**Cognitive Psychology Mind Brain**

**How the Brain Gives Rise to the Mind**

**Multiple Choice**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ deals with the processing of information from the senses.

a. Encoding c. Perception

b. Executive processing d. Mental simulation

Answer: c

\*2. The cognitive process responsible for entering new information into memory is \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. executive processing c. attention

b. encoding d. representation in long-term memory

Answer: b

\*3. \_\_\_\_\_\_\_\_\_\_\_\_ allows you to hold information in awareness and to think about it.

a. Working memory c. Mental simulation

b. Attention d. Executive processing

Answer: a

Page(s) in Text: 2

4. Preparing and executing a response to a stimulus requires \_\_\_\_\_\_\_\_\_\_\_\_.

a. attention c. working memory

b. executive processing d. motor cognition

Answer: d

Page(s) in Text: 2-3

5. Plato made a distinction between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. wax and stone tablets c. memories for facts and events

b. the brain and its functions d. etching and carving

Answer: b

Page(s) in Text: 3

Topic: A Brief History

6. The mind-body problem was originally articulated by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Plato c. Aristotle

b. Locke d. Descartes

Answer: d

Page(s) in Text: 4

Topic: A Brief History

7. The idea that thought was composed of a series of images was espoused by \_\_\_\_\_\_\_.

a. Plato c. Locke

b. Descartes d. Berkeley

Answer: c

Page(s) in Text: 4

Topic: A Brief History

8. Looking within oneself to assess one’s mental activity is referred to as \_\_\_\_\_\_\_\_\_\_\_\_.

a. reflectance c. transference

b. introspection d. metacognition

Answer: b

Page(s) in Text: 4-5

Topic: A Brief History

9. \_\_\_\_\_\_\_\_\_ was interested in understanding the nature of consciousness.

a. Locke c. Chomsky

b. Berkeley d. Wundt

Answer: d

Page(s) in Text: 4

Topic: A Brief History

10. When you describe to your friend how a stunning sunset looked, you are engaging in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. verbal report c. introspection

b. self-report d. perception

Answer: c

Page(s) in Text: 5

Topic: A Brief History

11. According to Wundt and Tichner, consciousness can be understood by characterizing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. basic elements, rules that combine them c. physical stimulus, behavioral response

b. thoughts, associated processing resources d. perceptions, decisions about them

Answer: a

Page(s) in Text: 4

Topic: A Brief History

12. One of the problems with introspection is that people \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. are unaware of sensations c. could not do it

b. could not be trained in it d. can make decisions without knowing how

Answer: d

Page(s) in Text: 6

Topic: A Brief History

13. Functionalist psychology was developed by \_\_\_\_\_\_\_ and motivated by \_\_\_\_\_\_\_.

a. Tichner, Wundt c. James, Darwin

b. Wundt, James d. Skinner, Hull

Answer: c

Page(s) in Text: 6

Topic: A Brief History

14. William James was more interested in the \_\_\_\_\_\_\_\_ of mental activity than the \_\_\_\_\_\_\_\_\_ of mental activities.

a. function, nature c. observation, implication

b. basic components, whole d. conscious aspect, unconscious aspect

Answer: a

Page(s) in Text: 6

Topic: A Brief History

15. The central doctrine of the behaviorists was that psychologists should only study \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. stimuli and responses c. stimuli, processes, and responses

b. animal behavior d. stimuli, responses, and consequences

Answer: d

Page(s) in Text: 6

Topic: A Brief History

\*16. Consequences are important for behaviorist theories because consequences establish \_\_\_\_\_\_\_\_\_\_\_\_\_\_ between stimuli and behavior.

a. testable outcomes c. specific laws

b. associations d. observable events

Answer: b

Page(s) in Text: 6

Topic: A Brief History

17. If you opened the case of your desktop computer to determine what the different parts of the computer do, you might be considered a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. structuralist c. functionalist

b. behaviorist d. rationalist

Answer: c

Page(s) in Text: 4-6

Topic: A Brief History

18. If you studied your desktop computer to determine the basic units used by the computer to store information, you might be considered a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. structuralist c. functionalist

b. behaviorist d. rationalist

Answer: a

Page(s) in Text: 4-6

Topic: A Brief History

19. If you examined the relationship between what you type on the keyboard and what appears on your computer monitor, you might be considered a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. structuralist c. functionalist

b. behaviorist d. rationalist

Answer: b

Page(s) in Text: 4-6

Topic: A Brief History

20. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ believed that internal events such as motivation could be inferred directly from behaviors.

a. Skinner c. Hull

b. Thorndike d. Watson

Answer: c

Page(s) in Text: 6

Topic: A Brief History

21. Which of the following researchers did not play a prominent role in the cognitive revolution?

a. Chomsky c. Simon

b. Newell d. Hull

Answer: d

Page(s) in Text: 6-8

Topic: A Brief History

\*22. One of the reasons the cognitive revolution was successful is that technology allowed the mind to be compared to a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. flow chart c. artificial organ

b. computing machine d. Turing machine

Answer: b

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Topic: A Brief History

23. Eric Kandel won the Nobel Prize in Medicine or Physiology for studying changes in neurons related to learning. What level of analysis did he use to examine memory?

a. philosophical c. physical

b. functional d. information processing

Answer: c

Page(s) in Text: 10-11

Topic: Understanding the Mind

24. When Freud developed the idea that the mind can repress a memory until a person is able to address that memory, he was operating at what level of analysis?

a. philosophical c. physical

b. functional d. information processing

Answer: b

Page(s) in Text: 10-11

Topic: Understanding the Mind

25. Cognitive psychologists interested in memory typically examine how we encode, store, and retrieve information. What level of analysis do these psychologists operate at?

a. philosophical c. physical

b. functional d. information processing

Answer: d

Page(s) in Text: 10-11

Topic: Understanding the Mind

26. Based on your text, which level of analysis is superior for understanding the mind?

a. physical c. representational

b. philosophical d. information processing

Answer: d

Page(s) in Text: 10-11

Topic: Understanding the Mind

27. Two of your friends go to see a ball game. They both contact you about an amazing play. One sends a voice message and the other sends a text message. What characteristic of their messages is different?

a. content c. arguments

b. relations d. format

Answer: d

Page(s) in Text: 11

Topic: Understanding the Mind

28. You are reminiscing with your family one night about a past family experience. As people talk, you realize you remember an account of the event that is different from that of other family members. What aspect of your mental representation is different from you family members?

a. content c. arguments

b. relations d. format

Answer: a

Page(s) in Text: 11

Topic: Understanding the Mind

\*29. A set of processes that use and create mental representations as needed is a(n) \_\_\_\_\_\_\_\_\_\_\_\_.

a. algorithm c. processing system

b. mental representation d. modular system

Answer: c

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Topic: Understanding the Mind

30. When given a certain input, a(n) \_\_\_\_\_\_\_\_\_\_\_\_ is guaranteed to produce a certain response.

a. algorithm c. structure-process trade-off

b. mental representation d. modular system

Answer: a

Page(s) in Text: 13

Topic: Understanding the Mind

31. Serial algorithms :: parallel algorithms as

a. iterative :: simultaneous c. at once :: in steps

b. in steps :: at once d. general :: specific

Answer: b

Page(s) in Text: 13

Topic: Understanding the Mind

32. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to the ability to specify the correct combination of representations and processes to accomplish a task.

a. Adequacy c. Generalizability

b. Combinatory processing d. Identifiability

Answer: d

Page(s) in Text: 13

Topic: Understanding the Mind

33. Understanding the structure and function of the brain can help us determine the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a theory of cognitive processing.

a. generalizability c. explanatory adequacy

b. identifiability d. parsimoniousness

Answer: c

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Topic: Understanding the Mind

34. \_\_\_\_\_\_\_\_\_\_\_\_\_ are often referred to as the building blocks of the brain.

a. Glial cells c. Neurotransmitters

b. Synapses d. Neurons

Answer: d

Page(s) in Text: 17

Topic: The Cognitive Brain

\*35. The basic parts of the neuron include the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. axon, dendrites, and cell body c. dendrites, axon, and synapse

b. axon, terminal buttons, and synapse d. dendrite, synaptic cleft, and cell body

Answer: a

Page(s) in Text: 17-18

Topic: The Cognitive Brain

36. Action potentials are characterized as being \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. gradated c. scaled

b. all-or-none d. variable

Answer: b

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Topic: The Cognitive Brain

37. The brain and spinal cord make up the \_\_\_\_\_\_\_\_\_\_\_ nervous system while the skeletal and autonomic nervous systems make up the \_\_\_\_\_\_\_\_\_\_\_ nervous system.

a. sympathetic, parasympathetic c. central, peripheral

b. peripheral, central d. parasympathetic, sympathetic

Answer: c

Page(s) in Text: 18-19

Topic: The Cognitive Brain

38. As you make a presentation in front of your class, you find that your palms are sweaty and your heart is beating quickly. These physiological changes are due to the \_\_\_\_\_\_\_\_\_\_\_ nervous system.

a. peripheral c. autonomic

b. parasympathetic d. sympathetic

Answer: d

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Topic: The Cognitive Brain

39. As you sit in your seat after making a class presentation, you notice that your heart beat and respiratory are rate slowing down. This change is due to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nervous system.

a. peripheral c. autonomic

b. parasympathetic d. sympathetic

Answer: b

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Topic: The Cognitive Brain

40. The cerebral cortex has folds or winkles. The top of a fold or winkle is referred to as a \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. fissure c. gyrus

b. sulcus d. ventricle

Answer: c

Page(s) in Text: 20

Topic: The Cognitive Brain

41. The cortex is divided into cerebral hemispheres. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the main connection between the hemispheres.

a. corpus callosum c. pons

b. reticular formation d. hippocampus

Answer: a

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Topic: The Cognitive Brain

\*42. The four major lobes of the brain are:

a. ventral, dorsal, medial, lateral c. visual, auditory, somatosensory, decisional

b. occipital, parietal, temporal, frontal d. cortical, ventricle, meninges, cerebral

Answer: b

Page(s) in Text: 20

Topic: The Cognitive Brain

43. The visual pathway has been traced from the eye to the thalamus. The thalamus is made of several different nuclei. The nucleus important for vision is toward the side or farther away from midline. As a result, this area is called the \_\_\_\_\_\_\_\_\_\_ geniculate nucleus.

a. superior c. inferior

b. lateral d. medial

Answer: b

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Topic: The Cognitive Brain

44. What sensory information is primarily processed in the occipital lobe?

a. auditory c. visual

b. somatosensory d. olfactory

Answer: c

Page(s) in Text: 20

Topic: The Cognitive Brain

45. What sensory information is primarily processed in the parietal lobe?

a. auditory c. visual

b. somatosensory d. olfactory

Answer: b

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Topic: The Cognitive Brain

46. What type of processing does not take place in the temporal lobe?

a. visual memory c. language comprehension

b. language production d. emotion

Answer: b

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Topic: The Cognitive Brain

47. There is a famous neuropsychological example in which Phineas Cage, a railroad foreman, accidentally had a tamping rod shoot from under his chin through his skull damaging his frontal lobe. Which of the following is most likely to have changed for Phineas after the accident?

a. his personality c. his ability to recognize objects

b. his sense of touch d. his hearing

Answer: a

Page(s) in Text: 20-22

Topic: The Cognitive Brain

Question Type: applied, difficult

48. After receiving a crushing hit by the linebacker, the running back gets to return to the huddle but has difficulty running. Which lobe was most likely affected by the hit?

a. occipital c. temporal

b. parietal d. frontal

Answer: d

Page(s) in Text: 20-22

Topic: The Cognitive Brain

Question Type: applied, difficult

49. Unfortunately, Sam was buying a hot dog from a vendor at a baseball game when a foul ball hit him in the head. After the hit, Sam seemed to be talking louder than usual and had difficulty understanding what his friends were saying to him. Which lobe was most likely affected by the foul ball?

a. occipital c. temporal

b. parietal d. frontal

Answer: c

Page(s) in Text: 20-22

Topic: The Cognitive Brain

Question Type: applied, difficult

50. This subcortical area receives sensory information from the ears and sends it to the auditory cortex.

a. hippocampus c. hypothalamus

b. thalamus d. amygdala

Answer: d

Page(s) in Text: 20-22

Topic: The Cognitive Brain

51. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ controls bodily functions such as body temperature and blood pressure.

a. hippocampus c. hypothalamus

b. thalamus d. amygdala

Answer: c

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Topic: The Cognitive Brain

52. The \_\_\_\_\_\_\_\_\_\_\_\_\_ plays an important role in storing memories in the temporal lobe.

a. hippocampus c. hypothalamus

b. thalamus d. amygdala

Answer: a

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Topic: The Cognitive Brain

53. Physical coordination is controlled in the \_\_\_\_\_\_\_\_\_\_\_\_.

a. frontal lobe c. pons

b. reticular formation d. cerebellum

Answer: d

Page(s) in Text: 24

Topic: The Cognitive Brain

54. The basal ganglia are associated with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. basic instincts c. taste perception

b. developing habits d. time estimation

Answer: b

Page(s) in Text: 24

Topic: The Cognitive Brain

Question Type: factual, difficult

55. Rewards during learning activate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. amygdala c. nucleus accumbens

b. cerebellum d. reticular formation

Answer: c

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Topic: The Cognitive Brain

Question Type: factual, difficult

56. What part of the brain would you lesion to determine if anticipating rewards is really an important part of learning?

a. amygdala c. nucleus accumbens

b. cerebellum d. reticular formation

Answer: c

Page(s) in Text: 24

Topic: The Cognitive Brain

Question Type: applied, difficult

57. If you somehow damaged your pons, what would you have difficulty doing?

a. making facial expressions c. walking

b. comprehending speech d. recalling old memories

Answer: a

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Topic: The Cognitive Brain

Question Type: applied, difficult

\*58. To control seizures, a patient has part of his hippocampus removed. In which cognitive function would you anticipate seeing impairments?

a. motivation c. motor coordination

b. visual recognition d. memory

Answer: d

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Topic: The Cognitive Brain

59. Cognitive \_\_\_\_\_\_\_\_\_\_\_\_\_ emphasizes information processing while cognitive \_\_\_\_\_\_\_\_\_\_\_\_\_ emphasizes the brain.

a. neuroscience, psychology c. neuroscience, phrenology

b. psychology, neuroscience d. psychology, biology

Answer: b

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Topic: Studying Cognition

\*60. A variety of research methods can be used in cognitive psychology. Unfortunately, limitations can be found for all of them. This is one reason why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is (are) important.

a. association c. dissociation

b. converging evidence d. behavioral methods

Answer: b

Page(s) in Text: 26

Topic: Studying Cognition

61. An advantage of the protocol collection method is that it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. is subtle c. can reveal a sequence of processing steps

b. assesses subjective reactions d. measures processing effectiveness

Answer: c

Page(s) in Text: 27-28

Topic: Studying Cognition

62. Each of the following is a limitation of using accuracy as a dependent variable in memory research except \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. ceiling effects c. floor effects

b. expectancy effects d. speed-accuracy tradeoff

Answer: b

Page(s) in Text: 27-28

Topic: Studying Cognition

63. Experimental expectancy effects and speed-accuracy tradeoff are potential research limitations when using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. response time c. accuracy

b. judgments d. protocol collection

Answer: a

Page(s) in Text: 27-28

Topic: Studying Cognition

64. If everyone in class gets nearly all the multiple choice questions correct on this exam, you might argue that the questions were too easy resulting in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. floor effect c. expectancy effect

b. curve d. ceiling effect

Answer: d

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Topic: Studying Cognition

65. You conduct a study in which you measure both accuracy and response time. As you examine the data, you notice that response times are fairly quick but the participants made quite a few errors. What could possibly explain this finding?

a. expectancy effects c. speed-accuracy trade-off

b. floor effects d. task demands

Answer: c

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Topic: Studying Cognition

66. Psychology majors are not always good psychological research participants because they can sometimes figure out what the experiment is about and then tend to change their responses accordingly resulting in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. ceiling effects c. experimental curing effects

b. experimenter bias d. experimental expectancy effects

Answer: d

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Topic: Studying Cognition

67. When cues are present within a task itself that suggest to a participant how to respond in an experiment, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ exist.

a. expectancy effects c. a speed-accuracy trade-off

b. task demands d. confounds

Answer: b

Page(s) in Text: 28

Topic: Studying Cognition

68. Neuroimaging methods can be evaluated using four dimensions. Which of the following is not a dimension used in evaluating neuroimaging methods?

a. functional resolution c. invasiveness

b. spatial resolution d. temporal resolution

Answer: a

Page(s) in Text: 29

Topic: Studying Cognition

69. Which of the following neuroimaging methods would be best to use if you are interested in locating the place in the brain associated with a certain cognitive function?

a. EEG c. MRI

b. optical imaging d. MEC

Answer: c

Page(s) in Text: 30

Topic: Studying Cognition

70. Which of the following neuroimaging methods would be best to use if you are interested in examining changes in cognitive processing over time?

a. optical imaging c. MRI

b. ERP d. PET

Answer: b

Page(s) in Text: 30

Topic: Studying Cognition

\*71. A(n) \_\_\_\_\_\_\_\_\_ can be used to determine the part of the brain damaged after a stroke and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be used to determine the extent of cognitive deficits caused by the stroke.

a. ERP, TMS c. ERP, transcranial magnetic stimulation

b. MRI, self-reports d. MRI, neuropsychological studies

Answer: d

Page(s) in Text: 29-37

Topic: Studying Cognition

72. Which of the following is not a limitation of neuropsychological studies?

a. damage not be limited to one area c. lack of adequate neuropsychological tests

b. temporal resolution is poor d. only good for areas near the brain surface

Answer: a

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Topic: Studying Cognition

73. All of the following are potential problems when using drugs that affect specific brain areas except that they

a. affect multiple brain areas. c. help determine brain areas for certain tasks.

b. take a long time to work . d. only provide correlational evidence of function.

Answer: d

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Topic: Studying Cognition

74. The difference between computer simulation models and artificial intelligence is that computer simulation models \_\_\_\_\_\_\_\_\_\_\_\_ underlying human cognitive processing while artificial intelligence \_\_\_\_\_\_\_\_\_\_\_\_ intelligent behavior.

a. mimic, corresponds to c. represent, produces

b. fabricate, copies d. are unrelated to, creates

Answer: c

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Topic: Studying Cognition

75. Although process models can specify the sequence of processes that occur from a stimulus input to a corresponding response, they also have all of the following limitations except they \_\_\_\_\_\_\_\_\_\_.

a. assume serial processing c. do not learn

b. cannot convert input to output d. only provide feedback when a process is complete

Answer: b

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Topic: Studying Cognition

76. Which of the following would be part of a neural-network model?

a. intermediate layer c. input layer

b. output layer d. hidden layer

Answer: a

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Topic: Studying Cognition

**Short Answer**

77. Describe Wundt’s approach to understanding consciousness.

Answer: First characterize the basic sensations and then find the rules that combine them.

Page(s) in Text: 4

Topic: A Brief History

78. Briefly state the two major contributions of Wundt’s school of psychology.

Answer: (1) showed that mental activities could be broken down into basic operations and (2) developed objective methods for assessing mental activity

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Topic: A Brief History

79. Explain what the cognitive revolution was in response to.

Answer: (1) researchers understood the limitations of behaviorism and became open to other approaches, (2) technological advances led to new ways to think about mental activity, (3) comparisons of mind to machine, (4) new methods developed to test predictions from computational models leading to more objective measures of mental activity

Page(s) in Text: 7-9

Topic: A Brief History

80. Although behaviorists have made numerous contributions to the nature of learning and to experimental psychology, they failed to account for a number of important areas related to cognition. List at least three of these areas.

Answer: (1) some behaviorists rejected all discussion of internal events, (2) could not explain the most interesting human behaviors such as language, and (3) failed to provide insights into the nature of perception, memory, decision making

Page(s) in Text: 7

Topic: A Brief History

81. Why is it important to be able to examine internal events in contrast to only external events as proposed by the behaviorists?

Answer: Sometimes an input does not produce a desired response. When this happens, it is important to determine how the input is interpreted in order to fully understand the process of responding to a particular stimulus.

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Topic: A Brief History

82. Your authors define two facets to mental representations. Describe these facets and provide an example of how they can be combined to represent information.

Answer: form or means by which the information is conveyed (e.g., visual) and content or meaning conveyed (e.g., scene)

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Topic: Understanding the Mind

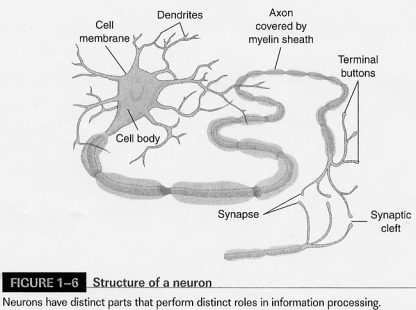
83. Cognitive psychology has been relying more heavily on facts about the brain in recent years. Give an example that illustrates the importance of this trend.

Answer: Different types of information processing can lead to the same result; therefore, it is important to examine other kinds of information, such as brain activity, in order to determine how the processing takes place.

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Topic: Understanding the Mind

84. Draw and label a neuron.



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Topic: The Cognitive Brain

85. What is the role of neurotransmitters in communicating between neurons?

Answer: Neurotransmitters send information from one neuron to another across the synaptic cleft; the effect of the neurotransmitter depends on the receptors present at the post-synaptic neuron with some neurotransmitters being excitatory and some being inhibitory.

Page(s) in Text: 18

Topic: The Cognitive Brain

86. Name the four lobes of the brain and state the major functions associated with each.

Answer: frontal – speech production, fine motor movements, planning and reasoning, emotions, personality; parietal – representation of space, somatosensory processing, consciousness, attention, mathematical thinking; temporal – visual memory, auditory processing, language comprehension, memory, emotion; occipital – vision

Page(s) in Text: 20-22

Topic: The Cognitive Brain

87. Briefly state the difference between cognitive psychology and cognitive neuroscience.

Answer: Cognitive psychology focuses on information processing while cognitive neuroscience focuses on the brain and the different parts of the brain involved in information processing.

Page(s) in Text: 24-25

Topic: Studying Cognition

88. What is the difference between spatial and temporal resolution?

Answer: Spatial resolution deals with how precisely an area in the brain producing a signal can be localized. Temporal resolution refers to how well changes in brain activity can be tracked.

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Topic: Studying Cognition

89. Your authors make a distinction between correlational neural methods and causal neural methods. Briefly state the basis for this distinction.

Answer: Correlational neural methods (e.g., MRI) associate a brain location with a function. Causal neural methods (e.g., lesion) allow for a causal connection between a brain area and function.

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Topic: A Brief History

**Essay**

90. Describe the contributions of the different schools of psychology (e.g., functionalists) to the current state of cognitive psychology.

Answer: Descartes – mind-body problem; Locke – thought is a series of mental images; Berkeley – some concepts are too abstract for mental images; Wundt and Tichner (structuralism) – mental activity can be broken down into basic operations and these could be studied objectively; James (functionalism) – focused on the function of mental activity; behaviorism – experimental techniques; computer science – computer as a model and a research tool

Page(s) in Text: 3-7

Topic: A Brief History

91. The computer has proven to be a helpful analogy for understanding the mind and brain. Provide an overview of this important analogy in cognitive psychology. Be sure to include both hardware and software in your description.

Answer: Both the computer and brain are information processors. Although computer hardware can be loosely likened to the brain and software to mental activity, both may be more accurately examined on a physical and functional level. Additionally, the hard drive is like long-term memory, etc.

Page(s) in Text: 9-13

Topic: Understanding the Mind

92. What dilemma is created by structure-process trade-offs and can facts about the brain impact cognitive theories to deal with the dilemma?

Answer: A structure-process trade-off occurs when we change a theory of a representation and then compensate for that change by modifying the theory of the process. This makes theories somewhat arbitrary. However, theories should be consistent with the properties of the brain.

Page(s) in Text: 13-16

Topic: Understanding the Mind

93. Explain why artificial intelligence researchers are interested in designing complex processing systems that perform human tasks. What are some of the strengths and weaknesses of this approach?

Answer: AI researchers believe that human cognition is so complex that creating a processing system that performs similar tasks can provide insight into human cognition. While the AI approach can lead to important insights, AI research often ignores how processing takes place in the brain.

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Topic: Studying Cognition

94. What is meant by “converging evidence”? Explain why it is important for developing our understanding of cognitive processing.

Answer: Converging evidence is provided when different types of results point to the same conclusion. Converging evidence is important because all methodologies have limitations or weaknesses.

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Topic: Studying Cognition

95. What is a dissociation? What information does it tell us about cognitive processing? How does a double dissociation improve upon this information?

Answer: A dissociation means that an activity or a variable affects performance on one task. In double dissociation, an activity or variable affects one process (P1) but not another (P2) while a second activity or variable has the opposite affect (impairs P2 but not P1). Double dissociations provide strong evidence for two processes.

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Topic: Studying Cognition

96. You are interested in studying the effects of music on memory. Outline an experiment being sure to specify the conditions and measures you will use. Also, indicate a potential problem you might encounter in the study and state how you will attempt to control for it.

Answer: Answers will vary but should focus on behavioral methods. Problems to address could include ceiling effects, floor effects, speed-accuracy trade-off, experimental expectancy effects, and task demands.

Page(s) in Text: 27-29

Topic: Studying Cognition

97. Five different neuroimaging methods were presented in the text. Select and compare three of these methods.

Answer: EEG and ERP have poor spatial resolution but excellent temporal resolution, low invasiveness, and are relatively low cost. MEC have good spatial resolution (for sulci only) and excellent temporal resolution; their invasiveness is low but cost is high. PET has good spatial resolution but poor temporal resolution. PET is highly invasive and costly. MRI and fMRI have excellent spatial resolution and marginal temporal resolution. Invasiveness is low but the cost is high. Optical imaging has poor spatial resolution and marginal temporal resolution. It is moderately invasive but the cost is low.

Page(s) in Text: 29-36

Topic: Studying Cognition

98. Discuss the pros and cons of using electroencephalography (EEG) or event-related potentials (ERP).

Answer: Pros – high temporal resolution, low invasiveness, and low cost; Cons – disrupted by slight movements, poor spatial resolution

Page(s) in Text: 30-31

Topic: Studying Cognition

99. In what ways are neural-network models superior to process models?

Answer: There are several limitations to process models. Process models typically involve serial processing, provide feedback only after each processing step is complete, and do not learn. Neural-network models, on the other hand, do not have these limitations plus they emphasize the difference between a neural code and a mental representation.

