Sensation and Perception 1st edition Schwartz Test Bank

SKU: 9781483308104-TEST-BANK

Test Bank – Chapter 2

1. The Scoville scale measures:

a. Any psychophysical measure of sensitivity
*b. The amount of capsaicin in food
c. The strength of auditory amplitude
d. The number of caffeine molecules in an average cup of coffee

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: Introduction (25)
Question type: MC

2. A food company wants to develop a psychological measure to evaluate people's perception of sweetness. What should they do?

*a. Ask participants to rate a number of levels of sweetness on a numerical scale.
b. Ask participants to indicate the sweetest food that they like to eat.
c. Ask participants to judge chocolate chip cookies on which one they like best.
d. Ask participants to judge the amount of capsaicin in the sweet drinks they are consuming.

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Introduction (25)
Question type: MC

3. Why is the Scoville scale considered a psychophysical scale?

a. Because it measure the relation of velocity to loudness.
*b. Because it measures a psychological variable (piquancy) as a function of a physical dimension (the amount of capsaicin).
c. Because it measures a physical variable (hotness) as a function of a sensory component (how sour the pepper is).
d. Because it excludes JNDs from consideration of the consumption of hot peppers.

Learning objective number (if applicable): 2.1
Cognitive domain: Analysis
Answer location: Introduction
Question type: MC

4. In what method are stimuli presented in a graduated scale, and participants must judge the stimuli along a certain property that goes up or down?

a. The method of adjustment

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b. The method of repugnancy
c. Magnitude estimation
*d. The method of limits

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Limits (27)
Question type: MC

5. The smallest amount of a stimulus necessary to allow an observer to detect its presence is known as the:

a. Complete threshold
b. Partial threshold
*c. Absolute threshold
d. Relative threshold

Learning objective number (if applicable): 1
Cognitive domain: Knowledge
Answer location: Method of Limits (27)
Question type: MC

6. Jaime is a participant in a psychophysical experiment on sound detection. He is asked to determine the softest sound he can hear at a particular frequency. That sound can be considered his:

a. Motivational network
b. Signal detection limit
*c. Absolute threshold
d. JND

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Method of Limits (27)
Question type: MC

7. The smallest difference between two stimuli that can be detected is known as the:

*a. Difference threshold (or JND)
b. Absolute threshold (or AT)
c. Just observable difference (JOD)
d. Remarkable lightness of being (RLB)

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Limits (28)

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Question type: MC

8. Difference thresholds in visual detection vary as a function of:

a. The level of auditory distraction
b. The amount of sensory overload in the system
*c. Whether the judgments are being made at threshold or above threshold
d. The relation between the method of limits and the method of subtraction

Learning objective number (if applicable): 2.1
Cognitive domain: Analysis
Answer location: Method of Constant Stimuli
Question type: MC

9. In absolute threshold detection experiments, the crossover point is defined as the:

*a. Point at which a person changes from detecting to not detecting a stimulus or vice versa
b. Number of stimuli required to induce a JND
c. Point at which all stimuli in a sequence will be correctly detected
d. Point at which hits and false alarms are equated

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Limits (29)
Question type: MC

10. The method whereby the threshold is determined by presenting the observer with a set of stimuli, some above the threshold and some below threshold, in a random order is the method of:

a. Adjustment
*b. Constant stimuli
c. Thresholds
d. Limits

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Constant Stimuli (30)
Question type: MC

11. Dr. Wongo is doing a psychophysical experiment to determine the smallest concentration of coffee that we can detect by olfaction. In the experiment, he presents some coffee concentrations that are clearly detectable, others that cannot be detected, and some that are just detectable. These presentations are randomized. Dr. Wongo can be said to be using the method of:

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a. Adjudication
*b. Constant stimuli
c. Inverse thresholds
d. Limits

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Method of Constant Stimuli (30)
Question type: MC

12. A method whereby an observer controls the level of the stimulus and sets it to be at the perceptual threshold is known as the method of:

*a. Adjustment
b. Constant stimuli
c. Thresholds
d. Limits

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Adjustment (31)
Question type: MC

