calculating the objects optical size per unit time. Studies of the size-arrival effect show that our perception of collision is affected by the relative sizes of objects. Our perceptions, however, are not always correct. Making safer self-driving cars thus means both teaching them to think like humans and correcting some human biases.
Learning Objective: 1.5: Explain what the theory of cognitive penetration is and apply sensation and perception research to collisions.
Cognitive Domain: Application
Answer Location: The History of Sensation and Perception
Difficulty Level: Hard