Page(s) in Text: 40-43

Topic: Studying Cognition

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 1 – Quick Quiz

1. The cognitive process responsible for entering new information into memory is \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. executive processing c. attention

b. encoding d. representation in long-term memory

2. \_\_\_\_\_\_\_\_\_\_\_\_ allows you to hold information in awareness and to think about it.

a. Working memory c. Mental simulation

b. Attention d. Executive processing

3. Consequences are important for behaviorist theories because consequences establish \_\_\_\_\_\_\_\_\_\_\_\_\_\_ between stimuli and behavior.

a. testable outcomes c. specific laws

b. associations d. observable events

4. One of the reasons the cognitive revolution was successful is that technology allowed the mind to be compared to a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. flow chart c. artificial organ

b. computing machine d. Turing machine

5. A set of processes that use and create mental representations as needed is a(n) \_\_\_\_\_\_\_\_\_\_\_\_.

a. algorithm c. processing system

b. mental representation d. modular system

6. The basic parts of the neuron include the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. axon, dendrites, and cell body c. dendrites, axon, and synapse

b. axon, terminal buttons, and synapse d. dendrite, synaptic cleft, and cell body

7. The four major lobes of the brain are:

a. ventral, dorsal, medial, lateral c. visual, auditory, somatosensory, decisional

b. occipital, parietal, temporal, frontal d. cortical, ventricle, meninges, cerebral

8. To control seizures, a patient has part of his hippocampus removed. In which cognitive function would you anticipate seeing impairments?

a. motivation c. motor coordination

b. visual recognition d. memory

9. A variety of research methods can be used in cognitive psychology. Unfortunately, limitations can be found for all of them. This is one reason why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is (are) important.

a. association c. dissociation

b. converging evidence d. behavioral methods

10. A(n) \_\_\_\_\_\_\_\_\_ can be used to determine the part of the brain damaged after a stroke and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be used to determine the extent of cognitive deficits caused by the stroke.

a. ERP, TMS c. ERP, transcranial magnetic stimulation

b. MRI, self-reports d. MRI, neuropsychological studies

Answer Key

Chapter 1 – Quick Quiz

1. Answer: b

Page(s) in Text: 2

2. Answer: a

Page(s) in Text: 2

3. Answer: b

Page(s) in Text: 6

Topic: A Brief History

4. Answer: b

Page(s) in Text: 8

Topic: A Brief History

5. Answer: c

Page(s) in Text: 12

Topic: Understanding the Mind

6. Answer: a

Page(s) in Text: 17-18

Topic: The Cognitive Brain

7. Answer: b

Page(s) in Text: 20

Topic: The Cognitive Brain

8. Answer: d

Page(s) in Text: 23

Topic: The Cognitive Brain

9. Answer: b

Page(s) in Text: 26

Topic: Studying Cognition

10. Answer: d

Page(s) in Text: 29-37

Topic: Studying Cognition

Chapter 2: Perception

**Multiple Choice**

1. When we search for an object, we only see fine details \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. up close c. at the center of the scene

b. at fixation d. they are important to us

Answer: b

Page(s) in Text: 52

Topic: What It Means to Perceive

\*2. Processing part of a sensory input for additional details at the expense of others parts involves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. search c. selective attention

b. signal separation d. shifting where you are looking

Answer: c

Page(s) in Text: 52

Topic: What It Means to Perceive

3. Perception provides information concerning \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_.

a. what, how c. what, when

b. where, how d. what, where

Answer: d

Page(s) in Text: 53

Topic: How It Works: The Case of Visual Perception

4. Ultimately, our perceptions lead to \_\_\_\_\_\_\_\_\_\_\_\_.

a. recognition c. action

b. attention d. awareness

Answer: c

Page(s) in Text: 53

Topic: How It Works: The Case of Visual Perception

\*5. Which set below is in the proper order for visual processing?

a. retina, optic nerve, LGN c. ganglion cells, photoreceptors, LGN

b. LGN, optic nerve, V1 d. optic nerve, striate cortex, ganglion cells

Answer: a

Page(s) in Text: 53

Topic: How It Works: The Case of Visual Perception

6. In vision, the dorsal pathway::ventral pathway as \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frontal lobes::temporal lobes c. LGN::striate cortex

b. occipital lobes::parietal lobes d. parietal lobes::temporal lobes

Answer: d

Page(s) in Text: 53-55

Topic: How It Works: The Case of Visual Perception

Question Type: factual, difficult

\*7. Where an item is located and how it might be acted upon in space is processed in the \_\_\_\_\_\_\_ pathway.

a. visual c. ventral

b. dorsal d. caudal

Answer: b

Page(s) in Text: 53

Topic: How It Works: The Case of Visual Perception

\*8. Recognition and identification of an object occurs in the \_\_\_\_\_\_\_\_ pathway.

a. visual c. ventral

b. superior d. dorsal

Answer: c

Page(s) in Text: 55

Topic: How It Works: The Case of Visual Perception

\*9. \_\_\_\_\_\_\_\_\_\_\_\_ processes are driven by sensory information while \_\_\_\_\_\_\_\_\_\_ processes are driven by knowledge, beliefs, expectations, and goals.

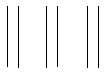
a. External, internal c. Top-down, bottom-up

b. Bottom-up, top-down d. Passive, active

Answer: b

Page(s) in Text: 55

Topic: How It Works: The Case of Visual Perception

10.  If you see six vertical lines to the left, you are likely engaged in \_\_\_\_\_\_\_\_\_\_ processing.

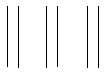
a. top-down c. bottom-up

b. external d. passive

Answer: c

Page(s) in Text: 55

Topic: How It Works: The Case of Visual Perception

11. If you see three pairs of two lines to the left, you are likely engaged in \_\_\_\_\_\_\_\_\_\_\_ processing.

a. internal c. top-down

b. active d. bottom-up

Answer: c

Page(s) in Text: 55

Topic: How It Works: The Case of Visual Perception

12. Perceptions are \_\_\_\_\_\_\_\_\_ of what we see.

a. mental copies c. mental images

b. interpretations d. neural codes

Answer: b

Page(s) in Text: 56

Topic: How It Works: The Case of Visual Perception

13. Perceptions are formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_ processing.

a. bottom-up c. passive and active

b. bottom-up and top-down d. internal

Answer: b

Page(s) in Text: 56

Topic: How It Works: The Case of Visual Perception

14. Our interpretations of the world are influenced by our \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.

a. bottom-up, top-down processing c. environment, experience

b. motivation, goals d. biological structure, experience

Answer: d

Page(s) in Text: 56

Topic: How It Works: The Case of Visual Perception

15. An experiment in which a kitten is placed in an environment with only vertical lines for a period of time and then has difficulty moving about an environment with only horizontal lines demonstrates \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the importance of the environment c. the importance of a critical period

b. the importance of research ethics d. the importance of both vertical and horizontal lines

Answer: c

Page(s) in Text: 56-57

Topic: How It Works: The Case of Visual Perception

16. Sensory information from all modalities appears to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. be processed equally c. be processed serially with vision first

b. compete for cortical resources d. be processed according to “first in - first out”

Answer: b

Page(s) in Text: 57

Topic: How It Works: The Case of Visual Perception

17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to a cell that responds to a certain area in the physical world at a particular moment.

a. Visual field c. Ganglion

b. Receptive field d. Receptor

Answer: b

Page(s) in Text: 58

Topic: Building from the Bottom Up: From Features to Objects

18. A collection of photoreceptors organized in such a way that a light excites the photoreceptors in the middle but inhibits photoreceptors toward the outside is also known as a(n) \_\_\_\_\_\_\_\_\_\_\_.

a. basic receptive field c. center-surround receptive field

b. excitatory receptive field d. complex receptive field

Answer: c

Page(s) in Text: 58-59

Topic: Building from the Bottom Up: From Features to Objects

19. A light and dark bar are side by side. When you look at the bars, a portion of the light bar looks lighter next to the dark bar and a portion of the dark bar looks darker next to the light bar. This phenomenon is referred to a \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. lateral inhibition c. edge detection

b. ganglion interactions d. Mach bands

Answer: d

Page(s) in Text: 62

Topic: Building From the Bottom Up: From Features to Objects

20. To process detail, you need a \_\_\_\_\_\_\_\_\_ receptive field.

a. large c. center-surround

b. medium d. small

Answer: d

Page(s) in Text: 62-63

Topic: Building from the Bottom Up: From Features to Objects

21. Part of the visual pathway that is easy to recognize because it looks like an “X” is the \_\_\_\_\_\_\_\_.

a. lateral geniculate nucleus c. optic tract

b. superior colliculus d. optic chiasm

Answer: d

Page(s) in Text: 63

Topic: Building from the Bottom Up: From Features to Objects

22. Cells in the visual cortex that are organized according to their sensitivity to certain aspects of a visual feature are referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. receptive fields c. extrastriate cortex

b. hypercolumns d. V1

Answer: b

Page(s) in Text: 63

Topic: Building from the Bottom Up: From Features to Objects

23. The tilt aftereffect is an example in which some cells are \_\_\_\_\_\_\_\_\_\_ in order to provide evidence for the type of information processed by other cells.

a. removed c. inhibited

b. excited d. fatigued

Answer: d

Page(s) in Text: 64

Topic: Building from the Bottom Up: From Features to Objects

24. Damage to this area of the extrastriate cortex results in akinetopsia.

a. V2 c. V5

b. V4 d. V1

Answer: c

Page(s) in Text: 65

Topic: Building from the Bottom Up: From Features to Objects

Question Type: factual, difficult

25. Achromatopsia results from damage to \_\_\_\_\_\_\_.

a. V2 c. V5

b. V4 d. V1

Answer: d

Page(s) in Text: 65

Topic: Building from the Bottom Up: From Features to Objects

Question Type: factual, difficult

26. Mark sustained a head injury during a car accident. After the accident, Mark had no memory of color. He is most likely suffering from which of the following?

a. akinestopia c. achromatopsia

b. amnesia d. agnosia

Answer: c

Page(s) in Text: 65

Topic: Building from the Bottom Up: From Features to Objects

27. John had a stroke. After the stroke he reported only being able to see a series of still images – no fluid motion. You order an MRI to look for damage to area \_\_\_\_\_\_\_.

a. V1 c. V2

b. V5 d. V4

Answer: b

Page(s) in Text: 65

Topic: Building from the Bottom Up: From Features to Objects

28. Akinetopsia is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. cortical color blindness c. motion deficit syndrome

b. prosopagnosia d. motion blindness

Answer: d

Page(s) in Text: 65

Topic: Building from the Bottom Up: From Features to Objects

29. Grouping principles were discovered by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

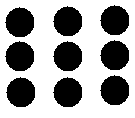
a. Tichner c. Wundt

b. Gestalt psychologists d. functionalist psychologists

Answer: b

Page(s) in Text: 65

Topic: Building From the Bottom Up: From Features to Objects

30.  Which Gestalt grouping principle explains why the nine dots to the left look like three columns of three dots each?

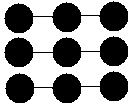
a. good continuation c. uniform connectedness

b. similarity d. proximity

Answer: d

Page(s) in Text: 65-66

Topic: Building from the Bottom Up: From Features to Objects

31. \_\_\_\_\_\_\_\_\_\_\_\_\_ explains why these dots are seen as three rows of three dots.

a. Good continuation c. Uniform connectedness

b. Similarity d. Proximity

Answer: c

Page(s) in Text: 65-66

Topic: Building from the Bottom Up: From Features to Objects

32. When you look at  you see and  instead of some other configuration due to which Gestalt grouping principle?

a. closure c. similarity

b. uniform connectedness d. good continuation

Answer: d

Page(s) in Text: 66

Topic: Building from the Bottom Up: From Features to Objects

33. Why might you perceive this as an O instead of a C?

a. good continuation c. uniform connectedness

b. closure d. familiarity

Answer: b

Page(s) in Text: 66

Topic: Building from the Bottom Up: From Features to Objects

\*34. Sometimes you can see a shape that is not really present because your visual system fills in parts of the shape. When this happens, we see a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. pseudo-shape c. illusory context

b. subjective illusion d. subjective contour

Answer: d

Page(s) in Text: 68

Topic: Building from the Bottom Up: From Features to Objects

35. Objects that are occluded are seen as \_\_\_\_\_\_\_\_\_\_ objects.

a. complete c. fragmented

b. unrecognizable d. missing

Answer: a

Page(s) in Text: 67-68

Topic: Building from the Bottom Up: From Features to Objects

36. Agnosia results from damage to \_\_\_\_\_\_\_\_\_\_\_\_.

a. sensory organs c. sensory nerves

b. part of the brain d. the spinal cord

Answer: b

Page(s) in Text: 70

Topic: Achieving Visual Recognition: Have I Seen You Before?

37. If you are diagnosing someone with potential agnosia, you need to rule out \_\_\_\_\_\_\_\_\_\_.

a. cortical damage c. environmental conditions

b. damage to the sense organs d. genetic factors

Answer: b

Page(s) in Text: 70

Topic: Achieving Visual Recognition: Have I Seen You Before?

\*38. After a stroke, Steve is unable to recognize his wife’s face can but recognize her by her voice. Steve’s inability to recognize his wife’s face may be due to \_\_\_\_\_\_\_\_\_\_\_\_.

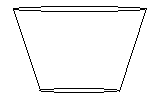
a. selective memory loss c. post-stroke syndrome

b. multi-sensory interference d. visual agnosia

Answer: d

Page(s) in Text: 70-71

Topic: Achieving Visual Recognition: Have I Seen You Before?

39. When you look at a bucket from the side, you see something like this However, when you look down from above the bucket you see looks something like this  Why are these two images of the same object so different?

a. object perspective c. observer perspective

b. unusual vantage point d. viewpoint dependence

Answer: d

Page(s) in Text: 71-72

Topic: Achieving Visual Recognition: Have I Seen You Before?

\*40. Template-matching models :: Feature-matching models as

a. part :: whole c. whole :: part

b. pattern :: corresponding d. identical :: characteristic

Answer: c

Page(s) in Text: 72-73

Topic: Achieving Visual Recognition: Have I Seen You Before?

41. Recognizing a golden retriever, poodle, and husky as dogs represents \_\_\_\_\_\_\_\_\_\_\_.

a. template matching c. exemplar variation

b. viewpoint dependence d. feature matching

Answer: c

Page(s) in Text: 72

Topic: Achieving Visual Recognition: Have I Seen You Before?

42. Research has shown that there are neurons in the visual cortex that are tuned to all of the following visual features except \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. color c. letters

b. shape d. eyes of a face

Answer: c

Page(s) in Text: 76

Topic: Achieving Visual Recognition: Have I Seen You Before?

43. Geons are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. viewpoint dependent c. configural models

b. viewpoint invariant d. templates

Answer: b

Page(s) in Text: 79

Topic: Achieving Visual Recognition: Have I Seen You Before?

\*44. \_\_\_\_\_\_\_\_\_\_ are simple three-dimensional geometric shapes that are combined to form the objects we see.

a. Icons c. Vertices

b. Cubicles d. Geons

Answer: d

Page(s) in Text: 79

Topic: Achieving Visual Recognition: Have I Seen You Before?

45. Configural models take into account \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the types of geons present c. viewpoints

b. spatial relations d. feature matching

Answer: b

Page(s) in Text: 79

Topic: Achieving Visual Recognition: Have I Seen You Before?

46. Describing a suspicious person as having eyes too close together is consistent with which model of object recognition?

a. template-matching models c. feature-matching models

b. configural models d. recognition-by-components model

Answer: b

Page(s) in Text: 81

Topic: Achieving Visual Recognition: Have I Seen You Before?

Question Type: applied, difficult

\*47. Prosopagnosia refers to the inability to recognize different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. objects c. geons

b. colors d. faces

Answer: d

Page(s) in Text: 83

Topic: Achieving Visual Recognition: Have I Seen You Before?

48. The four types of models of object recognition include all of the following except \_\_\_\_\_\_\_\_\_\_.

a. template-matching models c. feature-matching models

b. recognition-by-context models d. configural models

Answer: b

Page(s) in Text: 71-83

Topic: Achieving Visual Recognition: Have I Seen You Before?

49. Face recognition has been linked to what area in the brain?

a. fusiform gyrus c. thalamus

b. central sulcus d. medial temporal area

Answer: a

Page(s) in Text: 84

Topic: Achieving Visual Recognition: Have I Seen You Before?

Question Type: factual, difficult

50. Illusions of brightness and size show us that \_\_\_\_\_\_\_\_\_ can influence our perceptions.

a. confusion c. context

b. errors d. uncertainty

Answer: c

Page(s) in Text: 85

Topic: Interpreting from the Top Down: What You Know Guides What You See

51. If you visit a plastic surgeon to discuss a nose job, you should look at pictures of different noses on a face instead of pictures of individual noses because of the \_\_\_\_\_\_\_\_\_\_\_.

a. face superiority effect c. size illusion

b. face perception adaptation d. interactive processing

Answer: a

Page(s) in Text: 90

Topic: Interpreting from the Top Down: What You Know Guides What You See

52. Network feedback models include \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. recognition monitoring c. parallel processing

b. confirmation monitoring d. bottom-up and top-down processing

Answer: d

Page(s) in Text: 81

Topic: Interpreting from the Top Down: What You Know Guides What You See

53. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use information from previous experiences to make inferences about the environment.

a. Bayesian approaches c. Superiority effects

b. Context effects d. Network feedback models

Answer: a

Page(s) in Text: 92-93

Topic: Interpreting from the Top Down: What You Know Guides What You See

54. There are two young children. One lives on a farm and has seen dogs, cats, horses, cows, and pigs. The other child lives in the suburbs and has only seen different types of dogs. If both children are shown a new breed of dog that they had no prior exposure to, according to Bayes’s theorem, which child would recognize the new animal as a dog faster?

a. the child from the suburbs c. neither child would have an advantage

b. it depends on motor ability d. the child from the farm

Answer: a

Page(s) in Text: 92-93

Topic: Interpreting from the Top Down: What You Know Guides What You See

Question Type: applied, difficult

55. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ processing is determined by information from the external environment.

a. Bottom-up c. Middle-out

b. Top-down d. Network

Answer: a

Page(s) in Text: 94

Topic: In Models and Brains: The Interactive Nature of Perception

56. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ processing is guided by knowledge, beliefs, goals, and expectations.

a. Top-down c. Middle-out

b. Network d. Bottom-up

Answer: a

Page(s) in Text: 94

Topic: In Models and Brains: The Interactive Nature of Perception

57. Bottom-up and top-down processing tend to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. be processed serially c. be processed in parallel

b. be modular d. interact

Answer: d

Page(s) in Text: 94

Topic: In Models and Brains: The Interactive Nature of Perception

58. Neural evidence supports the idea that the visual perception is an interactive system since \_\_\_\_\_\_\_\_\_\_ sends more projects back to \_\_\_\_\_\_\_\_\_ than it receives.

a. V2, V1 c. V1, LGN

b. the fusiform gyrus, V2 d. inferior temporal cortex, V2

Answer: c

Page(s) in Text: 94

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: factual, difficult

59. The Necker cube is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. a size illusion c. bistable perception

b. adaptation d. figure-ground

Answer: c

Page(s) in Text: 95

Topic: In Models and Brains: The Interactive Nature of Perception

60. The face-vase illusion is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. a size illusion c. bistable perception

b. adaptation d. figure-ground

Answer: d

Page(s) in Text: 95

Topic: In Models and Brains: The Interactive Nature of Perception

61. With the face-vase illusion, it is impossible to see \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the face and vase simultaneously c. the face

b. the vase d. alternating faces and vase

Answer: a

Page(s) in Text: 95-96

Topic: In Models and Brains: The Interactive Nature of Perception

62. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is active during the spontaneous reversals of ambiguous figures.

a. posterior parietal cortex c. prefrontal cortex

b. ventral extrastriate cortex d. ventral temporal cortex

Answer: b

Page(s) in Text: 96

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: factual, difficult

63. Spatial processing relies on the \_\_\_\_\_\_\_\_ pathway.

a. occipital c. ventral

b. temporal d. dorsal

Answer: d

Page(s) in Text: 97

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: factual, difficult

64. Object recognition processing relies on the \_\_\_\_\_\_\_\_ pathway.

a. dorsal c. ventral

b. parietal d. occipital

Answer: c

Page(s) in Text: 97

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: factual, difficult

65. George had a stroke which damaged part of his temporal lobe. With which perceptual function is George most likely to experience difficulties?

a. locating objects c. bistable perception

b. binocular rivalry d. recognizing objects

Answer: d

Page(s) in Text: 97

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: applied, difficult

66. Gracie had a stroke which damaged part of her parietal lobe. With which perceptual function is Gracie most likely to experience difficulties?

a. locating objects c. bistable perception

b. binocular rivalry d. recognizing objects

Answer: a

Page(s) in Text: 97

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: applied, difficult

67. Ventral pathway :: dorsal pathway as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. location :: recognition c. competition :: adaptation

b. where :: what d. what :: where

Answer: d

Page(s) in Text: 97

Topic: In Models and Brains: The Interactive Nature of Perception

68. Apperceptive agnosia refers to the inability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. judge the form of objects c. locate objects in space

b. resolve bistable images d. know what to do with an object

Answer: a

Page(s) in Text: 98

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: factual, difficult

69. Apraxia refers to the inability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. describe objects from memory c. judge the form of objects

b. report orientation of objects d. make voluntary movements

Answer: d

Page(s) in Text: 99

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: factual, difficult

70. The Rubin face-vase illusion is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. ambiguous figure c. binocular rivalry

b. bottom-up processing d. Dutch impressionism

Answer: a

Page(s) in Text: 96

Topic: In Models and Brains: The Interactive Nature of Perception

71. You suspect that an individual, who is having difficulty describing the forms and shapes of objects, has apperceptive agnosia. You want to conduct an MRI to determine if, in fact, damage to the brain has occurred. Considering you think she has apperceptive agnosia, what part of the brain would you look at first?

a. visual cortex c. LGN

b. ventral pathway d. dorsal pathway

Answer: b

Page(s) in Text: 98

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: applied, difficult

72. Sam has difficulties making voluntary movements. You suspect that he may have apraxia. If you were able to perform an MRI on Sam, what area of the brain would you look for damage to support your suspicion?

a. visual cortex c. LGN

b. ventral pathway d. dorsal pathway

Answer:

Page(s) in Text: 99

Topic: In Models and Brains: The Interactive Nature of Perception

Question Type: applied, difficult

73. The difference between the “what” and “where” pathways provide (a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. double dissociation c. dual processing system

b. independent perceptual paths d. binocular rivalry

Answer: a

Page(s) in Text: 99

Topic: In Models and Brains: The Interactive Nature of Perception

**Short Answer**

74. Briefly describe two reasons why sensory input is often ambiguous.

Answer: (1) sensory information does not contain enough information to explain our perceptions and (2) the world has too much sensory input to include into our coherent perceptions at any single given moment

Page(s) in Text: 51

Topic: What It Means to Perceive

75. Describe two ways in which visual processing is narrowed to eliminate the problem of having too much sensory information to process at any given time.

Answer: (1) detailed processing only occurs in the fovea or at fixation and (2) selective attention

Page(s) in Text: 52

Topic: What It Means to Perceive

76. Distinguish between bottom-up and top-down processing.

Answer: Bottom-up processing is sensory driven. Top-down processing is driven by knowledge, beliefs, expectations, and goals.

Page(s) in Text: 55

Topic: How It Works: The Case of Visual Perception

77. Colinearity was described in your text as a special case of relatability. What is relatability and why is it important for grouping and perceiving contours in the world?

Answer: Relatability refers to how well contours relate to each other. The basic question in addressing relatability is how likely are two parts to be part of the same contour.

Page(s) in Text: 66-67

Topic: How It Works: The Case of Visual Perception

78. Describe the binding problem.

Answer: The binding problem focuses on how we associate different sensory and perceptual features (e.g., size, shape, color) to ultimately perceive a single object. This problem arises because we appear to process different features in different areas of the brain, indicating that these individual features must be combined at some point to form a single object.

Page(s) in Text: 69

Topic: Building from the Bottom Up: From Features to Objects

79. A current debate in visual perception is whether or not perception occurs as a result of a number of specialized subsystems or if it is the result of a single general-purpose recognition system. Present evidence that supports both sides of this debate. Which side of the debate do you favor? Explain your decision

Answer: Damage to the ventral temporal cortex is associated with difficulties in recognizing all types of objects. This suggests that recognition is a single process distributed across the brain. However, research also indicates that the fusiform gyrus is primarily responsive to faces in upright orientations and that damage to this part of the brain is associated with the inability to recognize faces. In contrast, damage to portions of the ventral temporal cortex is associated with the inability to recognize objects. The double dissociation between face and object recognition suggests that perception is specialized to particular areas of the brain indicative of the modular perspective.

Page(s) in Text: 83-84

Topic: Achieving Visual Recognition: Have I Seen You Before?

Question Type: factual, difficult

80. The physical context of a stimulus is not the only thing that can influence perception. What are some other factors that can influence how we perceive objects? Give an example.

Answer: Knowledge, beliefs, goals, and expectations also influence perception. [partial answer]

Page(s) in Text: 85-90

Topic: Interpreting from the Top Down: What You Know Guides What You See

81. Briefly explain how the feature net model of word recognition accounts for the word superiority effect.

Answer: Bottom-up processing occurs as features are processed and combined to activate different letters. Additionally, the letters are combined to activate possible words. Top-down processing occurs as the possible words are used to fill in the missing pieces of the letters.

Page(s) in Text: 90-93

Topic: Interpreting from the Top Down: What You Know Guides What You See

Question Type: factual, difficult

**Essay**

82. Describe how the visual system detects edges.

Answer: If there are light and dark surfaces next to each other forming an edge separating the surfaces, center-surround receptive fields are excited by the light surface but inhibited by the darker surface. Additionally, the center-surround receptive fields on the border between the light and dark surfaces respond differently since these receptive fields startle both the light and dark sides. On the light side, the center of these receptive fields is excited by the light and a portion of the surround is excited by the dark, producing a heightened response. Conversely, on the dark side, the center is inhibited by the dark and a portion of the surround is inhibited by the light, producing a more negative response. The resulting perception is an edge but one with Mach bands.

Page(s) in Text: 59-62

Topic: Building from the Bottom Up: From Features to Objects

83. An object that is occluded can still be recognized. Explain why we can still recognize an object that is occluded. Also describe a potential perceptual error that can arise when something is occluded.

Answer: An occluded object is perceived as a complete object because the portion of the object that is occluded is filled in by the visual system. Relatability is one factor that contributes to this completion process. However, we can sometimes perceive a stimulus inaccurately when we fill in information that is not present in reality.