13. Dr. Archer is doing an experiment on the softest volume we can hear at a particular frequency. He asks participants to set a dial that controls the volume to be the softest possible sound that they can hear. Dr. Archer is using the method of:

a. Control
b. Limits
c. Sensitivity
*d. Adjustment

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Method of Adjustment (31)
Question type: MC

14. The point of subjective equality is:

a. The point at which the method of limits generates the same responses as the method of adjustment
*b. The settings of two stimuli at which the observer experiences them as identical
c. The point at which subject estimates correspond to objective measures
d. In taste detection, this is the point in which the sensation of piquancy transforms from pleasant to unpleasant

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Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Adjustment (31)
Question type: MC

15. A psychophysical method in which participants judge and assign numerical estimates to the perceived strength of a stimulus is known as:

*a. Magnitude Estimation
b. Response Compression
c. Threshold Sensitivity
d. The Signal Detection Axis

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Magnitude Estimation (32)
Question type: MC

16. Electric shock shows _____ whereas brightness perception shows _____.

a. limited threshold; maximized threshold
b. inverted sensitivity; correlated sensitivity
c. all false alarms; all correct rejections
*d. response expansion; response compression

Learning objective number (if applicable): 2.1
Cognitive domain: Analysis
Answer location: Magnitude Estimation (32-33)
Question type: MC

17. Steven's power law is defined as:

a. The relation of false alarms to correct rejections in a sample
b. The effect of magnitude estimation on response compression
*c. A mathematical formula that describes the relationship between stimulus intensity and our perception
d. The relation of threshold equivalence to subjective phenomenology

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: Magnitude Estimation
Question type: MC

18. If we double the amount of capsaicin in our hot sauce, according to response expansion, we can expect:

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a. Less than double the amount of perceived piquancy
*b. More than double the amount of perceived piquancy
c. An algebraic increase in the amount of perceived piquancy
d. A proportional decrease in perceived piquancy

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Magnitude Estimation (33)
Question type: MC

19. A psychophysical method in which a participant is *required* to report when or where a stimulus occurs instead of whether it was perceived is known as the:

*a. Forced-choice method
b. Free report method
c. Free-choice method
d. Intermediate perceptual method

Learning objective number (if applicable): 1.1
Cognitive domain: Comprehension
Answer location: Catch Trials and Their Use (34)
Question type: MC

20. Which of these statements about signal detection is true?

a. A hit occurs when a signal is detected when a signal is present.
b. A miss is an error that occurs when an incoming signal is not detected.
c. A false alarm is an error that occurs when a nonsignal is mistaken for a target signal.
*d. All of the above are true.

Learning objective number (if applicable): 2.2
Cognitive domain: Analysis
Answer location: Signal Detection Theory (35)
Question type: MC

21. Karwan is a participant in a psychophysical experiment on visual detection. He is shown a mix of near-threshold stimuli with stimulus-absent catch trials. When Karwan indicates that he saw a light in a stimulus-absent catch trial, he is making a:

a. Hit
b. Correct rejection
c. Miss
*d. False alarm

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Learning objective number (if applicable): 2.2
Cognitive domain: Application
Answer location: Signal Detection Theory (35)
Question type: MC

22. Karwan is a participant in a psychophysical experiment on visual detection. He is shown a mix of near-threshold stimuli with stimulus-absent catch trials. When Karwan indicates that he did not see a light when a light was actually present, he is making a:

a. Hit
b. Correction rejection
*c. Miss
d. False alarm

Learning objective number (if applicable): 2.2
Cognitive domain: Application
Answer location: Signal Detection Theory (35)
Question type: MC

23. In signal-detection theory, a criterion is:

a. The point at which thresholds are no longer masked
b. The number of correct rejections minus the number of false alarms
*c. An internal cutoff above which the observer makes one response and below which the observer makes another response
d. The subjective point at which visual and auditory stimuli are equivalent

Learning objective number (if applicable): 2.2
Cognitive domain: Comprehension
Answer location: Signal Detection Theory (36)
Question type: MC

24. In signal detection theory, if the cost of a miss is very high and the risk of a false alarm is very low, the criterion will be:

*a. Set very low to maximize hits
b. Set very low to maximize correct rejections
c. Eliminated altogether
d. Equivalent to Steven's Power law

Learning objective number (if applicable): 2.2
Cognitive domain: Analysis
Answer location: Signal Detection Theory
Question type: MC

25. A radiologist screening mammograms to detect breast cancer is likely to:

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*a. Adopt a low criterion because she does not want signal-detection misses
b. Adopt a high criterion because she does not want many signal-detection false alarms
c. Do everything she can to decrease sensitivity so as to create more correct rejections
d. All of the above

Learning objective number (if applicable): 2.2
Cognitive domain: Comprehension
Answer location: Signal Detection Theory (39)
Question type: MC

26. The mathematical measure of sensitivity in signal-detection theory is known as:

a. The cost coefficient
*b. D-prime
c. Alpha
d. Delta Sigma Tau

Learning objective number (if applicable): 2.2
Cognitive domain: Knowledge
Answer location: Signal Detection Theory (40)
Question type: MC

27. What is an ROC curve?

a. A measure of correction rejections and misses
b. The most common method used in magnitude estimation
*c. A plot of false alarms versus hits for any given sensitivity, indicating all possible outcomes for a given sensitivity
d. A measure of the effectiveness of the independent variable

Learning objective number (if applicable): 2.2
Cognitive domain: Comprehension
Answer location: Signal Detection Theory (40)
Question type: MC

28. Dr. Kao is developing a technique to screen for malignant tumors. Dr. Kao's technique should:

a. Increase sensitivity to maximize hits without regard to the number of misses
*b. Increase sensitivity to maximize hits but minimize misses
c. Decrease sensitivity to maximize correct rejections regardless of hits
d. All of the above

Learning objective number (if applicable): 2.2
Cognitive domain: Analysis
Answer location: Signal Detection Theory

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Question type: MC

29. Permanent hearing loss caused by damage to the cochlea or auditory nerve is called:

*a. Sensorineural hearing loss
b. Conductive hearing loss
c. Innate hearing loss
d. Bichromal hearing loss

Learning objective number (if applicable): 2.3
Cognitive domain: Knowledge
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (42)
Question type: MC

30. The inability of sound to be transmitted to the cochlea is known as:

a. Sensorineural hearing loss
*b. Conductive hearing loss
c. Innate hearing loss
d. Bichromal hearing loss

Learning objective number (if applicable): 2.3
Cognitive domain: Knowledge
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (42)
Question type: MC

31. An audiogram will show the:

a. Increase in decibels required to get a binaural response
b. Extent to which neural damage has occurred in the cochlea
c. Increase in sensitivity due to advanced hearing loss
*d. Lowering of sensitivity for different frequencies in each ear

Learning objective number (if applicable): 2.3
Cognitive domain: Knowledge
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (43)
Question type: MC

32. What is the name for the condition that causes an inability to focus clearly on far objects, which occurs because accommodation cannot make the lens thin enough?

a. Presbyopia
b. Amblyopia
c. Snellen's disease
*d. Myopia

Learning objective number (if applicable): 2.3

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Cognitive domain: Comprehension
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (44)
Question type: MC

33. A condition in which incoming light focuses behind the retina, leading to difficulty focusing on close-up objects, common in older adults, in whom the lens becomes less elastic, is known as:

*a. Presbyopia
b. Myopia
c. Cataracts
d. Macular degeneration

Learning objective number (if applicable): 2.3
Cognitive domain: Knowledge
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (44)
Question type: MC

34. Professor Everdine is interested in devising a scale to examine people's perception of saltiness. She asks participants to rate solutions with various amounts of salt dissolved in it on a scale from 0 (not salty at all) to 100 (extremely salty). This kind of scale is known as:

a. Method of limits
*b. Magnitude estimation
c. Signal detection scales
d. Hunger-game testing

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Magnitude Estimation
Question type: MC

35. A Trinidad moruga pepper scores 100,000 on the Scoville scale, whereas a simple habanero only scores 3,000. This tells us that:

a. Both pepper's piquancy cannot be measured
*b. The Trinidad moruga is higher and therefore more piquant than the habanero
c. Taste and pain can be reversed
d. All of the above