Page(s) in Text: 66-69

Topic: Building from the Bottom Up: From Features to Objects

84. Differentiate between viewpoint dependence and viewpoint invariance. Speculate as to the advantages and disadvantages of each.

Answer: Viewpoint dependence refers to the different orientations or views we see objects from. Each view can produce a unique image of the object. Dealing with viewpoint dependence within a template matching account, for example, would require a tremendous number of templates corresponding to all of the objects we have seen from all the different orientations we can see them from. This tremendous number of templates would result in a cumbersome matching process. Viewpoint invariance is the opposite of viewpoint dependence and suggests that viewpoint-invariant properties are seen as part of an object regardless of the point of view. The invariant properties of geons, for instance, are useful for determining the general category of an object but are not as well suited for detecting individual differences.

Page(s) in Text: 71-81

Topic: Achieving Visual Recognition: Have I Seen You Before?

85. Four models of recognition were presented in the text. Briefly describe how each of the four models work. Choose two of the four models and provide an example of how the two models could interact together leading to the recognition of objects.

A current debate in visual perception is whether or not perception occurs as a result of a number of specialized subsystems or if it is the result of a single general-purpose recognition system. Present evidence that supports both sides of this debate. Which side of the debate do you favor? Explain your decision

Answer: Template-matching models compare objects to a standard. A match between the two results in recognition. Feature-matching models match characteristic features instead of the whole object. The recognition-by-components model combines geons to form objects. Configural models take into account the spatial relations between features and how these relations deviate from a prototype. [partial answer]

Page(s) in Text: 73-83

Topic: Achieving Visual Recognition: Have I Seen You Before?

Question Type: applied, difficult

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 2 – Quick Quiz

1. Processing part of a sensory input for additional details at the expense of others parts involves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. search c. selective attention

b. signal separation d. shifting where you are looking

2. Which set below is in the proper order for visual processing?

a. retina, optic nerve, LGN c. ganglion cells, photoreceptors, LGN

b. LGN, optic nerve, V1 d. optic nerve, striate cortex, ganglion cells

3. Where an item is located and how it might be acted upon in space is processed in the \_\_\_\_\_\_\_ pathway.

a. visual c. ventral

b. dorsal d. caudal

4. Recognition and identification of an object occurs in the \_\_\_\_\_\_\_\_ pathway.

a. visual c. ventral

b. superior d. dorsal

5. \_\_\_\_\_\_\_\_\_\_\_\_ processes are driven by sensory information while \_\_\_\_\_\_\_\_\_\_ processes are driven by knowledge, beliefs, expectations, and goals.

a. External, internal c. Top-down, bottom-up

b. Bottom-up, top-down d. Passive, active

6. Sometimes you can see a shape that is not really present because your visual system fills in parts of the shape. When this happens, we see a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. pseudo-shape c. illusory context

b. subjective illusion d. subjective contour

7. After a stroke, Steve is unable to recognize his wife’s face can but recognize her by her voice. Steve’s inability to recognize his wife’s face may be due to \_\_\_\_\_\_\_\_\_\_\_\_.

a. selective memory loss c. post-stroke syndrome

b. multi-sensory interference d. visual agnosia

8. Template-matching models :: Feature-matching models as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. part :: whole c. whole :: part

b. pattern :: corresponding d. identical :: characteristic

9. \_\_\_\_\_\_\_\_\_\_ are simple three-dimensional geometric shapes that are combined to form the objects we see.

a. Icons c. Vertices

b. Cubicles d. Geons

10. Prosopagnosia refers to the inability to recognize different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. objects c. geons

b. color d. faces

Answer Key

Chapter 2 – Quick Quiz

1. Answer: c

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Topic: What It Means to Perceive

2. Answer: a

Page(s) in Text: 53

Topic: How It Works: The Case of Visual Perception

3. Answer: b

Page(s) in Text: 53

Topic: How It Works: The Case of Visual Perception

4. Answer: c

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Topic: How It Works: The Case of Visual Perception

5. Answer: b

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Topic: How It Works: The Case of Visual Perception

6. Answer: d

Page(s) in Text: 68

Topic: Building from the Bottom Up: From Features to Objects

7. Answer: d

Page(s) in Text: 70-71

Topic: Achieving Visual Recognition: Have I Seen You Before?

8. Answer: c

Page(s) in Text: 72-73

Topic: Achieving Visual Recognition: Have I Seen You Before?

9. Answer: d

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Topic: Achieving Visual Recognition: Have I Seen You Before?

10.Answer: d

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Topic: Achieving Visual Recognition: Have I Seen You Before?

Chapter 3: Attention

Multiple Choice

1. It is widely agreed that attention involves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. previewing sensory information c. natural selection

b. subconscious control d. selecting some information for processing

Answer: d

Page(s) in Text: 104

Topic: The Nature and Roles of Attention

\*2. Selecting some information for further processing and inhibiting other information from receiving further processing are functions of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. sensory memory c. working memory

b. perception d. attention

Answer: d

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Topic: The Nature and Roles of Attention

3. You started thinking about an interesting point your professor just made in class. While you are thinking about the question, the professor continued to lecture. Later, when comparing notes with your friend in class, you noticed that you did not have as much information written down as she did. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. failure of multitasking c. failure of selection in space

b. failure of selection in time d. failure of selection in context

Answer: b

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Topic: The Nature and Roles of Attention

4. While listening to your professor, you did not notice the person next to you participating in an online fantasy football draft. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. failure of multitasking c. failure of selection in space

b. failure of selection in time d. failure of selection in context

Answer: c

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Topic: The Nature and Roles of Attention

5. You are watching a TV show with your friend. At one point in the show the camera switches back and forth between two characters. You notice that the hair of one of the actresses is different in different shots but your friend does not. This type of phenomenon is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. visual capture c. failure of selection in time

b. cinematic illusion d. change blindness

Answer: d

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Topic: The Nature and Roles of Attention

\*6. We do not attend to all the information that is available to us. Instead, we attend to information that is \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.

a. obvious, important c. meaningful, relevant

b. relevant, noticeable d. accessible, applicable

Answer: c

Page(s) in Text: 105-106

Topic: The Nature and Roles of Attention

7. People may not notice a change in a scene depicted in one picture to another. However, we are more likely to notice changes that are of “\_\_\_\_\_\_\_\_\_\_\_ interest.”

a. marginal c. sustained

b. central d. focal

Answer: b

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Topic: The Nature and Roles of Attention

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can influence how we select and process information.

a. Bottom-up processing c. Information processing

b. Middle-out processing d. Top-down processing

Answer: d

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Topic: The Nature and Roles of Attention

\*9. Concentrating on one source of information to the exclusion of other sources is referred to as \_\_\_\_\_\_\_\_\_\_\_.

a. sustained attention c. tunnel vision

b. focused attention d. dynamic attention

Answer: b

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Topic: The Nature and Roles of Attention

10. \_\_\_\_\_\_\_\_\_\_\_\_\_ is when multiple sources of information are attended to at one time.

a. Divided attention c. Focused attention

b. Diffused attention d. Spreading attention

Answer: a

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Topic: The Nature and Roles of Attention

\*11. Not being able to detect a stimulus that is presented within a particular time from after an earlier stimulus is presented is referred to as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. divided attention c. attentional blink

b. type II error d. focusing error

Answer: c

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Topic: The Nature and Roles of Attention

12. When participants are shown a stream of letters, they have difficulty indicating the presence of a probe letter if it is presented between 100 to 500 milliseconds after a target letter. This interval is referred to as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. attentional blink c. blank interval

b. no processing zone d. period of blindness

Answer: a

Page(s) in Text: 109-111

Topic: The Nature and Roles of Attention

13. In a single-task paradigm, a stream of letters is presented, including a target and a probe. Participants are required to indicate whenever they see the \_\_\_\_\_\_\_\_\_.

a. target b. pre-target letter

b. post-target letter d. probe

Answer: d

Page(s) in Text: 109-110

Topic: The Nature and Roles of Attention

14. In a dual-task paradigm, a stream of letters is presented, including a target and a probe. Participants are required to identify the \_\_\_\_\_\_\_ and indicate when they see the \_\_\_\_\_\_\_\_\_.

a. target, probe c. pre-target letter, post-target letter

b. target, post-target letter d. probe, target

Answer: a

Page(s) in Text: 109-110

Topic: The Nature and Roles of Attention

15. Attentional blink :: repetition blindness as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. letters :: pictures c. pictures :: letters

b. single task :: dual task d. words :: pictures

Answer: a

Page(s) in Text: 111

Topic: The Nature and Roles of Attention

Question Type: factual, difficult

16. In some studies dealing with processing limitations, the information that is missed tends to be at the periphery of a visual display, suggesting that the limitation is due to \_\_\_\_\_\_\_\_\_\_\_\_. However, other studies show similar processing limitations with information presented in the center of a display, suggesting that the limitation is due to the \_\_\_\_\_\_\_\_\_\_\_\_ of information that can be processed.

a. visual acuity, quality c. spreading activation, fixation point

b. spatial decay, quantity d. sensory processing, amount

Answer: d

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Topic: The Nature and Roles of Attention

\*17. In models of attention, a restriction on the amount of information that can be processed at one time is referred to as (a) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. bottleneck c. load restriction

b. tunnel vision d. processing limitation

Answer: a

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Topic: The Nature and Roles of Attention

18. You are taking notes in your cognition class. Part way through class your friend text messages you about your plans after class. You find that it is difficult to continue to take good notes in class while texting back your friend at the same time. This is an example of (a) \_\_\_\_\_\_\_\_\_\_\_.

a. response bottleneck c. divided attention

b. dual-task interference d. controlled processing

Answer: b

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Topic: The Nature and Roles of Attention

19. Interference, or decrements in performance, is detected in experiments by examining \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.

a. response time, load c. response latency, response quality

b. accuracy, response time d. misses, false alarms

Answer: b

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Topic: The Nature and Roles of Attention

Question Type: applied, difficult

20. You are carrying a package to your car in your right hand. The car is locked and your keys are in your right pocket. You hesitate while attempting to determine your next course of action. This type of slowing, or interference, is most likely due to (a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. response bottleneck c. dual-task interference

b. response options d. dexterity

Answer: a

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Topic: The Nature and Roles of Attention

21. Interference resulting from selecting between two possible responses is referred to as (a) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. dual-task interference c. response confusion

b. conflicting outputs d. response bottleneck

Answer: d

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Topic: The Nature and Roles of Attention

22. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is required to turn a controlled task into an automatic task.

a. Endogenous attention c. Proceduralization

b. Practice d. Exogenous attention

Answer: b

Page(s) in Text: 115

Topic: The Nature and Roles of Attention

\*23. Familiar and easy tasks tend to involve \_\_\_\_\_\_\_\_\_\_\_\_ processing while difficult and new tasks use \_\_\_\_\_\_\_\_\_\_\_\_\_ processing.

a. unconscious, conscious c. automatic, controlled

b. controlled, automatic d. pre-attentive, attentive

Answer: c

Page(s) in Text: 115

Topic: The Nature and Roles of Attention

24. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an attention deficit in which the impairment leads the patient to ignore information appearing on the side of space opposite the damaged side of the brain.

a. Visual agnosia c. Hemispatial neglect

b. Balint’s syndrome d. Spatial blindness disorder

Answer: c

Page(s) in Text: 116

Topic: The Nature and Roles of Attention

25. J.S. recently had a stroke which damaged the right parietal lobe. You give J.S. a line bisection task in which he must bisect a line into two equal segments. J.S. typically marks lines like this:

Based on this performance, you suspect that J.S. may have\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. motor inaccuracies c. post-stroke syndrome

b. hemispatial neglect d. a slow but normal recovery

Answer: b

Page(s) in Text: 116

Topic: The Nature and Roles of Attention

26. Your friend’s grandmother recently had a stroke. Although her memory and language skills appear normal and she is able to walk without much difficulty, your friend notices some strange behaviors. For instance, the other day she wore a shirt that was wrinkled on the left side and ironed on the right side. You ask your friend if the stroke affected blood flow to his grandmother’s \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. right occipital lobe c. right frontal lobe

b. right parietal lobe d. right temporal lobe

Answer: b

Page(s) in Text: 116

Topic: The Nature and Roles of Attention

Question Type: applied, difficult

27. Endogenous attention :: exogenous attention as \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. bottom-up :: top-down c. middle-out :: cued

b. top-down :: bottom-up d. central :: peripheral

Answer: b

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Topic: The Nature and Roles of Attention

28. During statistics class, someone drops his calculator on the floor. Your attention is drawn to the sound of the calculator hitting the floor. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. endogenous attention c. orientation

b. visual capture d. exogenous attention

Answer: d

Page(s) in Text: 115

Topic: The Nature and Roles of Attention

29. You keep looking at your history professor but you are really checking how much time is left in the class using the clock on the front wall. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. spreading attention c. covert attention

b. dual tasking d. exogenous attention

Answer: c

Page(s) in Text: 115

Topic: The Nature and Roles of Attention

\*30. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ attention is a form of attention in which top-down information drives the selection of information in the input.

a. Focused c. Selective

b. Endogenous d. Exogenous

Answer: b

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Topic: The Nature and Roles of Attention

31. Posner proposed a model of attention that included \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. moving, focusing, inhibiting c. disengaging, moving, engaging

b. detecting, filtering, selecting d. shifting, selecting, inhibiting

Answer: c

Page(s) in Text: 121

Topic: The Nature and Roles of Attention

Question Type: factual, difficult

32. Patients with damage to the midbrain and having progressive supranuclear palsy have difficulty \_\_\_\_\_\_\_\_\_\_\_\_ attention.

a. disengaging c. engaging

b. focusing d. moving

Answer: d

Page(s) in Text: 121

Topic: The Nature and Roles of Attention

Question Type: applied, difficult

33. Patients with damage to the pulvinar tend to have difficulties \_\_\_\_\_\_\_\_\_\_\_\_\_\_ attention.

a. disengaging c. engaging

b. focusing d. moving

Answer: c

Page(s) in Text: 121-122

Topic: The Nature and Roles of Attention

Question Type: applied, difficult

34. According to your authors, cross-modal research has found interactions between each sensory pair listed below except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. touch-vision c. audition-touch

b. audition-touch d. olfaction-taste

Answer: c

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Topic: The Nature and Roles of Attention

\*35. \_\_\_\_\_\_\_\_\_\_\_ occurs when a stimulus facilitates processing of a subsequent stimulus.

a. Inhibition c. Disengaging

b. Priming d. Engaging

Answer: b

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Topic: The Nature and Roles of Attention

36. Object-based attention suggests that we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. prefer objects over other stimuli c. are exogenously cued by objects

b. have limited attention d. process all features of a selected object

Answer: d

Page(s) in Text: 122-123

Topic: The Nature and Roles of Attention

37. Early selection theories of attention hold that the bottleneck in processing occurs \_\_\_\_\_\_\_\_\_\_\_.

a. prior to a brief sensory store c. after semantic processing

b. immediately after the sensory store d. at response selection

Answer: b

Page(s) in Text: 128-129

Topic: Explaining Attention: Information-Processing Theories

38. Late selection theories of attention hold that the bottleneck in processing occurs \_\_\_\_\_\_\_\_\_\_\_.

a. prior to a brief sensory store c. after semantic processing

b. immediately after the sensory store d. at response selection

Answer: c

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Topic: Explaining Attention: Information-Processing Theories

39. In a dichotic listening task, participants are required to \_\_\_\_\_\_\_\_\_ the message in the target ear while \_\_\_\_\_\_\_\_\_\_\_ the message in the unattended ear.

a. listen to, ignoring c. repeat, writing down

b. shadow, explaining d. shadow, ignoring

Answer: d

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Topic: Explaining Attention: Information-Processing Theories

40. What are participants able to notice about the message in the unattended ear of a dichotic listening task?

a. change in language c. if the message was played backwards

b. if the sex of the speaker changed d. content of the message

Answer: b

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Topic: Explaining Attention: Information-Processing Theories

41. The cocktail party effect emphasizes the importance of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. early selection c. salient information

b. processing interactions with alcohol d. semantic processing

Answer: c

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Topic: Explaining Attention: Information-Processing Theories

42. To accommodate various findings regarding late and early selection, Moray proposed that information must also \_\_\_\_\_\_\_\_\_\_\_\_\_ while Treisman suggested that different information has different \_\_\_\_\_\_\_\_\_\_\_\_\_ for additional processing.

a. pass through a filter, needs c. processed contextually, priorities

b. task dependent, time demands d. pass through a filter, thresholds

Answer: d

Page(s) in Text: 130

Topic: Explaining Attention: Information-Processing Theories

43. A problem with the spotlight theory of attention is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. identification is not enhanced close to the attentional spotlight

b. attention does not move spatially

c. an object can be preferentially selected at the same location

d. “obstacles” between spatial locations capture attention

Answer: c

Page(s) in Text: 130-131

Topic: Explaining Attention: Information-Processing Theories

44. As a competitive system, attention can be thought of in terms of \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.

a. automatic, controlled processes c. filtering, selecting

b. selection, inhibition d. priorities, selection

Answer: b

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Topic: Explaining Attention: Information-Processing Theories

45. There are seven red X’s and one blue X in a search array. This would be an example of a \_\_\_\_\_\_\_\_\_\_\_\_ search.

a. distractor c. conjunctive

b. disjunctive d. integrative

Answer: b

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Topic: Explaining Attention: Information-Processing Theories

46. A search array has three blue X’s, four red X’s, four blue O’s, and one red O. This would be an example of a \_\_\_\_\_\_\_\_\_\_\_\_\_ search.

a. feature c. conjunctive

b. disjunctive d. integrative

Answer: c

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Topic: Explaining Attention: Information-Processing Theories

47. Dichotic listening :: unattended ear as visual search :: \_\_\_\_\_\_\_\_\_\_\_\_.

a. distractor c. feature

b. illusory conjunction d. preattentive

Answer: a

Page(s) in Text: 129 and 132

Topic: Explaining Attention: Information-Processing Theories

48. An illusory conjunction is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. incorrect combination of features c. imaginary distractor

b. incorrect target d. errant disjunctive search

Answer: a

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Topic: Explaining Attention: Information-Processing Theories

49. A participant is briefly shown a search display containing red (7) and green (1) circles and red (5) squares. In addition to seeing the red circles and squares and green circle, she reports seeing a green square. This report is evidence of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
 a. hallucination c. illusory conjunction

b. color-form illusion d. feature integration error

Answer: c

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Topic: Explaining Attention: Information-Processing Theories

50. Feature integration theory divided perceptual information into separate \_\_\_\_\_\_\_\_\_\_\_\_.

a. categories c. spatial locations

b. maps d. time frames

Answer: b

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Topic: Explaining Attention: Information-Processing Theories

\*51. According to feature integration theory, you would expect a participant to take longer to perform a(n) \_\_\_\_\_\_\_\_\_\_\_\_ search than a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ search.

a. disjunctive, feature c. conjunctive, feature

b. conjunctive, conjunctive d. disjunctive, conjunctive

Answer: d

Page(s) in Text: 132-133

Topic: Explaining Attention: Information-Processing Theories

52. According to feature integration theory, you would expect a participant to take longer to search for a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ than a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. color, shape c. something present, something absent

b. distractor, target d. something stationary, something moving

Answer: c

Page(s) in Text: 132-133

Topic: Explaining Attention: Information-Processing Theories

53. Guided search is relatively efficient because it makes use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. search instructions c. prior search strategies

b. preattentive information d. multiple senses

Answer: b

Page(s) in Text: 134

Topic: Explaining Attention: Information-Processing Theories

54. Early processing in both feature integration theory and guided search relies on \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. feature maps c. disjunctive searches

b. conjunctive searches d. searching for present features

Answer: a

Page(s) in Text: 134

Topic: Explaining Attention: Information-Processing Theories

55. You are in a grocery store looking for a Coke. As you begin to walk down the soda aisle, you only look at the red cans to find your Coke. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. feature integration theory c. disjunctive search

b. early selection d. guided search

Answer: d

Page(s) in Text: 134

Topic: Explaining Attention: Information-Processing Theories

56. In an ERP study, an increase in the amplitude of the waveform found in the occipital lobe shortly after the onset of a stimulus suggests that attention \_\_\_\_\_\_\_\_\_\_\_\_\_\_ early processing of visual stimuli.

a. enhances c. occurs at the same time as

b. interferes with d. comes after

Answer: a

Page(s) in Text: 135

Topic: Looking to the Brain

57. ERP studies using visual attention tasks support a(n) \_\_\_\_\_\_\_\_\_\_\_\_ selection account of attention.

a. guided c. early

b. late d. simultaneous

Answer: c

Page(s) in Text: 135

Topic: Looking to the Brain

58. Attentional switching studies using PET suggest that the \_\_\_\_\_\_\_\_\_\_ plays the primary role in switching attention in visual search tasks.

a. basal ganglia c. anterior cingulate

b. superior parietal lobe d. thalamus

Answer: b

Page(s) in Text: 136

Topic: Looking to the Brain

Question Type: factual, difficult

59. Endogenous mechanisms of attention use more \_\_\_\_\_\_\_\_\_\_ areas of the brain while exogenous mechanisms use more \_\_\_\_\_\_\_\_\_ areas.

a. dorsal, ventral c. frontal, dorsal

b. medial, temporal d. frontal, posterior

Answer: a

Page(s) in Text: 137

Topic: Looking to the Brain

Question Type: factual, difficult

\*60. Attention is a \_\_\_\_\_\_\_\_\_ process that occurs in \_\_\_\_\_\_\_\_\_\_\_ area(s) of the brain.

a. fixed, a specialized c. competitive, dorsal

b. variable, many d. passive, temporal

Answer: b

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Topic: Competition: A Single Explanatory Framework for Attention?

Question Type: factual, difficult

61. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a general theory of attention that assumes that attention arises from the competition between inputs.

a. Selective attention c. Biased competition

b. Early selection d. Information processing

Answer: c

Page(s) in Text: 139

Topic: Competition: A Single Explanatory Framework for Attention?

62. The integrated competition theory of attention was proposed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Treisman and Gelade c. Posner

b. Cherry d. Desimone and Duncan

Answer: d

Page(s) in Text: 139

Topic: Competition: A Single Explanatory Framework for Attention?

63. ERP waveforms are \_\_\_\_\_\_\_\_\_\_ in various brain regions under conditions of competition.

a. reduced c. distributed

b. dissipated d. magnified

Answer: d

Page(s) in Text: 139

Topic: Competition: A Single Explanatory Framework for Attention?

Question Type: factual, difficult

64. You are conducting a fMRI study in which participants must select a particular target. If attention is actively involved in this task, the fMRI signal should be \_\_\_\_\_\_\_\_\_\_.

a. enhanced c. condensed

b. dissipated d. reduced

Answer: a

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Topic: Competition: A Single Explanatory Framework for Attention?

65. You are conducting a fMRI study in which participants must suppress a particular stimulus. The fMRI signal associated with the suppressed stimulus should be \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. enhanced c. dispersed

b. improved d. reduced

Answer: d

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Topic: Competition: A Single Explanatory Framework for Attention?

**Short Answer**

66. Briefly describe what a phenomenon like change blindness tells us about attention.

Answer: Change blindness shows we do not attend to and process all the information available to us.

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Topic: The Nature and Roles of Attention

67. Bisiach and Luzzatti (1978) found that hemispatial neglect also occurred for patients when they were imaging a visual scene. What does this finding indicate about attention?

Answer: Attention is important for selecting objects within a visual scene (external source) for additional processing as well as for imaging a visual scene (internal source).

Page(s) in Text: 116-117

Topic: The Nature and Roles of Attention

68. Two important functions of attention is detecting information we need and inhibiting information we do not need. What do Posner et al.’s (1980, 1982) endogenous cuing studies tell us about detection and inhibition?

Answer: Validly cued objects are processed faster while invalidly cued objects are inhibited or processed slower than uncued objects. These findings tell us that attention facilitates processing target information and inhibits processing of information that is believed to be irrelevant. Page(s) in Text: 118-119

Topic: The Nature and Roles of Attention

69. Posner and colleagues found a double dissociation between people with progressive supranuclear palsy and those with lesions to the pulvinar. How does this double dissociation support his model of attention?

Answer: Posner’s model includes disengaging attention, moving attention, and engaging attention at a new location. Patients with progressive supranuclear palsy had difficulties with moving attention while patients with lesions to the pulvinar had difficulties engaging attention. Together, these findings support the idea that attention moves and engages in processing at a particular location, thereby supporting Posner’s model.

Page(s) in Text: 121-122

Topic: The Nature and Roles of Attention

Question Type: applied, difficult

70. Selective attention is necessary to reduce the amount of information coming in from the external world. However, selective attention is also a consequence of basic information processing limitations. In particular, what limitation necessitates selective attention?

Answer: Information processing can be limited by channel capacity. Channel capacity, in turn, limits the flow or amount of information than be processed. Therefore, selective attention is necessary to reduce the amount of incoming information to fit the size of the processing channel.

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Topic: Explaining Attention: Information-Processing Theories

71. According to feature integration theory, why does it take longer to perform a conjunctive search than a disjunctive search?

Answer: Feature integration theory incorporates a number of feature maps that also contain information about the location at which a feature is present. When doing a disjunctive search for a red target, for example, the participant only needs the information from the color map. However, a conjunctive search for a red square, for instance, requires information from the color map and the shape map. Acquiring information from two maps takes more time than obtaining information from only one map. Therefore, conjunctive searches take more time than disjunctive searches.

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Topic: Explaining Attention: Information-Processing Theories

72. Differentiate between feature integration theory and guided search.

Answer: Both feature integration theory (FIT) and guided search divide the perceptual system into separate feature maps. The feature information stored in these maps is location specific. According to feature integration theory, disjunctive searches isolate feature information in the appropriate feature map while conjunctive searches combine features from multiple maps for a particular location. The main difference between FIT and guided search is that guided search occurs in two stages. In the first stage, preattentive information is obtained and is used to rule out objects that cannot be targets. This information is then used to guide later serial searches.

Page(s) in Text: 132-134

Topic: Explaining Attention: Information-Processing Theories

73. Several methodological approaches were presented for the study of attention. Briefly describe three of these approaches and state what type of information each approach contributes to our understanding of attentional processing.

Answer: Behavioral studies (e.g., visual search) typically use RTs to make inferences about how attentional processing takes place. ERP studies measure changes in electrical activity in response to a stimulus providing information about the temporal nature of attention (i.e., when it takes place). PET and fMRI studies measure blood flow or metabolism to determine which regions of the brain are active in processing information (i.e., where it takes place). TMS studies of attention use a magnetic field to render a set of neurons inactive for a brief period of time. These studies are somewhat similar to lesion studies without the long-term consequences.

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Topic: Looking to the Brain

**Essay**

74. Compare and contrast a task used to produce an attentional blink and one used for repetition blindness. What do the findings from these tasks tell us about the attentional selection of information time?

Answer: To demonstrate attentional blink, a stream of letters is presented including a target letter and probe letter. The time between the presentation of the target and probe letters can be manipulated. In the single-task version, the participant is required to indicate when the probe is presented within the stream. Performance is generally accurate on this task. However, in the dual-task version, the participant is required to identify the target and indicate when the probe is presented. Detection of the probe is compromised when the probe occurs between 100 to 500 milliseconds after the target. This finding suggests that attention to one stimulus precludes attending to a second stimulus when they occur within a short period of time from one another. To demonstrate repetition blindness, a picture is repeated within a stream. The second occurrence of the picture is not noticed if the pictures are close together in time. This finding shows that when we do not have much time, we do not form a second representation of a stimulus we have just processed.

Page(s) in Text: 109-112

Topic: The Nature and Roles of Attention

75. Your text authors summarize a study conducted by Cate and Behrmann (2002) in which letters were presented briefly on the left and right side of a computer screen. The letters on the left were presented alone, followed a letter presented on the right, or preceded a letter presented on the right. The amount of time between left and right presentations was manipulated. Participants were asked to identify the letters presented on the left side (their neglected side). Briefly state the key points from this study. What implications do these findings have for spatial and temporal attention?

Answer: Cate and Behrmann (2002) make two important points in their study. First, a letter presented on the left can survive neglect if it is presented alone (i.e., not right competitors). Second, if a letter is presented on the left and right, identification of the letter on the left is reduced unless a sufficient amount of time passes (at least 300 msec) between when the letter appears on the right and when the letter appears on the left. Together, these findings show that spatial and temporal attentional mechanisms interact to determine the amount of neglect that occurs.

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Topic: The Nature and Roles of Attention

76. What is object-based attention? Describe the findings from patients with brain damage that support this position.

Answer: Our environment contains a host of objects that we must interact with. These objects can capture our attention. When our attention is focused on an object, all parts of the object are processed. This phenomenon is known as object-based attention. The idea of object-based attention is supported by behavioral and neuroimaging studies as well as findings from brain- damaged patients. For instance, patients with hemispatial neglect from a right hemisphere lesion are good at detecting object on the right side of space but poor at detecting objects on the left side of space.

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Topic: The Nature and Roles of Attention

77. According to the biased competition theory of attention proposed by Desimone and Duncan (1995), attention is an emergent property. Explain what this means.

Answer: Attention is not a single process or confined to one area of the brain. Instead, attention arises from the competition created from multiple sources of inputs. As a result, attention occurs across a variety of brain areas and inputs or information are selected via a variety of mechanisms (e.g., early selection, late selection, top-down, and bottom-up). Thus, attention arises from the integrated processing of competing pieces of information.

Page(s) in Text: 139-140

Topic: Competition: A Single Explanatory Framework for Attention?

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 3 – Quick Quiz

1. Selecting some information for further processing and inhibiting other information from receiving further processing are functions of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. sensory memory c. working memory

b. perception d. attention

2. We do not attend to all the information that is available to us. Instead, we attend to information that is \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.

a. obvious, important c. meaningful, relevant

b. relevant, noticeable d. accessible, applicable

3. Concentrating on one source of information to the exclusion of other sources is referred to as \_\_\_\_\_\_\_\_\_\_\_.

a. sustained attention c. tunnel vision

b. focused attention d. dynamic attention

4. Not being able to detect a stimulus that is presented within a particular time from after an earlier stimulus is presented is referred to as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. divided attention c. attentional blink

b. type II error d. focusing error

5. In models of attention, a restriction on the amount of information that can be processed at one time is referred to as (a) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. bottleneck c. load restriction

b. tunnel vision d. processing limitation

6. Familiar and easy tasks tend to involve \_\_\_\_\_\_\_\_\_\_\_\_ processing while difficult and new tasks use \_\_\_\_\_\_\_\_\_\_\_\_\_ processing.

a. unconscious, conscious c. automatic, controlled

b. controlled, automatic d. pre-attentive, attentive

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ attention is a form of attention in which top-down information drives the selection of information in the input.

a. Focused c. Selective

b. Endogenous d. Exogenous

8. \_\_\_\_\_\_\_\_\_\_\_ occurs when a stimulus facilitates processing of a subsequent stimulus.

a. Inhibition c. Disengaging

b. Priming d. Engaging

9. According to feature integration theory, you would expect a participant to take longer to perform a(n) \_\_\_\_\_\_\_\_\_\_\_\_ search than a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ search.

a. disjunctive, feature c. conjunctive, feature

b. conjunctive, conjunctive d. disjunctive, conjunctive

10. Attention is a \_\_\_\_\_\_\_\_\_ process that occurs in \_\_\_\_\_\_\_\_\_\_\_ area(s) of the brain.

a. fixed, a specialized c. competitive, dorsal

b. variable, many d. passive, temporal

Answer Key

Chapter 3 – Quick Quiz

Answer: d

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Topic: The Nature and Roles of Attention

Answer: c

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Topic: The Nature and Roles of Attention

Answer: b

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Topic: The Nature and Roles of Attention

Answer: c

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Topic: The Nature and Roles of Attention

5. Answer: a

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Topic: The Nature and Roles of Attention

6. Answer: c

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Topic: The Nature and Roles of Attention

7. Answer: b

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Topic: The Nature and Roles of Attention

8. Answer: b

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Topic: The Nature and Roles of Attention

9. Answer: d

Page(s) in Text: 132-133

Topic: Explaining Attention: Information-Processing Theories

10. Answer: b

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Topic: Competition: A Single Explanatory Framework for Attention?

Question Type: factual, difficult

Chapter 4: Representation and Knowledge in Long-Term Memory

**Multiple Choice**

1. Information about the world that is stored in memory is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. learning c. knowledge

b. understanding d. experience

Answer: c

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Topic: Roles of Knowledge in Cognition

2. According to the authors of your text, \_\_\_\_\_\_\_\_\_\_\_\_ is necessary for the effectiveness of any mental process.

a. knowledge c. perception

b. attention d. experience

Answer: a

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Topic: Roles of Knowledge in Cognition

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the ability to establish that a perceived entity belongs to a particular group of things that share key characteristics.

a. Categorization c. Grouping

b. Perception d. Familiarization

Answer: a

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Topic: Roles of Knowledge in Cognition

4. You decide to organize all of your DVDs by genre. What ability will you use to accomplish this task?

a. grouping c. familiarization

b. categorization d. experience

Answer: b

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Topic: Roles of Knowledge in Cognition

5. \_\_\_\_\_\_\_\_\_\_\_\_ allow you to derive information not explicitly present in a single member of a category but available because of your knowledge about the group.

a. Deductions c. Inferences

b. Assumptions d. Conjectures

Answer: c

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Topic: Roles of Knowledge in Cognition

6. Knowledge affects all of the following except \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. action c. perception

b. language d. development

Answer: d

Page(s) in Text: 149-151

Topic: Roles of Knowledge in Cognition

\*7. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a physical state that stands for an object, event, or concept.

a. category c. memory

b. representation d. neural network

Answer: b

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8. The intentionality criterion for a representation states that a representation must be constructed intentionally to stand for something else. This criterion \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. is a controlled process c. requires conscious effort

b. is inherent in our brain system d. is based on prior knowledge

Answer: b

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Topic: Representations and Their Formats

9. A representation must be constructed intentionally to stand for something else and must \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ what it stands for.

a. represent c. explain

b. carry information about d. accurately reflect

Answer: b

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\*10. A format for a representation refers to all of the following except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. how elements are arranged c. processes for extracting information

b. type of code d. neural structure

Answer: d

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11. Representations can be modality specific, meaning that they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. are situation specific c. rely on the most common occurrences

b. use perceptual or motor systems d. cannot be generalized

Answer: b

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12. The element of an image representing a particular location of a visual scene at a single point of time is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. storage unit c. spatiotemporal window

b. space-time unit d. stored information

Answer: c

Page(s) in Text: 153-154

13. Neurons in the visual cortex respond in such a way that they preserve a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; that is, the spatial layout in the brain represents the spatial layout in the environment.

a. modality correspondence c. spatiotemporal window

b. topographical map d. bottom-up representation

Answer: b

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14. Visual images are represented in the \_\_\_\_\_\_\_\_\_\_\_ lobe.

a. frontal c. parietal

b. occipital d. temporal

Answer: b

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15. Mental images have been found in the \_\_\_\_\_\_\_\_\_\_\_ system.

a. olfactory c. sensory

b. motor d. emotion

Answer: b

Page(s) in Text: 156

16. Pictures provide a complete image of scene but the brain seems to hold images that are not as accurate as pictures. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is probably the reason for this difference.

a. Prior knowledge c. Spatial resolution

b. Change blindness d. Visual attention

Answer: d

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\*17. Kosslyn (1975) found that the \_\_\_\_\_\_\_\_\_\_\_\_ of a mental image influenced how quickly it was processed.

a. category c. modality

b. level of detail d. relative size

Answer: d

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Question Type: factual, difficult

18. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_is an object or event that plays an important role in an organism’s survival and pursuit of goals.

a. memory entity c. storage unit

b. episodic memory d. experience

Answer: a

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\*19. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a meaningful sensory aspect of a perceived stimulus.

a. aspect c. feature

b. quality d. characteristic

Answer: c

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20. Neurons that combine information such as color and shape are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. mirror neurons c. conjunctive neurons

b. feature neurons d. perceptual neurons

Answer: c

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21. Representations from feature records \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ images.

a. compete against c. replace

b. complement d. are identical to

Answer: b

Page(s) in Text: 162

22. Modality-specific : amodal :: perceptually-related : \_\_\_\_\_\_\_\_\_\_\_.

a. motor-related c. multiple modalities

b. frequently occurring d. abstract

Answer: d

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23. Which of the following is not an example of an amodal representation?

a. neural net c. frame

b. property list d. semantic network

Answer: a

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24. A neural net is a representation based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. actual neural pathways c. statistical patterns

b. spreading activation d. neural interactions

Answer: c

Page(s) in Text: 165-166

25. Category knowledge develops from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of representations of individual members of the category.

a. integration c. patterns

b. quality d. types

Answer: a

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Topic: From Representations to Category Knowledge

26. Individual members become associated with a category because they \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. have the same image c. have identical features

b. share a statistical pattern d. share storage units

Answer: b

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Topic: From Representations to Category Knowledge

27. The average category member generated through simulation can also be referred to as a(n) \_\_\_\_\_\_\_\_\_\_\_\_.

a. prototype c. archetype

b. model d. mean member

Answer: a

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Topic: From Representations to Category Knowledge

Question Type: factual, difficult

28. Category knowledge is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. greater than sensory information c. limited to immediate sensory information

b. perceptually driven d. not appropriate as a basis for inferences

Answer: a

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Topic: From Representations to Category Knowledge

29. A population of conjunctive neurons that associate feature information within a given modality is known as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. neural net c. primary sensory cortex

b. association area d. secondary sensory cortex

Answer: a

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Topic: From Representations to Category Knowledge

30. Information \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is integrated in the convergence zone.

a. across modalities c. about actions

b. about prior experiences d. within a modality

Answer: d

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Topic: From Representations to Category Knowledge

\*31. Convergence zones integrate information \_\_\_\_\_\_\_\_\_\_\_\_\_ while higher order convergence zones integrate information \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. about vision, about other senses

b. within modalities, across modalities

c. across modalities, within modalities

d. bottom-up, top-down

Answer: b

Page(s) in Text: 170-171

Topic: From Representations to Category Knowledge

32. When you think about a family camping trip, you remember the cool night air, yellow glow and warmth of the fire, and the taste of roasted marshmallows. These sensations were originally integrated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. in the frontal lobe c. in an association area

b. based on common features d. in a higher order convergence zone

Answer: d

Page(s) in Text: 170-171

Topic: From Representations to Category Knowledge

33. You are driving to your roommate’s house. Not only have you not visited her house before, you have never driven in her hometown before. Listening to your roommate give you directions and looking for the street names she is saying requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. vigilance c. modality switching

b. sustained attention d. convergent processing

Answer: c

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Topic: From Representations to Category Knowledge

34. \_\_\_\_\_\_\_\_\_\_\_\_ found costs associated with switching between modalities in a perception task while \_\_\_\_\_\_\_\_\_\_\_\_ found similar switching costs in a property verification task.

a. Spence, Pecher c. Martin, Damasio

b. Damasio, Spence d. Pecher, Martin

Answer: a

Page(s) in Text: 171-172

Topic: From Representations to Category Knowledge

Question Type: factual, difficult

35. fMRI research has shown that the \_\_\_\_\_\_\_\_\_\_\_ system is activated when participants are shown manipulable objects even though they cannot touch or use them in the study.

a. association c. motor

b. decision-making d. convergent

Answer: c

Page(s) in Text: 172-173

Topic: From Representations to Category Knowledge

36. You are conducting a PET study. You ask the participant to describe his first car. What area of the brain will be most active when he describes the color of his car?

a. MT c. visual association area

b. inferior temporal cortex d. V4

Answer: d

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Topic: From Representations to Category Knowledge

Question Type: applied, difficult

\*37. Individual members of a category are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. prototypes c. member units

b. schemata d. exemplars

Answer: d

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38. A(n) \_\_\_\_\_\_\_\_\_ is a precise definition of the criteria for a category.

a. prototype c. exemplar

b. rule d. operational definition

Answer: b

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39. A tool is a saw if it has a toothed metal blade or disk that can be used to manually or mechanically cut hard material. This is an example of a \_\_\_\_\_\_\_\_\_\_\_\_.

a. prototype c. rule

b. exemplar d. operational definition

Answer: c

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40. The visual areas of the brain represent the \_\_\_\_\_\_\_\_\_\_ of exemplars and the motor areas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the process of rehearsing rules.

a. convergence, enhance c. content, implement

b. rules, activate d. qualities, facilitate

Answer: c

Page(s) in Text: 177

\*41. A(n) \_\_\_\_\_\_\_\_\_\_\_\_ specifies what properties are most likely to be true of a category.

a. exemplar c. rule

b. prototype d. schemata

Answer: b

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Topic: From Structures in Category Knowledge

42. Within a typicality gradient, a bear would be a(n) \_\_\_\_\_\_\_\_\_\_\_ and a dolphin would be a(n) \_\_\_\_\_\_\_\_\_\_\_\_ member of the category for mammals.

a. general, specific c. exemplar, exception

b. typical, atypical d. positive-match, negative-match

Answer: b

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43. When updating a rule or prototype, newly perceived properties \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. activate background knowledge c. are simply added to the existing information

b. are isolated d. take the place of existing information

Answer: a

Page(s) in Text: 179-180

44. \_\_\_\_\_\_\_\_\_\_\_\_ are structured representations that capture the information that typically applies to certain situations or events.

a. Schemata c. Prototypes

b. Exemplars d. Rules

Answer: a

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45. Schemata are used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Rules and prototypes are used for \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. knowledge, categorizing c. inferences, decisions

b. understanding, categorizing d. memory, learning

Answer: b

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46. Playing games like Pictionary oftentimes require that you draw (or describe) different characteristics of an object, person, etc., in order for your partner to guess the correct answer. Games such as these are good examples of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. typicality gradients c. category flexibility

b. fuzzy boundaries d. dynamic representation

Answer: d

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47. Which of the following would not be an ontological type?

a. Vulcan literature c. fugues

b. constellations d. NASCAR drivers

Answer: a

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Topic: Category Domains and Organization

\*48. Categories are universal if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. they have the same exemplars c. they are identical for everyone

b. statistical patterns are invariant d. they are present across cultures

Answer: d

Page(s) in Text: 182

Topic: Category Domains and Organization

49. As categories become more specific, they are \_\_\_\_\_\_\_\_ likely to be universal.

a. more c. less

b. equally d. very

Answer: c

Page(s) in Text: 182

Topic: Category Domains and Organization

\*50. In terms of categories, brain lesions result in deficits to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. specific categories c. all categories

b. categories sharing similar properties d. ontological categories

Answer: b

Page(s) in Text: 183-184

Topic: Category Domains and Organization

Question Type: factual, difficult

51. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a set of nested categories that vary in abstraction with each nested subset being a subset of its higher order category.

a. ontological type c. schema

b. taxonomy d. typicality gradient

Answer: b

Page(s) in Text: 183-184

Topic: Category Domains and Organization

**Short Answer**

52. Images are examples of one possible representational format. Briefly describe the three elements of an image.

Answer: The three elements of an image are spatiotemporal window, storage units, and stored information. Images are bound to a specific location in space and time. The spatiotemporal window refers to these constraints. Storage units contain information about a specific area of the larger spatiotemporal window. They collect information from the various storage units to make up the content of the image.

Page(s) in Text: 153-155

53. Feature detection occurs as the result of the responding of populations of neurons instead of single neurons. What is a benefit of relying on a population of neurons instead of a single neuron?

Answer: Two benefits of using populations of neurons presented in the text are (1) a population of neurons allows for a graded response instead of an all-or-none response, and (2) neurons are sensitive to more than one feature.

Page(s) in Text: 162

54. State two reasons why neural nets have a greater scope than amodal systems.

Answer: First, statistical patterns can be viewed as neurons or as populations of neurons. Second, an amodal symbol typically represents one category but multiple patterns of a neural net can represent the same category.

Page(s) in Text: 165-166

55. Using a visual scene as an illustration, highlight the three types of representations. Be sure to include information regarding when each type of representation is formed. Also include the general brain area (i.e., the lobes) in which the representations are formed.

Answer: Examples will vary. However, an initial visual image is formed in the occipital lobe. Feature detection extracts meaningful features (occipital, temporal, and parietal lobes). Statistical patterns in the temporal lobe become active through conjunctive neurons which link back to the image and feature representations to form a multilevel representation of a scene. Page(s) in Text: 166-167

56. Describe the role of bottom-up and top-down processing in developing statistical patterns and using simulation.

Answer: Bottom-up processing of sensory information leads to statistical patterns representations. These representations can later be used in a simulation process to generate mental images and remember past events. Simulation is a top-down process.

Page(s) in Text: 166

57. Provide an example describing how a golden retriever, bassett hound, and sheep dog become members of dog category knowledge.

Answer: Some students may attempt to answer this question by highlighting similar features. However, more space is devoted in the text to statistical patterns. If students answer this way, they should note that each type of dog shares part of the same statistical pattern. The shared pattern links these individual members into the dog category.

Page(s) in Text: 168

Topic: From Representations to Category Knowledge

58. What is the distinction between a convergence zone and a higher order convergence zone?

Answer: Convergence zones integrate information within a modality while higher order convergence zones integrate information across modalities.

Page(s) in Text: 170-171

Topic: From Representations to Category Knowledge

59. Briefly describe how exemplar memory can impact categorizing objects using rules.

Answer: When exemplars are activated they influence how information is categorized. For instance, Allen and Brooks (1991) found that positive-match exemplars were correctly categorized 81 percent of the time but that negative-match exemplars were correctly categorized only 56 percent of the time.

Page(s) in Text: 175-176

**Essay**

60. Your text authors claim that knowledge plays an important role in all cognitive processing. Provide examples supporting this claim using three different cognitive processes.

Answer: Knowledge about characteristics of a group helps us categorize information. Once we know information about a category we can make inferences about objects, events, etc. Knowledge of different contexts and past events influences our actions. Knowledge of what to expect can also influence our perceptions as well as direct our attention. Knowledge of words, syntax, and connotation allows us to understand language. Knowledge impacts our decision making, planning, problem solving, and reasoning.

Page(s) in Text: 149-151

Topic: Roles of Knowledge in Cognition

61. The analogy of digital pictures was used in the text to describe mental images. Examine this analogy. In what ways are digital pictures like mental images and in what ways are they different?

Answer: A picture depicts one location within the environment. This is analogous to the spatiotemporal window of an image. The pixels of a digital image are analogous to the storage units of an image. The collection of these storage units produces the subject of the picture or the content of an image. Perhaps the biggest difference between a digital picture and a mental image is that a picture “evenly” represents the visual scene while an image is often “uneven”. This is likely due to visual attention selecting some aspects of a visual scene over others.

Page(s) in Text: 153-160

62. Research has shown that similar areas of the brain are used to process sensory information during perception and in simulating category representations. What implication(s) does this finding have on our understanding of category knowledge?

Answer: This finding suggests that processing of a physical stimulus and its corresponding representation are related. Representations are not developed and stored in a specific area of the brain. Instead, representation processing is distributed across the brain using similar perceptual and motor systems.

Page(s) in Text: 173-174

Topic: From Representations to Category Knowledge

63. What is a typicality gradient? What are the effects of typicality gradients on how we process categories?

Answer: If a category has a prototype, the prototype represents what is most likely true for the category (e.g., a robin). Individual members of the category will vary from the prototype (e.g., chicken). The degree to which the category members are similar or vary from the prototype creates a typicality gradient. Behavioral research has shown that we learn faster, categorize faster, and make stronger inferences if an item is closer to the prototype.

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Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 4 – Quick Quiz

1. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a physical state that stands for an object, event, or concept.

a. category c. memory

b. representation d. neural network

2. A format for a representation refers to all of the following except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. how elements are arranged c. processes for extracting information

b. type of code d. neural structure

3. Kosslyn (1975) found that the \_\_\_\_\_\_\_\_\_\_\_\_ of a mental image influenced how quickly it was processed.

a. category c. modality

b. level of detail d. relative size

4. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a meaningful sensory aspect of a perceived stimulus.

a. aspect c. feature

b. quality d. characteristic

5. The average category member generated through simulation can also be referred to as a(n) \_\_\_\_\_\_\_\_\_\_\_\_.

a. prototype c. archetype

b. model d. mean member

6. Convergence zones integrate information \_\_\_\_\_\_\_\_\_\_\_\_\_ while higher order convergence zones integrate information \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. about vision, about other senses

b. within modalities, across modalities

c. across modalities, within modalities

d. bottom-up, top-down

7. Individual members of a category are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. prototypes c. member units

b. schemata d. exemplars

8. A(n) \_\_\_\_\_\_\_\_\_\_\_\_ specifies what properties are most likely to be true of a category.

a. exemplar c. rule

b. prototype d. schemata

9. Categories are universal if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. they have the same exemplars c. they are identical for everyone

b. statistical patterns are invariant d. they are present across cultures

10. In terms of categories, brain lesions result in deficits to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. specific categories c. all categories

b. categories sharing similar properties d. ontological categories

Answer Key

Chapter 4 – Quick Quiz

1. Answer: b

Page(s) in Text: 152

2. Answer: d

Page(s) in Text: 153

3. Answer: d

Page(s) in Text: 159

Question Type: factual, difficult

4. Answer: c

Page(s) in Text: 162

5. Answer: a

Page(s) in Text: 168

Topic: From Representations to Category Knowledge

Question Type: factual, difficult

6. Answer: b

Page(s) in Text: 170-171

Topic: From Representations to Category Knowledge

7. Answer: d

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8. Answer: b

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9. Answer: d

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Topic: Category Domains and Organization

10. Answer: b

Page(s) in Text: 183-184

Topic: Category Domains and Organization

Question Type: factual, difficult

Chapter 5: Encoding and Retrieval from Long-Term Memory

**Multiple Choice**

1. Memory relies on all of the following except \_\_\_\_\_\_\_\_\_\_\_\_.

a. encoding c. deciding

b. retrieving d. consolidating

Answer: c

Page(s) in Text: 193

Topic: The Nature of Long-Term Memory

2. Declarative : nondeclarative :: explicit : \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. implicit c. semantic

b. procedural d. episodic

Answer: a

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

\*3. Remembering your birth date and the hospital you were born in requires \_\_\_\_\_\_\_\_\_\_\_ memory.

a. semantic c. episodic

b. procedural d. associative

Answer: a

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

4. Remembering what happened at your last birthday party requires \_\_\_\_\_\_\_\_\_\_\_ memory.

a. semantic c. procedural

b. episodic d. associative

Answer: b

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ memory is memory for facts and \_\_\_\_\_\_\_\_\_\_\_\_\_ memory is memory for events.

a. Episodic, semantic c. Semantic, episodic

b. Procedural, biographic d. Semantic, biographic

Answer: c

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

6. Memory tests that require you to describe knowledge from memory are known as \_\_\_\_\_\_\_\_\_\_ memory tests.

a. semantic c. episodic

b. procedural d. explicit

Answer: d

Page(s) in Text: 195

Topic: The Nature of Long-Term Memory

\*7. Long-term memory can be divided into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ memory.

a. semantic, procedural c. episodic, associative

b. explicit, implicit d. declarative, explicit

Answer: b

Page(s) in Text: 194-195

Topic: The Nature of Long-Term Memory

8. Nonconscious forms of long-term memory that are expressed as a change in behavior without conscious recollection make up \_\_\_\_\_\_\_\_\_\_\_\_\_ memory.

a. procedural c. episodic

b. implicit d. associative

Answer: b

Page(s) in Text: 195

Topic: The Nature of Long-Term Memory

\*9. Memory tests examining changes in performance are referred to as \_\_\_\_\_\_\_\_\_\_ memory tests.

a. procedural c. explicit

b. implicit d. associative

Answer: b

Page(s) in Text: 195

Topic: The Nature of Long-Term Memory

10. Structures in the medial temporal lobes are involved in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ memory.

a. semantic c. episodic

b. implicit d. explicit

Answer: d

Page(s) in Text: 195

Topic: The Nature of Long-Term Memory

11. Priming is associated with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. amygdala c. striatum

b. cortex d. cerebellum

Answer: b

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

12. Memory for skills and habits are associated with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. amygdala c. striatum

b. cortex d. cerebellum

Answer: c

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

13. Classically conditioned emotional responses are associated with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. cortex c. cerebellum

b. amygdala d. reflex pathways

Answer: b

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

14. Classically conditioned musculature responses are associated with the \_\_\_\_\_\_\_\_\_\_\_\_.

a. striatum c. amygdala

b. cerebellum d. reflex pathways

Answer: b

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

15. Habituation and sensitization are associated with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. cerebellum c. striatum

b. reflex pathways d. amygdala

Answer: b

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

\*16. H.M. could not remember \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. items for a short period of time c. events from his childhood

b. skills and procedures d. new information

Answer: d

Page(s) in Text: 197

Topic: The Nature of Long-Term Memory

17. H.M. had his \_\_\_\_\_\_\_\_\_\_\_\_\_ removed to control epileptic seizures.

a. cerebellum c. corpus callosum

b. amygdala d. medial temporal lobe

Answer: d

Page(s) in Text: 195-197

Topic: The Nature of Long-Term Memory

18. The medial temporal cortex includes all of the following structures except the\_\_\_\_\_\_\_\_\_\_\_\_.

a. dentine gyrus c. hippocampus

b. entorhinal cortex d. amygdala

Answer: a

Page(s) in Text: 195-197

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

19. After a stroke, Henry can remember things from his past but is unable to remember new information. Henry has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. episodic amnesia c. anterograde amnesia

b. retrograde amnesia d. semantic amnesia

Answer: c

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Topic: The Nature of Long-Term Memory