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Introduction
Question type: MC

36. Dr. Chudnofsky is interested in the smallest differences in the wavelength of light and the

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ability of humans to detect these differences. He should therefore design an experiment that will look at:

a. Correct rejections of non-chromatic stimuli
b. Absolute thresholds
*c. Difference thresholds
d. Magnitude estimation detection

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Method of Limits
Question type: MC

37. In two-point thresholds across the skin, one measures:

*a. The minimum distance at which two touches are perceived as two touches and not one
b. The maximum distance at which two touches are perceived as two touches and not one
c. The minimum distance at which one touch is perceived as two touches
d. Only the maximum distance for touches in the most sensitive areas of the skin

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: Method of Limits (29)
Question type: MC

38. A graph that illustrates the thresholds for the frequencies as measured by the audiometer is known as an:

a. Anthromat
b. Audiomat
c. Audio record
d. Audiogram

Learning objective number (if applicable): 2.3
Cognitive domain: Comprehension
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (43)
Question type: MC

39. Professor Everdine has devised a scale to examine people's perception of saltiness. She asks participants to rate solutions with various amounts of salt dissolved in it on a scale from 0 (not salty at all) to 100 (extremely salty). She finds that for every milligram of salt that is added, the perception of saltiness increases fourfold. That is, the perception of saltiness increases faster than the actual increase in salt. This finding can be said to represent:

a. Response compression

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*b. Response expansion
c. Response subtraction
d. Response addition

Learning objective number (if applicable): 2.1
Cognitive domain: Application
Answer location: Magnitude Estimation
Question type: MC

40. An observer is asked to adjust the level of pressure on the skin until the person can just barely feel the lightest pressure on their skin. Then the observer starts again from a different starting level of pressure. Which technique does this best represent?

a. Magnitude estimation
b. Response compression
c. Signal-inverse method
*d. Method of adjustment

Learning objective number (if applicable): 2.1
Cognitive domain: Analysis
Answer location: Method of Adjustment (31)
Question type: MC

41. What measures 15,000 on the Scoville scale for one person may represent a different number for somebody else.
a. True
*b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: Introduction (25)
Question type: TF

42. An absolute threshold is the smallest amount of a stimulus necessary to allow an observer to detect its presence.
*a. True
b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Limits (27)
Question type: TF

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43. Response compression is a psychophysical method in which participants judge and assign numerical estimates to the perceived strength of a stimulus.

a. True
*b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: Magnitude Estimation (32)
Question type: TF

44. In a signal-detection experiment, an observer claims to have heard a sound when none was present. Thus, the researcher classifies this as a "miss."

a. True
*b. False

Learning objective number (if applicable): 2.2
Cognitive domain: Comprehension
Answer location: Signal Detection Theory
Question type: TF

45. The two-point touch threshold is the minimum distance at which two touches are perceived as two touches and not one.

*a. True
b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: Method of Limits (29)
Question type: TF

46. Two observers make different judgments in a signal-detection experiment even though their sensitivity is identical. This may be the result of different criterion.

*a. True
b. False

Learning objective number (if applicable): 2.2
Cognitive domain: Comprehension
Answer location: Signal Detection Theory
Question type: TF

47. An ascending series is one in which a stimulus gets increasingly smaller along a physical dimension.

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a. True
*b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Method of Limits (29)
Question type: TF

48. Myopia is a condition causing an inability to focus clearly on far objects, also called nearsightedness; it occurs because accommodation cannot make the lens thin enough.
*a. True
b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Comprehension
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (44)
Question type: TF

49. Conductive hearing loss is permanent hearing loss caused by damage to the cochlea or auditory nerve.
a. True
*b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: In Depth: Psychophysics in Assessment: Hearing Tests and Vision Tests (44)
Question type: TF

50. In signal detection analysis, a false alarm is an error that occurs when a nonsignal is mistaken for a target signal.
*a. True
b. False

Learning objective number (if applicable): 2.1
Cognitive domain: Knowledge
Answer location: Signal Detection Theory (35)
Question type: TF

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