20. James suffered brain damage due to carbon monoxide poisoning. He is now unable to remember events from his past. James is experiencing \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. forgetfulness c. retrograde amnesia

b. early onset dementia d. anterograde amnesia

Answer: c

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Topic: The Nature of Long-Term Memory

21. A word stem task is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. priming c. associative memory

b. implicit memory d. vocabulary

Answer: b

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Topic: The Nature of Long-Term Memory

22. Amnesic patients complete a word stem task as well as control subjects when instructed to use \_\_\_\_\_\_\_\_\_\_\_\_\_ but show impairment when instructed to use \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. common words, abstract words

b. words related to skills, any words

c. memory of recent events, memory of past events

d. the first word that comes to mind, words seen before

Answer: d

Page(s) in Text: 201

Topic: The Nature of Long-Term Memory

23. H.M.’s performance on the mirror tracing task improved over attempts but he \_\_\_\_\_\_\_\_\_\_\_\_.

a. had no memory of doing the task

b. performed worse than controls

c. quickly forgot how to do it

d. required additional help to do so

Answer: a

Page(s) in Text: 199-200

Topic: The Nature of Long-Term Memory

24. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the term used for the various processes by which information is transformed into a memory representation.

a. Elaboration c. Encoding

b. Retrieval d. Consolidation

Answer: c

Page(s) in Text: 202

Topic: Encoding: How Episodic Memories Are Formed

\*25. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involves interpreting information and connecting it with other information.

a. Elaboration c. Encoding

b. Consolidation d. Retrieval

Answer: b

Page(s) in Text: 202

Topic: Encoding: How Episodic Memories Are Formed

26. Cramming the night before an exam is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. elaboration c. distributed practice

b. massed practice d. consolidation

Answer: b

Page(s) in Text: 209

Topic: Encoding: How Episodic Memories Are Formed

27. Studying for cognition one hour per day each day of the week is an example of \_\_\_\_\_\_\_\_\_\_\_.

a. distributed practice c. massed practice

b. elaboration d. consolidation

Answer: a

Page(s) in Text: 202

Topic: Encoding: How Episodic Memories Are Formed

28. Your professor shows a complicated diagram on the board while lecturing. You find yourself looking at the details of the diagram while trying to follow what your professor is saying. Your encoding of this information may be somewhat weak due to \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. divided attention c. cross-modal interference

b. visual capture d. competing schemata

Answer: a

Page(s) in Text: 202

Topic: Encoding: How Episodic Memories Are Formed

29. You have to learn a list of words. You decide to count the number of letters in each word to help learn the list. You have decided to use a \_\_\_\_\_\_\_\_\_\_\_\_ level of processing.

a. phonological c. semantic

b. structural d. purposeful

Answer: b

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Topic: Encoding: How Episodic Memories Are Formed

30. You have a list of words to learn. You practice the list by stating each word along with a word that rhymes with it. This is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_ level-of-processing.

a. structural c. acoustic

b. semantic d. phonological

Answer: d

Page(s) in Text: 204

Topic: Encoding: How Episodic Memories Are Formed

\*31. To help learn the keywords for this chapter in your text, you use each word in a sentence. This is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ level-of-processing.

a. structural c. acoustic

b. semantic d. phonological

Answer: b

Page(s) in Text: 204

Topic: Encoding: How Episodic Memories Are Formed

32. Learning that occurs not as a result of a purposeful attempt but as a by-product of performing a task is \_\_\_\_\_\_\_\_\_\_\_ learning.

a. implicit c. associative

b. accidental d. incidental

Answer: d

Page(s) in Text: 204

Topic: Encoding: How Episodic Memories Are Formed

33. You have a professor who likes to use matching items on tests. You practice the keywords by using flashcards. You should do well on the test due to \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. retrieval specificity principle c. transfer appropriate processing

b. state dependent learning d. incidental learning

Answer: c

Page(s) in Text: 205

Topic: Encoding: How Episodic Memories Are Formed

34. The ability to remember a stimulus depends on the similarity between the way the stimulus is processed at encoding and the way it is processed at test is referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. encoding specificity principle c. transfer appropriate learning

b. incidental learning d. intentional learning

Answer: a

Page(s) in Text: 205

Topic: Encoding: How Episodic Memories Are Formed

35. Processing at encoding is most effective to the extent that processing overlaps with the processing to be performed at retrieval is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. encoding specificity principle c. transfer appropriate learning

b. incidental learning d. intentional learning

Answer: c

Page(s) in Text: 205

Topic: Encoding: How Episodic Memories Are Formed

\*36. A key difference between incidental and intentional learning is the degree to which information is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. distributed c. massed

b. generated d. elaborated

Answer: d

Page(s) in Text: 207-208

Topic: Encoding: How Episodic Memories Are Formed

37. The left frontal lobe is implicated in the learning of \_\_\_\_\_\_\_\_\_\_\_\_.

a. tools c. pictures

b. faces d. words

Answer: d

Page(s) in Text: 207-208

Topic: Encoding: How Episodic Memories Are Formed

38. The \_\_\_\_\_\_\_\_\_\_\_\_\_ suggests that you will do better on an exam when you are actively involved in taking notes during class and putting the lectures into your own words than on a test for which you were given the instructor’s PowerPoint presentations.

a. encoding specificity principle c. spacing effect

b. generation effect d. engaged learning principle

Answer: b

Page(s) in Text: 209

Topic: Encoding: How Episodic Memories Are Formed

\*39. The superiority of distributed practice over massed practice is known as the \_\_\_\_\_\_\_\_\_\_\_\_.

a. intentional learning principle c. spacing effect

b. massed learning effect d. generation effect

Answer: c

Page(s) in Text: 209-210

Topic: Encoding: How Episodic Memories Are Formed

\*40. Binding of related pieces of information for long-term memory takes place in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frontal lobe c. hippocampus

b. association cortex d. thalamus

Answer: c

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Topic: Encoding: How Episodic Memories Are Formed

41. The medial temporal lobe retrieves \_\_\_\_\_\_\_\_\_\_\_\_\_\_ memories while consolidated memories are retrieved in more \_\_\_\_\_\_\_\_\_\_ cortical regions.

a. consolidated, medial c. unconsolidated, medial

b. unconsolidated, lateral d. consolidated, lateral

Answer: b

Page(s) in Text: 214

Topic: Encoding: How Episodic Memories Are Formed

42. What is a potential benefit of episodic memory being a conjunction of linked features?

a. less complex memories c. speeded integration

b. multiple points of access d. requires less attention

Answer: b

Page(s) in Text: 215

Topic: Retrieval: How We Recall the Past from Episodic Memory

43. You notice someone reading The Red Badge of Courage in the library and it reminds you that book was your favorite book in high school. You then remember your English class, some conversations you had about the story in class, who you sat next to, and so on. This type of retrieval process is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. pattern completion c. graded recall

b. spreading retrieval d. episodic activation

Answer: a

Page(s) in Text: 215

Topic: Retrieval: How We Recall the Past from Episodic Memory

44. During recapitulation, the information flow is from \_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_.

a. cortical areas, the hippocampus c. the thalamus, the hippocampus

b. the hippocampus, cortical areas d. the temporal lobe, the frontal lobe

Answer: a

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Topic: Retrieval: How We Recall the Past from Episodic Memory

45. The \_\_\_\_\_\_\_\_ lobes are involved in retrieving episodic memories.

a. parietal c. cerebellar

b. frontal d. occipital

Answer: b

Page(s) in Text: 216

Topic: Retrieval: How We Recall the Past from Episodic Memory

46. Damage to the frontal lobes can cause \_\_\_\_\_\_\_\_\_\_\_ amnesia.

a. emotional c. location

b. temporal d. source

Answer: d

Page(s) in Text: 216

Topic: Retrieval: How We Recall the Past from Episodic Memory

47. In order to find information in PsycINFO, you need to search using a keyword. If you fail to use the correct keywords, it is difficult to find the articles that you are really interested in. PsycINFO can be seen as being \_\_\_\_\_\_\_\_\_\_\_\_.

a. cue dependent c. context dependent

b. content dependent d. state dependent

Answer: a

Page(s) in Text: 217

Topic: Retrieval: How We Recall the Past from Episodic Memory

48. A friend in class thinks you should study for a test in the same classroom that you have lecture and take the test in. Why would he suggest such an idea?

a. learning-dependent effect c. state-dependent effect

b. distributed practice effect d. context-dependent effect

Answer: d

Page(s) in Text: 217

Topic: Retrieval: How We Recall the Past From Episodic Memory

49. Someone cut you off while you were driving on the highway. You were angry at the driver for almost causing an accident. All of the sudden, you also remembered a time when you were younger and your little brother cut off your Barbie’s hair. This is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_.

a. emotional confusion c. state-dependent effect

b. free association d. context-dependent effect

Answer: c

Page(s) in Text: 217

Topic: Retrieval: How We Recall the Past From Episodic Memory

50. You are at a business party and run into someone you are sure you have met before but cannot remember her name. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. retrograde amnesia c. recollection

b. familiarity d. context-dependent effect

Answer: b

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Topic: Retrieval: How We Recall the Past From Episodic Memory

51. You are at a class reunion and someone asks, “Do you remember me? It’s John.” You then remember the classes you had with John, the things you did when you hung out together, and that you liked his sister. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. familiarity c. recollection

b. free association d. context-dependent effect

Answer: c

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Topic: Retrieval: How We Recall the Past from Episodic Memory

52. All of the following are types of memory errors except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. emotional confusion c. suggestion

b. bias d. misattribution

Answer: a

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Topic: Retrieval: How We Recall the Past from Episodic Memory

53. You have been with your girlfriend for a little over a year. Although this started off well, there have been more arguments lately. Your girlfriend breaks up with you, stating that the two of you have always had difficulty agreeing on things and that she has had enough. This might be a case of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. emotional confusion c. state-dependent effect

b. belief bias d. consistency bias

Answer: d

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Topic: Retrieval: How We Recall the Past from Episodic Memory

Question Type: applied, difficult

54. You and your mother have different memories about an event that took place in high school. A possible explanation for this difference is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. consistency bias c. state-dependent effect

b. belief bias d. context-dependent effect

Answer: b

Page(s) in Text: 221

Topic: Retrieval: How We Recall the Past from Episodic Memory

Question Type: applied, difficult

55. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is ascribing a recollection to an incorrect time, place, person, or source.

a. Reconstructive memory c. Suggestion

b. Belief bias d. Misattribution

Answer: d

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Topic: Retrieval: How We Recall the Past from Episodic Memory

56. Two police officers are at the scene of a traffic accident. After talking to several people, Officer Jones reported the driver who rear-ended the other vehicle was traveling close to 50 mph in a 35 mph zone. Officer Smith, however, disagreed. Based on the people he talked to, the driver was traveling about 38 mph. Their captain asked you to find out how they could disagree so much. You found that Officer Jones asked “how fast was the car moving when it slammed into the other car?” while Officer Smith asked “how fast was the car moving when it bumped into the other car?” and told the captain it was a good example of (the) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. misinformation effect c. faulty eyewitness testimony

b. natural variations d. context-dependent effect

Answer: a

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Topic: Retrieval: How We Recall the Past from Episodic Memory

57. You have back-to-back classes. You are finding that you can recall information from the first class fine but have difficulty recalling information from the second class. You may be experiencing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. misinformation c. proactive interference

b. retroactive interference d. suppression

Answer: c

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Topic: The Encoding Was Successful, but I Still Can’t Remember

58. You have back-to-back classes. You are finding that you can recall information from the second class fine but have difficult recalling information from the first class. You may be experiencing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. misinformation c. proactive interference

b. retroactive interference d. suppression

Answer: b

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Topic: The Encoding Was Successful, but I Still Can’t Remember

59. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs when retrieving some information from memory temporarily blocks the retrieval of other information from memory.

a. Output interference c. Suppression

b. Retroactive interference d. Proactive interference

Answer: a

Page(s) in Text: 227-228

Topic: The Encoding Was Successful, but I Still Can’t Remember

60. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ priming results in an enhanced ability to identify a stimulus; \_\_\_\_\_\_\_\_\_\_ priming results in facilitated processing of the meaning of a stimulus or enhanced access to a concept.

a. Response, retrieval c. Perceptual, semantic

b. Perceptual, conceptual d. Attentional, categorical

Answer: b

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Topic: Nondeclarative Memory Systems

**Short Answer**

61. Differentiate between explicit and implicit memory.

Answer: Explicit memory is memory for facts, ideas, and events that is consciously recalled. Implicit memory is for nonconscious types of memory that do not have to be recalled but, nevertheless, aid performance.

Page(s) in Text: 194-195

Topic: The Nature of Long-Term Memory

62. Briefly describe the two types of amnesia.

Answer: Anterograde amnesia is the inability to consciously remember information after brain damage. Retrograde amnesia is the inability to remember information that occurred before brain damage.

Page(s) in Text: 198-199

Topic: The Nature of Long-Term Memory

63. Briefly describe the levels-of-processing theory.

Answer: The levels-of-processing theory suggests that processing occurs on a continuum from shallow to deep processing. Shallow processing tends to center around perceptual or structural aspects of the incoming information while deep processing focuses on the meaning or semantic aspects of the incoming information. In generally, deeper levels of processing result in better recall.

Page(s) in Text: 203-204

Topic: The Nature of Long-Term Memory

64. Differentiate between transfer appropriate processing and the encoding specificity principle.

Answer: Transfer appropriate processing and the encoding specificity principle are related terms. Transfer appropriate processing states that the processing at encoding is most effective to the extent that that processing overlaps with the processing to be performed at retrieval. The focus is matching the processing at encoding with the type of processing to be used at retrieval or test. The encoding specificity principle states that our ability to remember a stimulus depends on the similarity between the way the stimulus is processed at encoding and the way it is processed at test. The focus of this principle is on the correspondence between the way something is learned and how it is used at test.

Page(s) in Text: 205

Topic: The Nature of Long-Term Memory

65. Explain how amnesia helps us understand how memories are consolidated.

Answer: Amnesiacs, like H.M., have their hippocampus removed. They experience anterograde amnesia in which they cannot create new memories. Therefore, the hippocampus must be important for binding information into memory. Likewise, the retrograde amnesia found with these patients suggests that the hippocampus is important for consolidating information.

Page(s) in Text: 211-214

Topic: The Nature of Long-Term Memory

66. Briefly describe why sleep and remembering may be important for developing stable memories.

Answer: One hypothesis is that while we sleep or remember information, the medial temporal lobe reinstates or recapitulates the pattern of activation present during learning, thereby strengthening connections with the relevant lateral cortical regions where the long-term memories reside.

Page(s) in Text: 214

Topic: The Nature of Long-Term Memory

67. Distinguish between blocking and suppression.

Answer: Blocking occurs when multiple associations are associated with a cue and one of those associations is stronger than the others, preventing retrieval of the target information. In a sense, blocking is an instance of cue overload. It can be eliminated by using a different cue. Suppression is the active weakening of a memory that occurs because the act of retrieval is competitive. Retrieving information strengthens its representation and suppresses competing associations. Providing a different cue does not eliminate suppression.

Page(s) in Text: 227-228

Topic: The Encoding Was Successful, but I Still Can’t Remember

68. Outline the stages of skill learning.

Answer: Fitts and Posner (1967) proposed three stages of skill learning: (1) cognitive stage in which knowledge is declaratively represented; (2) associative stage in which error rates and verbal mediations decline; and (3) autonomous stage in which behavior is highly accurate, rapidly executed, and requires little attention.

Page(s) in Text: 233-234

Topic: Nondeclarative Memory Systems

Essay

69. Long-term memory can be divided into several different types of memory. What is long-term memory? Describe the two main subdivisions of long-term memory. Also provide two examples of subdivisions for each of the two main subdivisions of long-term memory.

Answer: Long-term memory consists of information acquired through experience and persists so that it can be retrieved at a later time. Long-term memory can be divided into declarative (explicit) and nondeclarative (implicit) memory. Declarative memory is memory for facts and events. Facts are stored in semantic memory and events are stored in episodic memory. Nondeclarative memory is that which is not consciously recalled but is used to aid performance. Priming, skills and habits, emotional responses, learned musculature responses, and habituation and sensitization are examples of nondeclarative memory.

Page(s) in Text: 193-195

Topic: The Nature of Long-Term Memory

70. Recreate the diagram outlining the different types of long-term memory and the brain locations associated with each type.

Answer: see Figure 5-1 on page 194

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

71. After H.M. had part of his medial temporal lobe removed to help control his epileptic seizures, he continued to display normal intelligence but impaired memory. Describe some of the impairments H.M. experienced and some of the memory tasks he performed at normal levels. Why are these findings important for understanding memory?

Answer: H.M. could recall information he had learned or experienced before his surgery. H.M. was also able to recall items that were held in memory for a short time. He could learn new motor skills as well (e.g., mirror tracing). Normal performance on priming and word stem completion tasks by other amnesiacs further indicate normal implicit memory. However, H.M. had no episodic memory for completing the mirror tracing task and had difficulty learning new information. The findings from H.M. and other amnesiacs are important because they provide evidence for a short-term/working memory and for a long-term memory. They also show differences between types of long-term memory. Finally, they show that the medial temporal lobe is not involved with all types of long-term memory.

Page(s) in Text: 195-201

Topic: The Nature of Long-Term Memory

Question Type: factual, difficult

72. Define priming. Also explain how different types of priming affect cognition.

Answer: Priming occurs when an encounter with a stimulus unconsciously alters subsequent responses to that stimulus or a related one. Priming is evident in behavioral changes including faster response times, increased accuracy, or biased responses. Perceptual priming results in an enhanced ability to identify a stimulus. Conceptual priming results in facilitated processing of the meaning of a stimulus or enhanced access to a concept.

Page(s) in Text: 230--233

Topic: Nondeclarative Memory Systems

Question Type: factual, difficult

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 5 – Quick Quiz

1. Remembering your birth date and the hospital you were born in requires \_\_\_\_\_\_\_\_\_\_\_ memory.

a. semantic c. episodic

b. procedural d. associative

2. Long-term memory can be divided into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ memory.

a. semantic, procedural c. episodic, associative

b. explicit, implicit d. declarative, explicit

3. Memory tests examining changes in performance are referred to as \_\_\_\_\_\_\_\_\_\_ memory tests.

a. procedural c. explicit

b. implicit d. associative

4. H.M. could not remember \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. items for a short period of time c. events from his childhood

b. skills and procedures d. new information

5. After a stroke, Henry can remember things from his past but is unable to remember new information. Henry has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. episodic amnesia c. anterograde amnesia

b. retrograde amnesia d. semantic amnesia

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involves interpreting information and connecting it with other information.

a. Elaboration c. Encoding

b. Consolidation d. Retrieval

7. To help learn the keywords for this chapter in your text, you use each word in a sentence. This is an example of a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ level-of-processing.

a. structural c. acoustic

b. semantic d. phonological

8. A key difference between incidental and intentional learning is the degree to which information is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. distributed c. massed

b. generated d. elaborated

9. The superiority of distributed practice over massed practice is known as the \_\_\_\_\_\_\_\_\_\_\_\_.

a. intentional learning principle c. spacing effect

b. massed learning effect d. generation effect

10. Binding of related pieces of information for long-term memory takes place in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frontal lobe c. hippocampus

b. association cortex d. thalamus

Answer Key

Chapter 5 – Quick Quiz

1. Answer: a

Page(s) in Text: 194

Topic: The Nature of Long-Term Memory

2. Answer: b

Page(s) in Text: 194-195

Topic: The Nature of Long-Term Memory

3. Answer: b

Page(s) in Text: 195

Topic: The Nature of Long-Term Memory

4. Answer: d

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Topic: The Nature of Long-Term Memory

5. Answer: c

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Topic: The Nature of Long-Term Memory

6. Answer: b

Page(s) in Text: 202

Topic: Encoding: How Episodic Memories Are Formed

7. Answer: b

Page(s) in Text: 203

Topic: Encoding: How Episodic Memories Are Formed

8. Answer: d

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Topic: Encoding: How Episodic Memories Are Formed

9. Answer: c

Page(s) in Text: 209-210

Topic: Encoding: How Episodic Memories Are Formed

10. Answer: c

Page(s) in Text: 211

Topic: Encoding: How Episodic Memories Are Formed

Chapter 6: Working Memory

**Multiple Choice**

1. Together, short-term mental storage and manipulation operations are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. immediate memory c. working memory

b. active memory d. short-term memory

Answer: c

Page(s) in Text: 240

Topic: Using Working Memory

\*2. Using the computer as a metaphor for cognition, RAM is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. working memory c. sensory memory

b. long-term memory d. executive functioning

Answer: a

Page(s) in Text: 241

Topic: Using Working Memory

3. Using the computer as a metaphor for cognition, the hard drive is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. long-term memory c. working memory

b. the brain d. sensory memory

Answer: a

Page(s) in Text: 241

Topic: Using Working Memory

\*4. Working memory capacity refers to the amount of information that can be \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. retrieved quickly c. organized

b. held accessible d. processed at once

Answer: b

Page(s) in Text: 241

Topic: Using Working Memory

5. Working memory span is related to all of the following except \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. verbal SAT scores c. college GPA

b. speed of skill acquisition d. general IQ

Answer: c

Page(s) in Text: 241

Topic: Using Working Memory

6. William James believed that \_\_\_\_\_\_\_\_\_ memory is an initial repository for information to be inspected and attended to while \_\_\_\_\_\_\_\_\_\_ memory is a long-term storage system.

a. major, minor c. working, semantic

b. quick, slow d. primary, secondary

Answer: d

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Topic: From Primary Memory to Working Memory: A Brief History

\*7. According to William James, primary memory (or working memory) requires \_\_\_\_\_\_\_\_\_\_\_\_.

a. perceptual information c. motivation

b. consciousness d. secondary memory

Answer: b

Page(s) in Text: 243

Topic: From Primary Memory to Working Memory: A Brief History

\*8. Miller argued that short-term memory holds about \_\_\_\_\_\_ items.

a. five c. nine

b. seven d. three

Answer: c

Page(s) in Text: 240

Topic: From Primary Memory to Working Memory: A Brief History

9. You have to remember of new phone number. Instead of remembering each of the seven digits individually (5-5-5-1-2-1-2), you remember two numbers (555-1212). This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. thinking c. memorizing

b. chunking d. consolidating

Answer: b

Page(s) in Text: 244

Topic: From Primary Memory to Working Memory: A Brief History

10. More recent estimates of short-term memory capacity are 3 + 1 instead of the 7 + 2 suggested by Miller. The newer estimates are lower because they take into account \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. technology c. motivation

b. strategies d. cohort effects

Answer: b

Page(s) in Text: 244

Topic: From Primary Memory to Working Memory: A Brief History

\*11. The Brown-Peterson task was used to assess the\_\_\_\_\_\_\_\_\_\_\_\_ of short-term memory.

a. capacity c. accessibility

b. function d. duration

Answer: d

Page(s) in Text: 244-245

Topic: From Primary Memory to Working Memory: A Brief History

12. There is a debate over whether or not information lost from short-term memory is lost due to \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. decay, displacement c. decay, interference

b. time, obstruction d. interference, capacity limitations

Answer: c

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Topic: From Primary Memory to Working Memory: A Brief History

13. A possible explanation for why information is lost in short-term memory is \_\_\_\_\_\_\_\_\_\_\_.

a. task demands c. intentional forgetting

b. passive decay d. suppression

Answer: b

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Topic: From Primary Memory to Working Memory: A Brief History

14. What type of interference may be associated with forgetting in short-term memory?

a. retroactive c. Stroop

b. proactive d. sensory

Answer: c

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Topic: From Primary Memory to Working Memory: A Brief History

\*15. Using a search task, Sternberg found that information in short-term memory is processed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. in parallel c. automatically

b. sequentially d. relatively slowly

Answer: b

Page(s) in Text: 246-247

Topic: From Primary Memory to Working Memory: A Brief History

16. The modal model of memory was proposed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Brown and Peterson c. Miller

b. Sternberg d. Atkinson and Shiffrin

Answer: d

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Topic: From Primary Memory to Working Memory: A Brief History

17. The sensory registers in the Atkinson-Shiffrin model of memory is related to \_\_\_\_\_\_\_\_\_\_\_ research on sensory memory.

a. Kosslyn’s c. Sternberg’s

b. Peterson and Peterson’s d. Sperling’s

Answer: d

Page(s) in Text: 245, 247

Topic: From Primary Memory to Working Memory: A Brief History

18. The short-term store in the Atkinson-Shiffrin model of memory is related to the work of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Miller c. Sperling

b. Brown d. Peterson and Peterson

Answer: b

Page(s) in Text: 243-244

Topic: From Primary Memory to Working Memory: A Brief History

19. Neuropsychological research draws into question the \_\_\_\_\_\_\_\_\_\_\_\_ nature of the Atkinson-Shiffrin model of memory.

a. parallel c. sequential

b. organizational d. strategical

Answer: c

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Topic: From Primary Memory to Working Memory: A Brief History

\*20. Baddeley and Hitch argued that there are actually \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for short-term storage.

a. no benefits c. multiple systems

b. no resources d. multiple executives

Answer: c

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Topic: From Primary Memory to Working Memory: A Brief History

21. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the control system in the Baddeley-Hitch model.

a. executive controller c. central processor

b. central executive d. operating system

Answer: b

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Topic: From Primary Memory to Working Memory: A Brief History

22. Verbal information is processed in a short-term memory buffer referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. auditory store c. acoustic processor

b. auditory memory d. phonological loop

Answer: d

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Topic: From Primary Memory to Working Memory: A Brief History

23. The Baddeley-Hitch model of memory was a major change in thinking about memory because it stressed \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. a workplace for cognition c. the relationship with long-term memory

b. the duration of memory d. parallel processing

Answer: a

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Topic: From Primary Memory to Working Memory: A Brief History

24. After you look up the phone number to order a pizza, you hear the number in your head over and over until you dial the number. The phone number is being processed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. auditory sensory buffer c. phonological loop

b. articulatory store d. central executive

Answer: c

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Topic: Understanding the Working Memory Model

25. The phonological loop consists of what two subcomponents?

a. phonological store, articulatory rehearsal

b. auditory sensory buffer, working memory

c. auditory memory, phonological rehearsal

d. short-term memory, rehearsal loop

Answer: a

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Topic: Understanding the Working Memory Model

26. Translating verbal information into a sound-based code is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. auditory processing c. acoustic processing

b. phonological processing d. aural processing

Answer: b

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Topic: Understanding the Working Memory Model

27. Translating verbal information into a speech-based code is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. articulatory processing c. phonological processing

b. aural processing d. acoustic processing

Answer: a

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Topic: Understanding the Working Memory Model

28. The \_\_\_\_\_\_\_\_\_\_\_\_\_ effect occurs when similar sound-based codes are activated in the phonologocial loop.

a. phonological similarity c. word-length

b. related-code d. articulatory suppression

Answer: a

Page(s) in Text: 251-252

Topic: Understanding the Working Memory Model

29. Phonological store : phonological similarity :: articulatory rehearsal : \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. articulatory suppression c. phonological loop

b. word-length effect d. related-code effect

Answer: b

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Topic: Understanding the Working Memory Model

30. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is related to the number of items than can be correctly recalled from working memory.

a. Dichotic listening c. Phonological rehearsal

b. Articulatory span d. Speech rate

Answer: d

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Topic: Understanding the Working Memory Model

31. Under conditions of articulatory suppression, what part of working memory serves a compensatory role?

a. articulatory rehearsal c. phonological store

b. central executive d. articulation buffer

Answer: b

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Topic: Understanding the Working Memory Model

32. Evidence suggests that the phonological store component of working memory relies on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. left prefrontal cortex c. Broca’s area

b. superior temporal cortex d. left inferior parietal cortex

Answer: d

Page(s) in Text: 253

Topic: Understanding the Working Memory Model

Question Type: factual, difficult

33. Damage to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is related to articulatory rehearsal impairment.

a. left superior temporal cortex c. left inferior frontal cortex

b. left inferior parietal cortex d. left prefrontal cortex

Answer: c

Page(s) in Text: 254

Topic: Understanding the Working Memory Model

Question Type: factual, difficult

\*34. Developmental data indicates that the phonological loop is important in \_\_\_\_\_\_\_\_\_\_\_\_.

a. learning a new language c. articulation

b. reducing grammatical errors d. reading

Answer: a

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Topic: Understanding the Working Memory Model

\*35. The ability to create and manipulate mental images is associated with the \_\_\_\_\_\_\_\_\_\_\_\_.

a. central executive c. visuospatial scratchpad

b. visual loop d. primary visual cortex

Answer: c

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Topic: Understanding the Working Memory Model

36. The process of mentally refreshing stored locations to keep them highly accessible is \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. executive processing c. spatial attention

b. visual activation d. spatial rehearsal

Answer: d

Page(s) in Text: 257

Topic: Understanding the Working Memory Model

37. Spatial working memory takes place in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. superior colliculus c. prefrontal cortex

b. thalamus d. brain regions supporting a certain location

Answer: d

Page(s) in Text: 258

Topic: Understanding the Working Memory Model

38. The integration and coordination of information between the phonological loop and the visuospatial scratchpad is accomplished by the \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. operating system c. homunculus

b. central executive d. corpus callosum

Answer: b

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Topic: Understanding the Working Memory Model

39. Performing two distinct tasks at the same time is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. dichotic processing c. dual-task coordination

b. multitasking d. selective attention

Answer: c

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Topic: Understanding the Working Memory Model

40. Human neuroimaging data supports a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of working memory in the prefrontal cortex.

a. content-based organization c. process-based organization

b. storage-based organization d. modality-based organization

Answer: c

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Topic: Understanding the Working Memory Model

Question Type: factual, difficult

41. If you were to conduct a study in which participants have to make decisions about words in sentences, what type of responding would yield the best results?

a. written response c. verbal response

b. pointing d. shadowing

Answer: b

Page(s) in Text: 261

Topic: Understanding the Working Memory Model

Question Type: applied, difficult

42. Short-term storage relies on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. weight-based memory c. process-based memory

b. activity-based memory d. modality-based memory

Answer: b

Page(s) in Text: 262

Topic: How Working Memory Works

43. Long-term memory relies on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. weight-based memory c. process-based memory

b. activity-based memory d. modality-based memory

Answer: a

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Topic: How Working Memory Works

44. Strengthening neural connections is the basis of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. weight-based memory c. process-based memory

b. activity-based memory d. modality-based memory

Answer: a

Page(s) in Text: 262

Topic: How Working Memory Works

45. A persistent pattern of neural activity is the basis of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. weight-based memory c. process-based memory

b. activity-based memory d. modality-based memory

Answer: b

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Topic: How Working Memory Works

46. In human neuroimaging studies, sustained increases in the activity levels of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are associated with the delay period of working memory tasks.

a. pulvinar nucleus and parietal cortex c. inferior temporal lobe

b. ventral prefrontal cortex d. dorsolateral prefrontal and parietal cortex

Answer: d

Page(s) in Text: 265

Topic: How Working Memory Works

Question Type: factual, difficult

47. Increasing the amount of information to be stored \_\_\_\_\_\_\_\_\_\_\_\_ the number of active brain regions and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the activity of those regions.

a. increases, increases c. does not change, increases

b. increases, does not change d. increases, decreases

Answer: a

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Topic: How Working Memory Works

48. Neurons receiving and sending information form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that is involved with short-term maintenance of working memory.

a. interactive network c. feedback system

b. cyclical communication network d. reverberatory loop

Answer: d

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Topic: How Working Memory Works

49. The prefrontal cortex plays a special role in the \_\_\_\_\_\_\_\_\_\_\_\_\_ of information.

a. organization c. active maintenance

b. filtering d. encoding

Answer: c

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Topic: How Working Memory Works

50. In the \_\_\_\_\_\_\_\_\_\_\_\_\_ model, feedback connections allow activity maintained in working memory to bias the internal associations that are activated in response to perceptual input.

a. active feedback c. response biasing

b. goal-maintenance d. association-based

Answer: b

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Topic: How Working Memory Works

51. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ may be involved in chunking information into meaningful units.

a. integration area c. episodic buffer

b. semantic buffer d. consolidation center

Answer: c

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52. Behavioral and neuroimaging studies suggest that people with higher working memory capacities may have an easier time keeping \_\_\_\_\_\_\_\_\_\_\_\_\_\_ active.

a. goal-relevant information c. focused attention

b. response options d. different sources of information

Answer: a

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\*53. Drugs that increase the level of or facilitate the action of \_\_\_\_\_\_\_\_\_\_\_ enhance working memory capabilities.

a. epinephrine c. serotonin

b. acetylcholine d. dopamine

Answer: d

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**Short Answer**

54. Describe how the computer can be used as a metaphor for cognition.

Answer: Information stored in the hard drive is like long-term memory and RAM corresponds to working memory.

Page(s) in Text: 240-241

Topic: Using Working Memory

55. What is the concept of chunking? What are the benefits of chunking?

Answer: Chunking is the grouping of individual items into meaningful units. By combining items into larger groups of information, chunking essentially increases the capacity of short-term memory.

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Topic: From Primary Memory to Working Memory: A Brief History

56. Outline the Brown-Peterson task.

Answer: The Brown-Peterson task examined the duration of short-term memory. Participants were shown a string of three consonants to memorize, but active rehearsal was prevented by having participants count backwards from 100 by 3s. After varying delay periods, participants recalled the string. Accuracy declined to 50 percent with a delay as short as six seconds and almost reached zero by 18 seconds.

Page(s) in Text: 244-245

Topic: From Primary Memory to Working Memory: A Brief History

57. Outline the Sternberg search task.

Answer: Participants were briefly presented a variable number of items which were then removed during a minimal delay period. Following the delay, a probe item was presented. Participants had to indicate whether or not the probe item matched an item in the memory set. As the number of items in the memory increased so did the response time.

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Topic: From Primary Memory to Working Memory: A Brief History

58. Diagram and label the Atkinson-Shiffrin model of memory.

Answer: see Figure 6-4

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Topic: From Primary Memory to Working Memory: A Brief History

59. Diagram or describe the Baddeley-Hitch model of memory.

Answer: see Figure 6-5

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Topic: From Primary Memory to Working Memory: A Brief History

60. Define phonological similarity and the word-length effects. What do these two findings show us about working memory?

Answer: The phonological similarity effect occurs when items simultaneously stored in working memory have to be serially recalled. Under these conditions, performance is significantly worse when the items to be maintained all sound the same. The word-length effect occurs when performance on a recall task is worse for long words than short words. The assumption is that longer words take longer to rehearse and, therefore, fewer items are rehearsed compared to short words. The unrehearsed words are then dropped from the phonological store. These tasks provide evidence for one component of working memory that maintains sound information (phonological store) and another component involved with articulatory processing (articulatory rehearsal).

Page(s) in Text: 251-252

Topic: Understanding the Working Memory Model

61. Explain the concept of weight-based memories.

Answer: The basic idea behind weight-based memories is that the strength or weight of memory representations undergoes a relatively permanent strengthening or weakening reflecting an underlying structural change of neural pathways.

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Topic: How Working Memory Works

**Essay**

62. Compare and contrast the Atkinson-Shiffrin and Baddeley-Hitch models of memory.

Answer: The Atkinison-Shiffrin model is a multi-store model including sensory registers, short-term memory, and long-term memory. The model assumes a sequential order of processing. As a result, the short-term store is viewed as a link to long-term memory. Therefore, if the short-term store is impaired, then there should be a corresponding impairment with long-term memory. The Baddeley-Hitch does not include sensory registers or long-term memory. Instead, this model is a different conceptualization of short-term storage. In this view, short-term storage is more than a link to long-term storage. It is also a place where information is compared and manipulated. Thus, it is thought of as working memory. Working memory accounts for the processing of verbal information with the phonological loop and visual information with the visuospatial scratchpad. It also includes a control system in the central executive.

Page(s) in Text: 247-250

Topic: From Primary Memory to Working Memory: A Brief History

63. Describe the patterns of data associated with animal research using the delayed response task.

Answer: In a delayed response task, an animal looks at a central location while a different spatial location is cued. After a delay, the animal is given a signal to look at the cued location. The assumption is that the cued location must be held in working memory. Single-cell recordings have shown in the activity of neurons in the dorsolateral regions of the prefrontal cortex. Some cells increased activity during the cue while others increased activity during the delay when no perceptual information was presented. Further, cell activation corresponded to particular locations on the display.

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Topic: How Working Memory Works

64. In what ways is working memory like RAM and in what ways is working memory different from RAM?

Answer: Working memory is like RAM in that it holds information that is currently being processed. However, RAM is very flexible in the information that it holds, whereas working memory appears to deal with specific types of information in specific areas of the brain (e.g., spatial location).

Page(s) in Text: 265

Topic: How Working Memory Works

65. Briefly describe the *N*-back task. How are the results of this task interpreted?

Answer: A string of items (e.g., letters) are presented during an *N*-back task and participants are asked to indicate whether the current item in the string matches an item that is *N* back from it. *N* is typically 1, 2, or 3. If *N* is 2, for example, a participant would respond no-no-yes-no to the string C B C D. Since the experimenter can hold the identity and order of items constant, the only factor changing in this design is the working memory load. However, as load increases from 1 to 3 items back, more items need to be stored along with information about the order of the items. Therefore, it is difficult to know whether or not the increase in response of the *N*-back task with increasing load is related to maintaining more items in working memory or the executive processing required to preserve the order information of the items.

Page(s) in Text: 266-267

Topic: How Working Memory Works

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 6 – Quick Quiz

1. Using the computer as a metaphor for cognition, RAM is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. working memory c. sensory memory

b. long-term memory d. executive functioning

2. Working memory capacity refers to the amount of information that can be \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. retrieved quickly c. organized

b. held accessible d. processed at once

3. According to William James, primary memory (or working memory) requires \_\_\_\_\_\_\_\_\_\_\_\_.

a. perceptual information c. motivation

b. consciousness d. secondary memory

4. Miller argued that short-term memory holds about \_\_\_\_\_\_ items.

a. five c. nine

b. seven d. three

5. The Brown-Peterson task was used to assess the\_\_\_\_\_\_\_\_\_\_\_\_ of short-term memory.

a. capacity c. accessibility

b. function d. duration

6. Using a search task, Sternberg found that information in short-term memory is processed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. in parallel c. automatically

b. sequentially d. relatively slowly

7. Baddeley and Hitch argued that there are actually \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for short-term storage.

a. no benefits c. multiple systems

b. no resources d. multiple executives

8. Developmental data indicates that the phonological loop is important in \_\_\_\_\_\_\_\_\_\_\_\_.

a. learning a new language c. articulation

b. reducing grammatical errors d. reading

9. The ability to create and manipulate mental images is associated with the \_\_\_\_\_\_\_\_\_\_\_\_.

a. central executive c. visuospatial scratchpad

b. visual loop d. primary visual cortex

10. Drugs that increase the level of or facilitate the action of \_\_\_\_\_\_\_\_\_\_\_ enhance working memory capabilities.

a. epinephrine c. serotonin

b. acetylcholine d. dopamine

Answer Key

Chapter 6 – Quick Quiz

1. Answer: a

Page(s) in Text: 241

Topic: Using Working Memory

2. Answer: b

Page(s) in Text: 241

Topic: Using Working Memory

3. Answer: b

Page(s) in Text: 243

Topic: From Primary Memory to Working Memory: A Brief History

4. Answer: c

Page(s) in Text: 240

Topic: From Primary Memory to Working Memory: A Brief History

5. Answer: d

Page(s) in Text: 244-245

Topic: From Primary Memory to Working Memory: A Brief History

6. Answer: b

Page(s) in Text: 246-247

Topic: From Primary Memory to Working Memory: A Brief History

7. Answer: c

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Topic: From Primary Memory to Working Memory: A Brief History

8. Answer: a

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Topic: Understanding the Working Memory Model

9. Answer: c

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Topic: Understanding the Working Memory Model

10. Answer: d

Page(s) in Text: 276

Chapter 7: Executive Processes

Multiple Choice

1. An accidental explosion during railroad construction sent a tamping iron through Phineas Gage’s \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. temporal lobe c. temporal lobe

b. frontal lobe d. occipital lobe

Answer: b

Page(s) in Text: 282

Topic: The Frontal Lobe Connection

2. Phineas Gage’s accident had the most impact on his \_\_\_\_\_\_\_\_\_\_\_\_.

a. personality c. intelligence

b. motor control d. vision

Answer: a

Page(s) in Text: 283

Topic: The Frontal Lobe Connection

\*3. An individual is brought to you who has deficits in self-monitoring, attention-switching, and sequencing behaviors to achieve a goal. You suspect that he has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frontal-lobe syndrome c. central executive deficit

b. executive processing disorder d. attention deficit disorder

Answer: a

Page(s) in Text: 284

Topic: The Frontal Lobe Connection

4. The idea that every executive process is mediated by the PFC is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. executive mediation theory c. prefrontal control theory

b. frontal executive hypothesis d. homunculus hypothesis

Answer: b

Page(s) in Text: 285

Topic: The Frontal Lobe Connection

\*5. A psychological test in which color words are printed in compatible print colors on some trials and incompatible print colors on other trials.

a. Garner task c. Stroop task

b. Hanoi task d. Wisconsin Card Sort task

Answer: c

Page(s) in Text: 285

Topic: Frontal Damage and the Frontal Hypothesis

6. With normal subjects, responses to incompatible Stroop trials are \_\_\_\_\_\_\_\_\_\_\_ accurate and \_\_\_\_\_\_\_\_\_\_\_\_ than responses to compatible trials.

a. more, slower c. less, faster

b. about as, faster d. about as, slower

Answer: d

Page(s) in Text: 286

Topic: Frontal Damage and the Frontal Hypothesis

7. Patients with damage to the \_\_\_\_\_\_\_\_\_\_\_\_\_ are significantly less accurate on incompatible Stroop trials than normal subjects.

a. SMA c. anterior cingulate

b. dorsolateral PFC d. ventromedial PFC

Answer: b

Page(s) in Text: 286

Topic: Frontal Damage and the Frontal Hypothesis

Question Type: factual, difficult

\*8. Cards are sorted by the number of items on the card, the color of the items, or the number of the items in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ task.

a. trading card c. Vegas Card Sort

b. Wisconsin Card Sort d. Stroop Card Sort

Answer: b

Page(s) in Text: 286

Topic: Frontal Damage and the Frontal Hypothesis

9. Frontal lobe patients are \_\_\_\_\_\_\_\_\_\_\_ at determining the \_\_\_\_\_\_\_\_\_ critical attribute in the Wisconsin Cart Sort task compared to normal participants.

a. slower, first c. faster, second

b. the same, first d. the same, second

Answer: b

Page(s) in Text: 287

Topic: Frontal Damage and the Frontal Hypothesis

\*10. Results from the Wisconsin Card Sort task with frontal patients suggests that the PFC is important for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. self-monitoring c. inhibiting irrelevant information

b. developing subgoals d. attention switching

Answer: d

Page(s) in Text: 287

Topic: Frontal Damage and the Frontal Hypothesis

11. The Tower of Hanoi problem shows that frontal patients have difficulty switching attention and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. self-monitoring c. deciding on an action

b. developing subgoals d. inhibiting semantic information

Answer: b

Page(s) in Text: 288

Topic: Frontal Damage and the Frontal Hypothesis

12. As manager of a research and development firm, you are concerned about an employee who is extremely unorganized and has struggled with a variety of different tasks you have given him. Recalling what you learned in your cognition class, you are concerned that he might have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. task-monitoring syndrome c. executive dysfunction

b. diffused focusing disorder d. goal-setting deficiency

Answer: c

Page(s) in Text: 288

Topic: Frontal Damage and the Frontal Hypothesis

Question Type: applied, difficult

\*13. Executive attention is required whenever \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. a response is necessary c. language is involved

b. multiple processes are competing d. a complex response is necessary

Answer: b

Page(s) in Text: 289

Topic: Executive Attention

14. The \_\_\_\_\_\_\_\_\_\_\_\_ is one of the most easily demonstrated phenomena in cognitive psychology.

a. response inhibition effect c. stimulus-response compatibility effect

b. compatibility effect d. switching cost effect

Answer: b

Page(s) in Text: 290

Topic: Executive Attention

15. Little executive attention is needed when a task is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. intentional c. controlled

b. automatic d. voluntary

Answer: b

Page(s) in Text: 290

Topic: Executive Attention

16. You are working for a car manufacturer and one of your engineers shows you a new steering wheel design. He claims that the car will be easier to use because all of the controls are on the steering wheel directly in front of the driver. For example, the turn signal is a toggle switch. You press up to signal a right-hand turn and down for a left-hand turn. You ask the engineer to re-think his design because it lacks \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. ergonomic compatibility c. the potential for automatic processing

b. executive control d. stimulus-response compatibility

Answer: d

Page(s) in Text: 290

Topic: Executive Attention

\*17. Neural network models are composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layers.

a. input, processing, and output c. stimulus, operational, and response

b. input, supplemental, and output d. input, hidden, and output

Answer: d

Page(s) in Text: 291

Topic: Executive Attention

18. In the three-layer neural-network model of cognitive processing for the Stroop task, errors are made on the incompatible trials because the connection between the word nodes of the hidden layer and the response nodes is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. ambiguous c. stronger than the color-response connection

b. excited d. inhibiting other words

Answer: c

Page(s) in Text: 292

Topic: Executive Attention

19. The response layer of a neural-network is associated with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. prefrontal cortex c. cerebellum

b. response pathway d. motor cortex

Answer: d

Page(s) in Text: 292

Topic: Executive Attention

20. Nodes in the hidden layer of a neural-network model for the Stroop task dealing with work information may be associated with (the) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. medial temporal cortex c. superior temporal cortex

b. Broca’s area d. prefrontal cortex

Answer: d

Page(s) in Text: 292

Topic: Executive Attention

21. Cohen et al. (1996) referred to the executive-attention component of a neural-network as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. homunculus c. central executive

b. attentional controller d. monitoring system

Answer: b

Page(s) in Text: 293

Topic: Executive Attention

22. The attentional controller activates nodes in a neural-network based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. similarity across representations c. amount of conflict in the response layer

b. signal strength d. relevance to goals

Answer: d

Page(s) in Text: 293

Topic: Executive Attention

23. The \_\_\_\_\_\_\_\_\_\_\_\_\_ monitors the amount of conflict between nodes at the response level and engages executive attention as conflict increases.

a. conflict monitor c. task monitor

b. response monitor d. attentional controller

Answer: a

Page(s) in Text: 293-294

Topic: Executive Attention

\*24. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the area of the brain associated with monitoring.

a. dorsolateral prefrontal cortex c. anterior cingulate

b. premotor area d. thalamus

Answer: c

Page(s) in Text: 294

Topic: Executive Attention

Question Type: factual, difficult

25. Research suggests that the anterior cingulate is only activated at the \_\_\_\_\_\_\_\_\_\_\_\_\_ layer of processing in a neural-network model.

a. response c. input

b. conflict d. hidden

Answer: d

Page(s) in Text: 295

Topic: Executive Attention

26. Imagining studies suggest that the dorsolateral PFC is active when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is required to complete an attention task and that the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is active when inhibition is necessary at the response level.

a. categorization, fusiform gyrus c. divided attention, superior temporal cortex

b. working memory, anterior cingulate d. priming, ventromedial PFC

Answer: b

Page(s) in Text: 296-297

Topic: Executive Attention

Question Type: factual, difficult

27. Asking “is it bigger than a bread box” is common while playing 20 questions. However, this is not a particularly helpful question if the object you are attempting to identify is a member of a \_\_\_\_\_\_\_\_\_\_\_ category.

a. variable c. fixed

b. miscellaneous d. dimensionless

Answer: a

Page(s) in Text: 297

Topic: Executive Attention

\*28. It appears that categorization based on similarities occurs (in) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and categorization based on reasoning relies on (the)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. across the cortex, PFC c. dorsolateral PFC, dorsomedial PFC

b. perceptual areas, anterior cingulate d. occipital cortex, temporal cortex

Answer: a

Page(s) in Text: 298

Topic: Executive Attention

29. Alzheimer’s disease patients have atrophy of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. fusiform gyrus c. ventricles

b. prefrontal cortex d. superior temporal cortex

Answer: b

Page(s) in Text: 299

Topic: Executive Attention

\*30. A process that is initiated without our intention is considered to be \_\_\_\_\_\_\_\_\_\_\_.

a. efficient c. self-instantiating

b. habituated d. automatic

Answer: d

Page(s) in Text: 300

Topic: Executive Attention

31. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ consciousness focuses on the inputs while \_\_\_\_\_\_\_\_\_\_\_\_\_\_ consciousness addresses processing.

a. Thalamic, prefrontal c. Sensory, phenomenological

b. Awareness, introspective d. Primary, secondary

Answer: b

Page(s) in Text: 300

Topic: Executive Attention

32. Consciousness requires a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. response c. evaluation

b. abstraction d. experience

Answer: d

Page(s) in Text: 300

Topic: Executive Attention

33. It is speculated that information cannot be conscious unless it is first processed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. occipital lobe c. frontal lobe

b. temporal lobe d. parietal lobe

Answer: c

Page(s) in Text: 300-301

Topic: Executive Attention

34. The difference in response time between alternating blocks and pure blocks is referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. switching cost c. processing differential

b. task interference d. engage-disengage time

Answer: a

Page(s) in Text: 301

Topic: Switching Attention

35. Switching costs between two tasks are approximately \_\_\_\_\_\_\_\_\_ msec while switching costs for multiple tasks is approximately \_\_\_\_\_\_\_\_\_\_\_\_ msec.

a. 250, 750 c. 100, 700

b. 150, 800 d. 200, 550

Answer: d

Page(s) in Text: 301-302

Topic: Switching Attention

Question Type: factual, difficult

36. Task processing includes all of the following except \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. movement production c. stimulus identification

b. response selection d. outcome evaluation

Answer: d

Page(s) in Text: 303

Topic: Switching Attention

37. In the information-processing model for task switching, executive processes include \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.

a. goal shifting, response selection c. attention shifting, goal development

b. decision making, monitoring d. goal shifting, rule activation

Answer: d

Page(s) in Text: 303

Topic: Switching Attention

Question Type: factual, difficult

38. In addition to the prefrontal cortex, imaging studies have shown that the \_\_\_\_\_\_\_\_\_ cortex is involved with switching.

a. temporal c. occipital

b. parietal d. cerebellum

Answer: b

Page(s) in Text: 305

Topic: Switching Attention

39. Finding the difference between the activation pattern of a pure condition and an alternating condition results in a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. double dissociation c. subtraction image

b. prefrontal processing score d. condition distinction

Answer: c

Page(s) in Text: 305

Topic: Switching Attention

40. Areas of the brain that are specific to task switching include the \_\_\_\_\_\_\_\_\_\_\_\_\_ and the extrastriate visual cortex.

a. superior temporal cortex c. inferior parietal lobe

b. inferior colliculus d. anterior cingulate

Answer: c

Page(s) in Text: 306

Topic: Switching Attention

Question Type: factual, difficult

41. Engaging executive attention seems to be distinctly related to the \_\_\_\_\_\_\_\_\_\_\_\_\_ and the premotor cortex.

a. visual cortex c. superior temporal cortex

b. anterior PFC d. dorsolateral PFC

Answer: b

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Topic: Switching Attention

Question Type: factual, difficult

\*42. Suppressing a partially prepared response is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. response suppression c. the partial response effect

b. response inhibition d. executive control

Answer: b

Page(s) in Text: 308

Topic: Inhibition of Response

43. Response inhibition is related to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the PFC.

a. development c. size

b. firing rate d. density

Answer: a

Page(s) in Text: 311

Topic: Inhibition of Response

44. Coding the temporal order of a sequence of events is called \_\_\_\_\_\_\_\_\_\_\_\_.

a. sequencing c. an action plan

b. episodic mapping d. a subgoal progression

Answer: a

Page(s) in Text: 301-302

Topic: Sequencing

45. Suppose you are given the memory set GTKM followed by the probe “t” in an item information task. What should your response be?

a. no c. K

b. yes d. T

Answer: b

Page(s) in Text: 313

Topic: Sequencing

46. Suppose you are presented that memory set WHLC and the probe “h” in an order information task. What should be your response?

a. w c. yes

b. no d. l

Answer: d

Page(s) in Text: 313

Topic: Sequencing

47. Frontal-damage patients are impaired on \_\_\_\_\_\_\_\_\_\_\_ information tasks but parietal-damage patients are impaired on \_\_\_\_\_\_\_\_\_\_\_\_\_ information tasks.

a. order, item c. local, global

b. item, order d. initial, subsequent

Answer: a

Page(s) in Text: 313

Topic: Sequencing

Question Type: factual, difficult

48. As you increase the distance between two probe letters in an order task, the faster the response time. This is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. attentional blink c. sleeper effect

b. positive probe effect d. distance effect

Answer: d

Page(s) in Text: 301-302

Topic: Sequencing

Question Type: factual, difficult

49. Assessing one’s ongoing performance is \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. executive control c. monitoring

b. introspection d. evaluation

Answer: c

Page(s) in Text: 318

Topic: Monitoring

50. ERP research shows that people typically detect their errors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. very rarely c. inconsistently

b. almost immediately d. up to one minute later

Answer: b

Page(s) in Text: 320

Topic: Monitoring

**Short Answer**

51. Briefly describe one reason why the prefrontal cortex is particularly suited for implementing executive processes.

Answer: The human prefrontal cortex is disproportionately large compared to other primates, receives information from almost all perceptual and motor areas as well as from many subcortical areas, and there are multiple projections from the prefrontal cortex to sensory, cortical, and motor areas. The diverse connections converging in the prefrontal cortex allow for the integration of information and the projections back to other areas of the brain allow for top-down processing.

Page(s) in Text: 284-285

Topic: The Frontal Lobe Connection

52. Why is it difficult to distinguish between focusing and inhibiting?

Answer: Selective attention can be accomplished by either selecting a to-be-attended item or inhibiting (or ignoring) all other items.

Page(s) in Text: 286

Topic: Frontal Damage and the Frontal Hypothesis

53. Describe the relationship between the attentional controller and the conflict monitor in the amended neural network model of the Stroop task.

Answer: The attentional controller indicates the current goal and adds activation to nodes within a network related to the goal. The conflict monitor monitors the amount of conflict between nodes at the response level. As the amount of conflict increases, the conflict monitor engages executive attention.

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Topic: Executive Attention

54. How does frontal lobe damage impact performance on the Stroop task?

Answer: Accuracy on the incompatible trials of the Stroop task is significantly impaired for people with damage to the frontal lobe (prefrontal cortex). Presumably, this deficit is due to an inability to engage executive attention.

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Topic: Executive Attention

55. Outline a cost-switching task.

Answer: A cost-switching task alternates between two tasks. For example, on one trial the participant is shown a number and must decide whether or not the number is above or below 5. On the next trial the participant is shown a letter and must decide whether it is a consonant or vowel. Alternating trials are presented in an alternating block. Performance on these trials is compared to performance on trials within pure blocks in which participants only see numbers and make above or below 5 judgments or see letters and make consonant or vowel judgments. The difference between these blocks is referred to as the switching cost.

Page(s) in Text: 301

Topic: Switching Attention

56. Explain how task switching occurs using the information-processing model.

Answer: Each of the two tasks used in a task-switching experiment has its own set of rules (e.g., above or below 5). Thus the goals shift between trials. Goal shifting and rule activation make up the executive processes needed for task-switching tasks. These executive processes influence the task processes or stimulus identification, response selection, and movement production so that the proper response is selected and executed. [Some students may reproduce Figure 7-14]

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Topic: Switching Attention

57. Briefly state the evidence against a strong frontal-executive hypothesis.

Answer: Neuroimaging studies indicate that dorsolateral PFC is involved with both executive attention and switching executive attention tasks. The anterior PFC and the premotor cortex are also involved in executive attention. However, the inferior parietal lobe and extrastriate visual cortex are involved with switching attention. Therefore, areas outside of the frontal lobe appear to be important for executive processing. As a result, executive processing cannot be mediated by the PFC alone.

Page(s) in Text: 305-306

Topic: Switching Attention

58. What do cognitive psychologists define as scripts?

Answer: Scripts are sequences of events that allow us to know what comes next and what to do.

Page(s) in Text: 317

Topic: Sequencing

**Essay**

59. Diagram and describe the three-layer neural-network model of cognitive processing for the Stroop task.

Answer: Students should produce a diagram similar to Figure 7-8. The input layer encodes the color and word information in a color-word Stroop stimulus. Information then flows to the corresponding color and word nodes in the hidden layer. The hidden layer is connected to the response layer. However, the word nodes have stronger connections to the response nodes than color nodes. Therefore, the model indicates that many errors should be made when the color and the word are incompatible.

Page(s) in Text: 292

Topic: Executive Attention

60. Explain the need for an attentional controller and a conflict monitor in the neural-network model of cognitive processing for the Stroop task.

Answer: The three-layer neural-network model of cognitive processing for the Stroop task suggests that word nodes have stronger connections to the response nodes than the color nodes. As a result, many errors should be made when the words are incompatible. However, participants do not make that many errors on incompatible trials. Therefore, it is important to include an attentional controller in the model to add activation to the nodes that are relevant to the goals of the task at hand. The conflict monitor monitors for conflict between nodes. When conflict increases, the conflict monitor engages executive attention.

Page(s) in Text: 292-293

Topic: Executive Attention

61. What is the significance of a double dissociation? Describe the double dissociation found by Rubenstein et al. (2001). What does this double dissociation mean for the information- processing model of task switching?

Answer: A double dissociation exists when one variable affects one level of processing but not another and another variable shows the opposite pattern. A double dissociation is significant because it provides evidence for two different mechanisms. Rubenstein et al. (2001) conducted a task-switching experiment using addition and subtraction. However, they included the operator (+ or -) to eliminate the need to remember which operation to perform on a given trial. This minimized switching costs by improving performance in the alternating blocks. The presence of the operator did not impact performance in the pure blocks. Therefore, the operator influenced executive processing but not task processing. Rubenstein et al. (2001) also presented a task- switching task while making the numbers difficult to discriminate. Although poor discriminabilty of the numbers increased response time (task processing), it did not impact switching costs (executive processing). This double dissociation is important for the information processing model of task switching because it supports the idea that two mechanisms, executive processing and task processing, are involved in task-switching tasks.

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Topic: Switching Attention

62. What is the relationship between response inhibition and development?

Answer: The ability to inhibit responses improves fairly quickly over the first five years of life, suggesting that response inhibition is tied to the maturation of the brain. For instance, infants display difficulty with the A-not-B task but show improvement on the task by the end of their first year. The improvement is not likely due to changes in working memory since children often look at the correct response while making a response error. This observation suggests that children may be able to attend to the proper response but cannot inhibit the incorrect response. 3 to 5 year olds show some competency on the go/no go task while 7 to12 year olds show nearly the same pattern of neural activity on the go/no go task as adults.

Page(s) in Text: 310-311

Topic: Inhibition of Responses

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 7 – Quick Quiz

1. An individual is brought to you who has deficits in self-monitoring, attention-switching, and sequencing behaviors to achieve a goal. You suspect that he has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frontal-lobe syndrome c. central executive deficit

b. executive processing disorder d. attention deficit disorder

2. A psychological test in which color words are printed in compatible print colors on some trials and incompatible print colors on other trials.

a. Garner task c. Stroop task

b. Hanoi task d. Wisconsin Card Sort task

3. Cards are sorted by the number of items on the card, the color of the items, or the number of the items in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ task.

a. trading card c. Vegas Card Sort

b. Wisconsin Card Sort d. Stroop Card Sort

4. Results from the Wisconsin Card Sort task with frontal patients suggests that the PFC is important for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. self-monitoring c. inhibiting irrelevant information

b. developing subgoals d. attention switching

5. Executive attention is required whenever \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. a response is necessary c. language is involved

b. multiple processes are competing d. a complex response is necessary

6. Neural network models are composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layers.

a. input, processing, and output c. stimulus, operational, and response

b. input, supplemental, and output d. input, hidden, and output

7. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the area of the brain associated with monitoring.

a. dorsolateral prefrontal cortex c. anterior cingulate

b. premotor area d. thalamus

8. It appears that categorization based on similarities occurs (in) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and categorization based on reasoning relies on (the)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. across the cortex, PFC c. dorsolateral PFC, dorsomedial PFC

b. perceptual areas, anterior cingulate d. occipital cortex, temporal cortex

9. A process that is initiated without our intention is considered to be \_\_\_\_\_\_\_\_\_\_\_.

a. efficient c. self-instantiating

b. habituated d. automatic

10. Suppressing a partially prepared response is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. response suppression c. the partial response effect

b. response inhibition d. executive control

Answer Key

Chapter 7 – Quick Quiz

1. Answer: a

Page(s) in Text: 284

Topic: The Frontal Lobe Connection

2. Answer: c

Page(s) in Text: 285

Topic: Frontal Damage and the Frontal Hypothesis

3. Answer: b

Page(s) in Text: 286

Topic: Frontal Damage and the Frontal Hypothesis

4. Answer: d

Page(s) in Text: 287

Topic: Frontal Damage and the Frontal Hypothesis

5. Answer: b

Page(s) in Text: 289

Topic: Executive Attention

6. Answer: d

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Topic: Executive Attention

7. Answer: c

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Topic: Executive Attention

Question Type: factual, difficult

8. Answer: a

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Topic: Executive Attention

9. Answer: d

Page(s) in Text: 300

Topic: Executive Attention

10. Answer: b

Page(s) in Text: 308

Topic: Inhibition of Response

Chapter 8: Emotion and Cognition

**Multiple Choice**

\*1. The \_\_\_\_\_\_\_\_\_\_\_ is one of the main areas of the brain involved with emotional processing.

a. cerebellum c. amygdala

b. thalamus d. hippocampus

Answer: c

Page(s) in Text: 327

Topic: The Connection

\*2. A(n) \_\_\_\_\_\_\_\_\_\_\_ is a brief episode of synchronized responses.

a. emotion c. mood

b. attitude d. motivation

Answer: a

Page(s) in Text: 328

Topic: Defining Emotion

\*3. \_\_\_\_\_\_\_\_\_\_\_ are generally diffuse affective states lasting for relatively long durations.

a. Moods c. Emotions

b. Attitudes d. Motivations

Answer: a

Page(s) in Text: 328

Topic: Defining Emotion

4. You are on a date with a girl. During the date she smiles at you. You infer that she is happy and having a good time. This inference is based on you assessment of her \_\_\_\_\_\_\_\_\_\_\_\_.

a. mood c. attitude

b. emotion d. motivation

Answer: b

Page(s) in Text: 328

Topic: Defining Emotion

5. Your roommate has seemed more negative than usual and is lying around the apartment quite a bit. You think she might be mildly depressed. This is an assessment of her \_\_\_\_\_\_\_\_\_\_.

a. attitude c. mood

b. emotion d. motivation

Answer: c

Page(s) in Text: 328

Topic: Defining Emotion

\*6. \_\_\_\_\_\_\_\_\_\_\_ are beliefs, preferences, and predispositions with an affective component toward an object or person.

a. Emotions c. Moods

b. Motivations d. Attitudes

Answer: d

Page(s) in Text: 329

Topic: Defining Emotion

7. \_\_\_\_\_\_\_\_\_\_\_\_ was the first to propose the universality of emotional facial expressions.

a. Ekman c. Gladwell

b. Darwin d. Russell

Answer: b

Page(s) in Text: 329

Topic: Defining Emotion

\*8. A universal finding is one that is found across \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. development c. time

b. cultures d. methods

Answer: b

Page(s) in Text: 329

Topic: Defining Emotion

9. Universal emotions are also referred to as \_\_\_\_\_\_\_\_\_\_ emotions.

a. culture-free c. naturally selected

b. basic d. common

Answer: b

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Topic: Defining Emotion

10. Both you and your roommate have a fear of public speaking. While taking your speech communication class, your hands would get moist before you had to give a speech. On the other hand, sweat was readily seen running down your roommate’s forehead. The difference between the two of you is a matter of \_\_\_\_\_\_\_\_\_\_\_.

a. expression c. valence

b. manifestation d. arousal

Answer: d

Page(s) in Text: 331

Topic: Defining Emotion

\*11. Whether an emotion is positive or negative characterizes its \_\_\_\_\_\_\_\_\_\_\_.

a. meaning c. expression

b. valence d. intensity

Answer: b

Page(s) in Text: 331

Topic: Defining Emotion

12. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ graphically displays a variety of emotions based on arousal and valence.

a. emotion ring c. circumplex model

b. emotion classification system d. arousal-valence plot

Answer: c

Page(s) in Text: 331

Topic: Defining Emotion

13. According to the circumplex model of emotion, a range of emotions can be characterized by the degree to which \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ are combined.

a. cognition, physiology c. mood, attitude

b. arousal, valence d. approaching, withdrawing

Answer: b

Page(s) in Text: 331

Topic: Defining Emotion

14. The approach-withdrawal model classifies emotions based on \_\_\_\_\_\_\_\_\_\_\_\_.

a. arousal c. valence

b. motivation d. attitude

Answer: b

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Topic: Defining Emotion

15. A researcher shows a short video on industrial accidents and notes any change in mood of the participants. What method is the researcher using to manipulate mood?

a. mood generation c. video altering

b. mood induction d. evocative stimuli

Answer: b

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Topic: Manipulating and Measuring Emotion

16. A researcher shows a picture of a gun to elicit an emotional response. What is the name of this technique for manipulating emotions?

a. visual induction c. mood induction

b. pictorial cues d. evocative stimuli

Answer: d

Page(s) in Text: 334

Topic: Manipulating and Measuring Emotion

17. \_\_\_\_\_\_\_\_\_\_\_\_\_ simply involves asking research participants about their emotion.

a. Emotional recording c. Observation

b. Secondary reporting d. Direct assessment

Answer: d

Page(s) in Text: 334

Topic: Manipulating and Measuring Emotion

18. Tracking eye movements is an example of \_\_\_\_\_\_\_\_\_\_\_\_.

a. indirect assessment c. involuntary assessment

b. low-level assessment d. sensory assessment

Answer: a

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Topic: Manipulating and Measuring Emotion

19. Asking people how they feel is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ while having people choose a response from several different options is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. introspection, forced responding

b. recall, recognition

c. direct assessment, indirect assessment

d. open responding, closed responding

Answer: c

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Topic: Manipulating and Measuring Emotion

\*20. When you are angry, your \_\_\_\_\_\_\_\_\_\_\_\_ nervous system becomes active, causing your heart rate to increase.

a. parasympathetic c. sympathetic

b. peripheral d. central

Answer: c

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Topic: Manipulating and Measuring Emotion

21. You have just escaped a fear-provoking stimulus. Your \_\_\_\_\_\_\_\_\_\_\_\_\_\_ nervous system becomes more active.

a. sympathetic c. peripheral

b. parasympathetic d. central

Answer: b

Page(s) in Text: 336

Topic: Manipulating and Measuring Emotion

22. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a common component of a lie detector test.

a. Pupil dilation c. Gastrointestinal reflux

b. Potentiated eyeblink startle d. Skin conductance response

Answer: d

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Topic: Manipulating and Measuring Emotion

23. Startle reflexes are greater for \_\_\_\_\_\_\_\_\_\_\_\_\_ emotions as well as \_\_\_\_\_\_\_\_\_\_ emotions.

a. intense, negative c. acute, specific

b. negative, induced d. induced, intense

Answer: a

Page(s) in Text: 337

Topic: Manipulating and Measuring Emotion

24. Evocative stimuli that are inherently positive or negative are considered \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. innate emotional objects c. primary reinforcers

b. emotional primes d. emotional cues

Answer: c

Page(s) in Text: 338

Topic: Emotional Learning: Acquiring Evaluations

25. A stimulus with a learned motivational property is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. secondary reinforcer c. conditioned stimulus

b. instrumental cue d. positive reinforcer

Answer: c

Page(s) in Text: 338

Topic: Emotional Learning: Acquiring Evaluations

\*26. A shock is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ reinforcer and money is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ reinforcer.

a. negative, ambiguous c. conditioned, associated

b. primary, secondary d. primary, alternative

Answer: b

Page(s) in Text: 338

Topic: Emotional Learning: Acquiring Evaluations

27. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ conditioning involves learning an association between a neutral event and an emotional event.

a. Classical c. Operant

b. Instrumental d. Skinnerian

Answer: a

Page(s) in Text: 339

Topic: Emotional Learning: Acquiring Evaluations

28. Little Albert became scared of furry things after a loud gong was sounded when a rat was next to Albert. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. classical conditioning c. instrumental conditioning

b. operant conditioning d. evaluative conditioning

Answer: a

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Topic: Emotional Learning: Acquiring Evaluations

29. You became sick one night after eating sushi. Now, you will not eat sushi. This is an example of what type of classical conditioning?

a. gustatory conditioning c. evaluative conditioning

b. autonomic conditioning d. fear conditioning

Answer: b

Page(s) in Text: 339

Topic: Emotional Learning: Acquiring Evaluations

30. Your roommate received a strong electric shock once when there was a short in her curling iron. She now does not like curling irons and makes you put yours in the cabinet so she cannot see it on the bathroom counter. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. evaluative conditioning c. instrumental conditioning

b. avoidant conditioning d. aversive conditioning

Answer: d

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Topic: Emotional Learning: Acquiring Evaluations

\*31. The \_\_\_\_\_\_\_\_\_\_\_\_ is associated with emotional learning involving declarative memory and awareness.

a. pulvinar c. amygdala

b. hippocampus d. thalamus

Answer: b

Page(s) in Text: 340-341

Topic: Emotional Learning: Acquiring Evaluations

32. The \_\_\_\_\_\_\_\_\_\_\_ is associated with emotional learning involving autonomic responses.

a. pulvinar c. thalamus

b. hippocampus d. amygdala

Answer: d

Page(s) in Text: 340-341

Topic: Emotional Learning: Acquiring Evaluations

33. Skin conductance response may be measured to assess \_\_\_\_\_\_\_\_\_\_ conditioning while verbal report may be used to assess \_\_\_\_\_\_\_\_\_\_\_\_ conditioning.

a. aversive, evaluative c. classical, instrumental

b. direct, indirect d. unaware, aware

Answer: c

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Topic: Emotional Learning: Acquiring Evaluations

34. \_\_\_\_\_\_\_\_\_\_\_\_\_ conditioning concerns the increase or decrease in the frequency of a behavior depending on its outcome.

a. Instrumental c. Classical

b. Outcome d. Likelihood

Answer: a

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Topic: Emotional Learning: Acquiring Evaluations

35. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the neurotransmitter used in the brain’s reward circuit.

a. Acetylcholine c. Dopamine

b. Serotonin d. Glutamate

Answer: c

Page(s) in Text: 343

Topic: Emotional Learning: Acquiring Evaluations

36. Developing a dislike for cigarettes after watching a video showing the effects of cigarettes on the lungs is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. observational learning c. evaluative learning

b. instrumental conditioning d. instructional learning

Answer: d

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Topic: Emotional Learning: Acquiring Evaluations

Question Type: applied, difficult

37. Developing a dislike for cigarettes after watching your uncle suffer from lung cancer is an example of \_\_\_\_\_\_\_\_\_\_\_\_.

a. autonomic conditioning c. instructional learning

b. instrumental conditioning d. observational learning

Answer: d

Page(s) in Text: 345

Topic: Emotional Learning: Acquiring Evaluations

Question Type: applied, difficult

38. You keep receiving campaign information about John Smith during election season. When you are filling out your ballot, you see John Smith’s name and vote for him because you feel you know him better than the other candidate. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. repetition priming c. instructional learning

b. mere exposure d. evaluative conditioning

Answer: b

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Topic: Emotional Learning: Acquiring Evaluations

39. Consolidation takes place in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. prefrontal cortex c. hippocampus

b. cerebellum d. amygdala

Answer: c

Page(s) in Text: 349

Topic: Emotion and Declarative Memory

40. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ can modulate the consolidation process by altering the storage of new memories.

a. hippocampus c. amygdala

b. cerebellum d. prefrontal cortex

Answer: c

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Topic: Emotion and Declarative Memory

41. Research has shown that emotional arousal can \_\_\_\_\_\_\_\_\_\_\_ memory.

a. provide false c. impair

b. enhance d. unchange

Answer: b

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Topic: Emotion and Declarative Memory

Question Type: factual, difficult

42. The inverted U suggests that memory is best under \_\_\_\_\_\_\_\_\_\_\_ levels of stress.

a. low and high c. low

b. moderate d. high

Answer: c

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Topic: Emotion and Declarative Memory

43. At a family reunion, you start laughing with your brother about a childhood memory. The two of you start recalling memory after memory of funny situations when you were kids. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. mood-congruent memory effects

b. autobiographical advantage

c. emotional priming

d. attitude bias

Answer: a

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Topic: Emotion and Declarative Memory

\*44. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to clear and vivid memories of surprising or consequential events.

a. Flashbulb memory c. Declarative memory

b. Historical memory d. Perceptual memory

Answer: a

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Topic: Emotion and Declarative Memory

45. Research using a cuing task has shown that emotions can \_\_\_\_\_\_\_\_\_\_\_ attention.

a. divert c. withdraw

b. hold d. divide

Answer: b

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Topic: Emotion, Attention, and Perception

46. In tasks that require the subject to ignore emotional information and attend to non-emotional information, emotion \_\_\_\_\_\_\_\_\_\_\_\_ performance; however, when subjects are required to attend to emotional information, emotion \_\_\_\_\_\_\_\_\_\_\_\_\_ performance.

a. enhances, impairs c. hinders, does not effect

b. does not affect, improves d. impairs, facilitates

Answer: d

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Topic: Emotion, Attention, and Perception

47. When looking for a face in the crowd, it is easier to find an angry face than a neutral or happy face. This is an example of the \_\_\_\_\_\_\_\_\_\_\_\_\_ effect.

a. valence-asymmetric c. pessimistic

b. depression-cognition d. negative-emotion

Answer: a

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Topic: Emotion, Attention, and Perception

48. Emotional words serving as the second target in an attentional blink task are \_\_\_\_\_\_\_\_\_ to be recognized compared to neutral words.

a. equally likely c. significantly less likely

b. somewhat less likely d. more likely

Answer: d

Page(s) in Text: 361

Topic: Emotion, Attention, and Perception

Question Type: factual, difficult

49. The idea that emotional information is processed automatically with fewer demands on cognitive processing compared to other types of stimuli is known as (the) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Wundt’s law c. affective primacy hypothesis

b. inverted-U d. emotion precedent effect

Answer: c

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Topic: Emotion, Attention, and Perception

50. Emotional information can facilitate the processing of visual information due to a neural connection between the \_\_\_\_\_\_\_\_\_\_\_\_ and the visual cortex.

a. hippocampus c. thalamus

b. amygdala d. superior colliculus

Answer: b

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Topic: Emotion, Attention, and Perception

**Short Answer**

51. State the difference between emotion and mood.

Answer: Emotions refer to relatively brief episodes of synchronized responses that indicate the evaluation of an internal or external event as significant, whereas moods refer to diffuse affective states (low intensity and long duration) of subjective feeling.

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Topic: Defining Emotion

52. Explain why Ekman concluded that anger, disgust, fear, happiness, sadness, and surprise are basic emotions.

Answer: Ekman showed pictures of emotional facial expressions of people from the United States to people in New Guinea and of people from New Guinea to people in the United States. People from both countries could identify the emotions expressed in the pictures. Since performance on the task was similar across cultures, Ekman concluded that the emotions were basic emotions that can be universally recognized.

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Topic: Defining Emotion

53. Describe the factors and organization of the circumplex model.

Answer: Arousal (activation and deactivation) and valence (unpleasant and pleasant) serve as the axes of the circumplex model. Emotions are then organized along those dimensions. Therefore, excited would be organized as an activation-pleasant emotion, relaxed as a deactivation-pleasant emotion, lethargic as a deactivation-unpleasant emotion, and nervous as an activation-unpleasant emotion.

Page(s) in Text: 331-332

Topic: Defining Emotion

54. Differentiate among Ekman’s basic emotions, Russell and Barrett’s circumplex model, and the approach-withdrawal model of emotion by identifying the underlying reasons for the inclusion of emotions in each model.

Answer: Ekman included emotions based on cross-cultural identification of facial expressions. The circumplex model is based on the combination of the arousal and valence associated with an emotion. The approach-withdrawal model is based on the motivation to either approach or withdraw from an object, event, or situation.

Page(s) in Text: 329-333

Topic: Defining Emotion

55. Use the skin conductance response to explain how a lie detection test works.

Answer: The skin conductance response (SCR) is one component of a lie detection test. To measure SCR, a small current is passed through electrodes placed on the fingers. Resistance to the current changes with changes in the amount an individual sweats. It is assumed that the guilt or anxiety associated with lying corresponds to increase resistance or a greater SCR response.

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Topic: Manipulating and Measuring Emotion

56. What does the double dissociation between direct and indirect measures of emotional learning indicate?

Answer: The double dissociation between direct and indirect measures of emotional learning indicates that there are two independent systems associated with emotional learning. One system involves awareness and relies on the hippocampus and declarative memory system. The other system does not require awareness. Instead, it is based on the conditioning of autonomic responses and involves the amygdala.

Page(s) in Text: 340-341

Topic: Emotion Learning: Acquiring Evaluations

57. Draw the inverted U and label it to explain the effects of arousal on test performance.

Answer: Students should draw a figure similar to Figure 8-11 with test performance on the y-axis and arousal on the x-axis. Low test scores should be associated with low (boredom) and high (overwhelmed) levels of arousal, with best scores associated with moderate levels of arousal.

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Topic: Emotion and Declarative Memory

58. Consolidation of information into long-term memory takes some time. Describe a benefit of a long consolidation process in relation to emotion.

Answer: If the amygdala is activated, it can modulate the storage of declarative memory (via the β–adrenergic system). Thus, one potential benefit of a long consolidation period is to allow time for the encoding of emotional information with declarative knowledge.

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Topic: Emotion and Declarative Memory

**Essay**

59. Briefly describe points on both sides of the debate of whether or not emotion can be experienced without cognitive appraisal.

Answer: Zajonc presented emotional stimuli subliminally so that participants were not aware of the stimuli. However, the stimuli influenced evaluations of subsequent neutral stimuli. Therefore, Zajonc argued that affective judgments can take place before cognition. Lazarus, on the other hand, argued that certain physiological changes can be associated with several different emotions; therefore, it is the cognitive appraisal of the situation and arousal that determines what emotion is.

Page(s) in Text: 326-327

Topic: The Connection

60. Provide an example to illustrate how classical conditioning and operant conditioning can combine to change behavior.

Answer: The examples will vary but, following the drug addition example provided in the text, the answer should include an action being rewarded (operant conditioning) and other stimuli being classically conditioned with the action. These classically conditioned stimuli then become prompting stimuli for additional action.

Page(s) in Text: 344-345

Topic: Emotional Learning: Acquiring Evaluations

61. Flashbulb memory implies “picture perfect” memory for an event. Is this an accurate description of memory for emotional public events? Support your answer.

Answer: Studies such as Neisser et al. (1992) indicate that people are much more confident in their memories for emotional public events than they are accurate. Although they can remember the public event, they become more inaccurate concerning their own connection to the event over time.

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Topic: Emotion and Declarative Memory

62. Describe how emotion can alter perceptual and attentional processing.

Answer: There are projections from the visual cortex to amygdala. When we see an emotional stimulus, the amygdala is activated. There are also projections from the amygdala to the visual cortex. When the amygdala is activated it can produce increased vigilance for threat-related stimuli. Research also suggests that emotion is associated with enhanced perception and that emotion has a similar effect on the areas of the brain responsible for processing perceptual information that attention has.

Page(s) in Text: 361-362

Topic: Emotion, Attention, and Perception

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 8 – Quick Quiz

1. The \_\_\_\_\_\_\_\_\_\_\_ is one of the main areas of the brain involved with emotional processing.

a. cerebellum c. amygdala

b. thalamus d. hippocampus

2. A(n) \_\_\_\_\_\_\_\_\_\_\_ is a brief episode of synchronized responses.

a. emotion c. mood

b. attitude d. motivation

3. \_\_\_\_\_\_\_\_\_\_\_ are generally diffuse affective states lasting for relatively long durations.

a. Moods c. Emotions

b. Attitudes d. Motivations

4. \_\_\_\_\_\_\_\_\_\_\_ are beliefs, preferences, and predispositions with an affective component toward an object or person.

a. Emotions c. Moods

b. Motivations d. Attitudes

5. A universal finding is one that is found across \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. development c. time

b. cultures d. methods

6. Whether an emotion is positive or negative characterizes its \_\_\_\_\_\_\_\_\_\_\_.

a. meaning c. expression

b. valence d. intensity

7. When you are angry, your \_\_\_\_\_\_\_\_\_\_\_\_ nervous system becomes active causing your heart rate to increase.

a. parasympathetic c. sympathetic

b. peripheral d. central

8. A shock is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ reinforcer and money is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ reinforcer.

a. negative, ambiguous c. conditioned, associated

b. primary, secondary d. primary, alternative

9. The \_\_\_\_\_\_\_\_\_\_\_\_ is associated with emotional learning involving declarative memory and awareness.

a. pulvinar c. amygdala

b. hippocampus d. thalamus

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to clear and vivid memories of surprising or consequential events.

a. Flashbulb memory c. Declarative memory

b. Historical memory d. Perceptual memory

Answer Key

Chapter 8 – Quick Quiz

1. Answer: c

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Topic: The Connection

2. Answer: a

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Topic: Defining Emotion

3. Answer: a

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Topic: Defining Emotion

4. Answer: d

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Topic: Defining Emotion

5. Answer: b

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Topic: Defining Emotion

6. Answer: a

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Topic: Defining Emotion

7. Answer: c

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Topic: Manipulating and Measuring Emotion

8. Answer: b

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Topic: Emotional Learning: Acquiring Evaluations

9. Answer: b

Page(s) in Text: 340-341

Topic: Emotional Learning: Acquiring Evaluations

10. Answer: a

Page(s) in Text: 353

Topic: Emotion and Declarative Memory

Chapter 9: Decision Making

**Multiple Choice**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involves the assessment of the courses of action and a determination of the course of action to take.

a. Problem solving c. A decision

b. Reasoning d. A judgment

Answer: c

Page(s) in Text: 367

Topic: The Nature of a Decision

\*2. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is based on the value of each option to an individual and the likely outcome of each option.

a. decision c. problem solution

b. judgment d. rationale

Answer: a

Page(s) in Text: 367

Topic: The Nature of a Decision

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ theories of decision making were initially developed by economists and mathematicians.

a. Normative c. Descriptive

b. Analytical d. Market-based

Answer: a

Page(s) in Text: 368

Topic: The Nature of a Decision

\*4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ theories of decision making tell us how we should behave while \_\_\_\_\_\_\_\_\_\_\_\_\_\_ theories focus on how we actually behave.

a. Conceptual, realistic c. Normative, prescriptive

b. Normative, descriptive d. Prescriptive, observational

Answer: b

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Topic: The Nature of a Decision

5. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a graphical display for summarizing the components of a decision.

a. options chart c. decision tree

b. contingency graph d. flow chart

Answer: c

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Topic: The Nature of a Decision

6. Your roommate likes to make difficult decisions by mapping optional courses of action, outcomes and consequences, and uncertain event contingencies. She likes to use \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. option charts c. flow charts

b. contingencies graphs d. decision trees

Answer: d

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Topic: The Nature of a Decision

7. \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ are known as the ABC’s of a decision.

a. Actions, beliefs, causes

b. Alternatives, beliefs, consequences

c. Actions, benefits, cognitions

d. Antecedents, beliefs, causes

Answer: b

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Topic: The Nature of a Decision

8. In decision making, a(n) \_\_\_\_\_\_\_\_\_\_ is our estimate of the likelihood that a particular outcome will occur if we choose a particular alternative.

a. option c. probability

b. belief d. consequence

Answer: b

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Topic: The Nature of a Decision

\*9. Consequences consist of \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_.

a. cost, benefits, efficacy c. rewards, punishments, additional options

b. outcomes, value, utility d. effort, expectations, usefulness

Answer: b

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Topic: The Nature of a Decision

10. Our evaluation of consequences is influenced by \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.

a. personality type, motivation c. theoretical outcomes, actual outcomes

b. situational demands, goals d. personal values, goals

Answer: d

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Topic: The Nature of a Decision

\*11. The likelihood of a desirable outcome is its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. value c. probability

b. expected utility d. contingency

Answer: b

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Topic: Rational Decision Making: The Expected Utility Model

12. Individual differences and circumstances influence \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. actual utility c. subjective utility

b. social utility d. expected utility

Answer: c

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Topic: Rational Decision Making: The Expected Utility Model

13. According to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model, expected utility is equal to the sum of the probability times the utility of each possible outcome.

a. decision probability c. economic decision

b. expected utility d. decision tree

Answer: b

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Topic: Rational Decision Making: The Expected Utility Model

14. The \_\_\_\_\_\_\_\_\_\_\_ pattern typical of selling price x subjective probability graphs of behavioral research on the expected utility model indicates that subjects determined selling price by multiplying probability and payoff.

a. curvilinear c. finger

b. fanning-out d. linear

Answer: b

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Topic: Rational Decision Making: The Expected Utility Model

15. The fanning-out pattern typical of selling price x subjective probability graphs of behavioral research on the expected utility model indicates that subjects determined selling price by multiplying \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frequency and payoff c. value and probability

b. probability and payoff d. consequences and value

Answer: b

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Topic: Rational Decision Making: The Expected Utility Model

16. Variance preferences are also known as \_\_\_\_\_\_\_\_\_\_\_\_.

a. wagering preferences c. gambling tendencies

b. payoff preferences d. risk attitudes

Answer: d

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Topic: Rational Decision Making: The Expected Utility Model

17. You have $1000 to invest. You invest the entire sum in blue chip stocks. You tend to be \_\_\_\_\_\_\_\_\_\_\_\_.

a. loss-averse c. impulsive

b. risk-seeking d. risk-adverse

Answer: d

Page(s) in Text: 376

Topic: Rational Decision Making: The Expected Utility Model

18. You have $1000 to invest. You invest the entire sum in a new technology company that you think is about ready to make it big. You tend to be \_\_\_\_\_\_\_\_\_\_\_\_.

a. risk-seeking c. risk-adverse

b. loss-adverse d. impulsive

Answer: a

Page(s) in Text: 376

Topic: Rational Decision Making: The Expected Utility Model

19. You have $1000 to invest. You place the sum in your savings account. You tend to be \_\_\_\_\_\_\_\_\_\_\_\_.

a. risk-adverse c. loss-averse

b. precautious d. risk-seeking

Answer: b

Page(s) in Text: 376

Topic: Rational Decision Making: The Expected Utility Model

20. Changes in the desirability of an outcome are measured in the \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. variance c. marginal utility

b. expectancy change score d. decision coefficient

Answer: c

Page(s) in Text: 376

Topic: Rational Decision Making: The Expected Utility Model

\*21. Utility curves are helpful for relating \_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_.

a. utility, value c. subjective evaluation, an objective measure

b. losses, gains d. normative, descriptive theories

Answer: c

Page(s) in Text: 376

Topic: Rational Decision Making: The Expected Utility Model

22. People prefer \_\_\_\_\_\_\_\_\_\_ when it comes to gains and \_\_\_\_\_\_\_\_\_\_\_ when it comes to losses.

a. impulsivity, cautiousness c. risk-seeking, risk-aversion

b. facts, chance d. certainty, uncertainty

Answer: d

Page(s) in Text: 377

Topic: Rational Decision Making: The Expected Utility Model

23. Suppose you just lost $500 playing poker. To compensate for this loss, research suggests that you would want to win at least \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. $1000 c. $500

b. $250 d. $750

Answer: a

Page(s) in Text: 377

Topic: Rational Decision Making: The Expected Utility Model

Question Type: applied, difficult

24. Sam buys an autographed picture of his favorite football player for $300 on eBay. Upon showing it off, he is offered $350 for it. Sam indicates that he could not possibly sell for less than $450. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. decision weights c. the endowment effect

b. loss aversion d. marginal utility

Answer: c

Page(s) in Text: 377-378

Topic: Rational Decision Making: The Expected Utility Model

25. In assessing deaths by mode of transportation, people will show a tendency to \_\_\_\_\_\_\_\_\_\_\_ the chance of dying in a plane crash and \_\_\_\_\_\_\_\_\_ the chance of dying in a car accident.

a. overestimate, underestimate

b. overestimate, accurately estimate

c. underestimate, overestimate

d. accurately estimate, underestimate

Answer: a

Page(s) in Text: 379

Topic: Rational Decision Making: The Expected Utility Model

26. If you conduct a single-cell recording study examining the activity associated with rewarded events when those events are rewarded, you are examining \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. expected utility c. decision utility

b. experienced utility d. marginal utility

Answer: b

Page(s) in Text: 380

Topic: Neural Bases of Expected Utility Calculations

Question Type: applied, difficult

27. Neurons in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the monkey brain are active when tracking the probability and magnitude of a reward.

a. lateral inferior parietal cortex c. amygdala

b. hypothalamus d. prefrontal cortex

Answer: a

Page(s) in Text: 380

Topic: Neural Bases of Expected Utility Calculations

Question Type: factual, difficult

\*28. The expected value or worth of an outcome at the time of decision is referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. decision utility c. marginal utility

b. expected utility d. experienced utility

Answer: a

Page(s) in Text: 381

Topic: Neural Bases of Expected Utility Calculations

\*29. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an area of the brain active when shifting attention in anticipation of a reward.

a. prefrontal cortex c. visual cortex

b. superior colliculus d. lateral inferior parietal cortex

Answer: b

Page(s) in Text: 381

Topic: Neural Bases of Expected Utility Calculations

Question Type: factual, difficult

\*30. Research with monkeys and humans has found that the \_\_\_\_\_\_\_\_\_\_\_\_ system in involved with the encoding of utility values in the brain.

a. epinephrine c. serotonin

b. acetylcholine d. dopamine

Answer: d

Page(s) in Text: 383

Topic: Neural Bases of Expected Utility Calculations

31. After an exam, you find out that you had a higher grade than Sam and that Sam had a higher grade than Rebecca. You correctly assume that you have a higher grade than Rebecca. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. procedural invariance c. rationality

b. transitivity d. intransitive choices

Answer: b

Page(s) in Text: 385

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

32. “Would you pay $3.75 for a gallon of gas?” and “How much would you be willing to pay for a gallon of gas?” are two ways of asking the same question about preferences. This is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. transitivity c. intransitive choices

b. dualism d. procedural invariance

Answer: d

Page(s) in Text: 386

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

33. Our capacities for \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_ limit our ability to think rationally.

a. attention, memory, emotion c. attention, working memory, executive control

b. perception, attention, memory d. attention, working memory, learning

Answer: c

Page(s) in Text: 387

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

34. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proposed the idea of bounded rationality.

a. Herbert Simon c. John Anderson

b. Daniel Kahneman d. Amos Tversky

Answer: a

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

35. Herbert Simon proposed the idea of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. marginal utility c. bounded rationality

b. procedural invariance d. heuristic-based decision making

Answer: c

Page(s) in Text: 388

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

\*36. Our ability to think rationally about information within our cognitive limitations is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. conscious processing c. executive functioning

b. counterfactual thinking d. bounded rationality

Answer: d

Page(s) in Text: 388

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

37. Coming up with an answer that is “good enough” is called (a) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. suitable solution c. bounded rationality

b. adequacy d. satisficing

Answer: d

Page(s) in Text: 388

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

38. Satisficing is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. optimum strategy c. heuristic

b. algorithm d. maximizing utility

Answer: b

Page(s) in Text: 388

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

39. \_\_\_\_\_\_\_\_\_\_\_ involves simplifying and combing some quantities and evaluation gains and losses in relation to a reference point.

a. Reduction theory c. Framing

b. Anchoring d. Comparative processing

Answer: c

Page(s) in Text: 392

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

40. Statements like “What are the odds of that ever happening” are consistent with \_\_\_\_\_\_\_\_\_\_\_\_.

a. decision affect theory c. temporal discounting

b. dynamic inconsistency d. fast-and-frugal strategies

Answer: c

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

41. One reason for dynamic inconsistency is that people tend to want \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. high magnitude rewards c. delayed rewards

b. immediate gratification d. consistent rewards

Answer: b

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

Question Type: factual, difficult

42. Compared to delayed choices, immediate choices tend to activate areas of the brain associated \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. motor response c. visual processing

b. emotion d. episodic memory

Answer: b

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

43. Our tendency to choose certainty over ambiguity was demonstrated with the \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Ellsberg paradox c. Allais paradox

b. Simon paradox d. judgment heuristic

Answer: b

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

44. When presented in isolation, the gambles used by Ellsberg produced \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. no effects of ambiguity c. increased effects of ambiguity

b. moderate ambiguity effects d. significant ambiguity effects

Answer: a

Page(s) in Text: 399

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

Question Type: factual, difficult

45. You are watching golf on TV with a friend. You see someone make a hole-in-one on a short par three hole. Your friend asks if you think anyone else will make a hole-in-one. You say yes. Why?

a. probability c. representativeness

b. availability bias d. common occurrence

Answer: b

Page(s) in Text: 400

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

46. Any time a 50 percent free throw shooter goes to the line you expect him to make a free throw and miss a free throw. This expectation is consistent with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. availability c. categorical bias

b. basketball intelligence d. representativeness

Answer: d

Page(s) in Text: 401

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

47. According to \_\_\_\_\_\_\_\_\_\_theory, an explicit list of multiple sources can change the likelihood with which we view an event.

a. support c. availability

b. elaboration d. uncertainty

Answer: a

Page(s) in Text: 402

Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

48. Patients with damage to the ventromedial prefrontal cortex, like Phineas Gage, have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. slurred speech c. a drop in overall intelligence

b. increased sociability d. impaired decision making

Answer: d

Page(s) in Text: 404

Topic: Complex, Uncertain Decision Making

49. Participants are asked to maximize their gain while selecting cards from four different decks in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Las Vegas Payoff task c. Iowa Gambling task

b. Missouri Riverboat task d. Wisconsin Card Sorting task

Answer: c

Page(s) in Text: 404

Topic: Complex, Uncertain Decision Making

50. Domasio argued that \_\_\_\_\_\_\_\_\_\_\_\_ warns us that important events are about to occur.

a. visual cues c. learned probabilities

b. somatic markers d. certainty

Answer: b

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Topic: Complex, Uncertain Decision Making

Question Type: factual, difficult

**Short Answer**

51. Contrast normative and descriptive theories of decision making.

Answer: Normative or prescriptive theories tell us how we should make decisions based on the weighting of relevant factors and rational choices. Descriptive theories, on the other hand, are based on how we actually make decisions.

Page(s) in Text: 368-369

Topic: The Nature of a Decision

52. Define consequences in terms of decision theory.

Answer: Consequences are the benefits or losses associated with a particular choice. Consequences can be described by their outcomes or results, value or worth, and utility or desirability.

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Topic: The Nature of a Decision

53. Briefly describe the equity premium paradox of investments.

Answer: In order to maximize gains, an investor should put his/her capital into the stock market which is relatively volatile but profitable. However, many investors choose to invest in low variability-low payoff investments like bonds. Research evidence suggests that loss aversion is why people avoid the more volatile stock market.

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Topic: Rational Decision Making: The Expected Utility Model

54. Define procedural invariance.

Answer: Procedural invariance refers to asking the same question in two ways. For instance, people can indicate their preferences by answering “Which of these two gambles would you prefer to play?” Another way to ask the same question is “How much would you be willing to pay to have an opportunity to play each of these gambles?” It is assumed that if you would be willing to choose a particular gamble that you would also be willing to pay more for that gamble as well.

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

55. Describe a situation in which a reversal of preference would likely occur.

Answer: When asked to choose between a high-probability event (e.g., 8/9 chance of winning $4; otherwise nothing) and a large return event (e.g., 1/9 chance of winning $40; otherwise nothing) research participants tend to choose the high-probability event. However, if participants assumed that they owned the rights to the events and were then asked to sell the events, they requested a higher amount for the large return event. [This example is based on the one used in the text. Students can vary from this but should include a high-probability event versus a high-return event.]

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

Question Type: applied, difficult

56. Describe elimination by aspects using a recent purchase you have made.

Answer: Elimination by aspects is a strategy for evaluating possible choices on a number of attributes to eliminate choices that do not meet the decision maker’s criteria. Examples will vary but need to include the desired criteria and a process by which different options were compared to the criteria in order to decide on the particular item purchased.

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

57. Use the Allais paradox to explain the behavior of contestants on game shows such as Deal or No Deal.

Answer: The Allais paradox emphasizes the role of anticipated regret in decision making. In Deal or No Deal, contestants eliminate cases from a field to identify the case with the million- dollar prize. They eliminate a certain number of cases per round. At the end of each round, a banker makes them an offer. They must choose between taking the offer or continue playing the game in hopes of winning one million dollars. In the early rounds, the banker makes low offers. Contestants always continue because they think they will win more money if they do so. Accepting a low offer at that point would be “devastating.” However, as contestants progress, the banker’s offers increase. Based on probabilities, these later offers are often greater than what the contestants are likely to win yet they continue to play. In these later rounds, especially after the $1,000,000 has been eliminated, contestants continue because the consequences feel about the same so they opt for the higher expected value.

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

Question Type: applied, difficult

58. In what way does the process of decision making change under decision affect theory?

Answer: According to decision affect theory, anticipated emotions, such as regret and disappointment, replace utilities as the carriers of value. As a result, decisions are made on emotion instead of monetary outcomes or probabilities.

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

**Essay**

59. Provide an example, in terms of the expected utility model, to illustrate how different decisions have different values for different people.

Answer: The examples will vary across students. However, all responses should include the expected utility, probabilities of possible outcomes, and utility of each possible outcome..

Page(s) in Text: 372-374

Topic: Rational Decision Making: The Expected Utility Model

60. Draw a utility curve and state the important features of decision making represented by the curve.

Answer: Students should reproduce Figure 9-4. The important features of decision making represented by the curve include (1) there is a minimal marginal utility effect represented by the flattening of the curve, and (2) loss aversion is represented in the curve by the steeper slope of the loss compared to the gains portion of the curve.

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Topic: Rational Decision Making: The Expected Utility Model

61. Describe the adaptive decision maker model being sure to include factors influencing the strategies used to make choices.

Answer: The assumption of the adaptive decision maker model is that people are adaptive in choosing strategies for decision making based on the trade-off of cognitive effort, ease of execution, time, and consequences. The strategies available to them form a “cognitive toolbox” that includes satisficing, elimination by aspects, heuristics, and expected utility calculations. Important decisions require the use of more cognitively demanding algorithms while less important decisions often use fast-and-frugal strategies. This model provides a more valid description of how people make decisions than the expected utility model alone.

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

62. Describe the stages of processing associated with prospect theory.

Answer: Prospect theory assumes that our decisions are based upon our perception of the situation. Therefore, the first step in decision making is comprehending potential prospects by framing the terms of the decision. Framing involves simplifying and combining some quantities and evaluating prospective gains and losses in relation to a reference point. The reference point is usually the current situation but is free to vary (i.e., it is not fixed). Once the values and decision weights are determined for each potential prospect, we calculate the expected-value of each prospect in order to select one prospect.

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 9 – Quick Quiz

1. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is based on the value of each option to an individual and the likely outcome of each option.

a. decision c. problem solution

b. judgment d. rationale

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ theories of decision making tell us how we should behave while \_\_\_\_\_\_\_\_\_\_\_\_\_\_ theories focus on how we actually behave.

a. Conceptual, realistic c. Normative, prescriptive

b. Normative, descriptive d. Prescriptive, observational

3. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a graphical display for summarizing the components of a decision.

a. options chart c. decision tree

b. contingency graph d. flow chart

4. Consequences consist of \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_.

a. cost, benefits, efficacy c. rewards, punishments, additional options

b. outcomes, value, utility d. effort, expectations, usefulness

5. The likelihood of a desirable outcome is its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. value c. probability

b. expected utility d. contingency

6. Utility curves are helpful for relating \_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_.

a. utility, value c. subjective evaluation, an objective measure

b. losses, gains d. normative, descriptive theories

7. The expected value or worth of an outcome at the time of decision is referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. decision utility c. marginal utility

b. expected utility d. experienced utility

8. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an area of the brain active when shifting attention in anticipation of a reward.

a. prefrontal cortex c. visual cortex

b. superior colliculus d. lateral inferior parietal cortex

9. Research with monkeys and humans has found that the \_\_\_\_\_\_\_\_\_\_\_\_ system in involved with the encoding of utility values in the brain.

a. epinephrine c. serotonin

b. acetylcholine d. dopamine

10. Our ability to think rationally about information within our cognitive limitations is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. conscious processing c. executive functioning

b. counterfactual thinking d. bounded rationality

Answer Key

Chapter 9 – Quick Quiz

1. Answer: a

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Topic: The Nature of a Decision

2. Answer: b

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Topic: The Nature of a Decision

3. Answer: c

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Topic: The Nature of a Decision

4. Answer: b

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Topic: The Nature of a Decision

5. Answer: b

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Topic: Rational Decision Making: The Expected Utility Model

6. Answer: c

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Topic: Rational Decision Making: The Expected Utility Model

7. Answer: a

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Topic: Neural Bases of Expected Utility Calculations

8. Answer: b

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Topic: Neural Bases of Expected Utility Calculations

Question Type: factual, difficult

9. Answer: d

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Topic: Neural Bases of Expected Utility Calculations

10. Answer: d

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Topic: Human Decision Making and the Expected Utility Model: How Close a Fit?

Chapter 10: Problem Solving and Reasoning

**Multiple Choice**

\*1. Problems exist when there are \_\_\_\_\_\_\_\_\_\_\_ to reaching a goal.

a. incentives c. obstacles

b. penalties d. clear paths

Answer: c

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Topic: The Nature of Problem Solving

2. At the beginning of a problem, you are at the \_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is where you want to be.

a. initial state, goal state c. start state, end state

b. problem origin, concluding state d. initiation phase, final phase

Answer: a

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Topic: The Nature of Problem Solving

\*3. \_\_\_\_\_\_\_\_\_\_\_\_\_ are actions that you can take to get from the start state to the problem solution.

a. Operations c. Solution steps

b. Behaviors d. Procedures

Answer: a

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Topic: The Nature of Problem Solving

\*4. Problems with clearly defined start states and goal states are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems.

a. unambiguous c. easy-to-solve

b. well-defined d. understandable

Answer: b

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Topic: The Nature of Problem Solving

5. A general manager trying to make his team more competitive for a championship run is faced with a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ problem.

a. performance c. ill-defined

b. practical d. multi-solution

Answer: a

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Topic: The Nature of Problem Solving

6. Anagrams are examples of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems.

a. word-related c. general

b. vocabulary d. insight

Answer: a

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Topic: The Nature of Problem Solving

7. The problem space includes the start state, goal state, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. moves that lead to a correct solution

b. all possible intermediate states

c. heuristics

d. algorithms

Answer: a

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Topic: The Nature of Problem Solving

8. A negotiator trying to resolve conflict in the Middle East may \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. use heuristics c. have multiple initial states

b. use more than one problem space d. not be able to use operations

Answer: a

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Topic: The Nature of Problem Solving

\*9. Heuristics are \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. used infrequently c. problem-solving errors

b. rules of thumb d. guaranteed solutions

Answer: b

Page(s) in Text: 417

Topic: The Nature of Problem Solving

10. Heuristics : usually right :: algorithms : \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. sometime right c. usually right

b. never right d. always right

Answer: d

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Topic: The Nature of Problem Solving

\*11. If you guess until you get it right, you are using the \_\_\_\_\_\_\_\_\_\_\_\_\_ heuristic.

a. guess and check c. generate and go

b. random search d. hope and test

Answer: b

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Topic: The Nature of Problem Solving

12. The \_\_\_\_\_\_\_\_\_\_\_\_ heuristic involves looking one step ahead and picking an operation that ends in a state most resembling the goal.

a. next more c. hill climbing

b. rung at a time d. baby step

Answer: c

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Topic: The Nature of Problem Solving

13. You want to go to graduate school to become a cognitive psychologist. In order to gain acceptance, you develop several subgoals. You work to get a 3.90 GPA in your major and at least a 3.50 GPA overall. You also start working with faculty members on research so that you can gain research experience and so they can get to know you better and write better letters of recommendation. You take a GRE course as well to help maximize your GRE scores. What kind of heuristic did you use to develop this plan?

a. hill climbing c. random search

b. means-end analysis d. protocol analysis

Answer: b

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Topic: The Nature of Problem Solving

14. Which of the following is not a method used to investigate problem solving?

a. recording behavior c. verbal protocol analysis

b. discourse analysis d. computer modeling

Answer: b

Page(s) in Text: 419-421

Topic: The Nature of Problem Solving

\*15. Damage to what area of the brain is associated with repeating the same mistakes during problem solving?

a. occipital lobes c. parietal lobes

b. frontal lobes d. temporal lobes

Answer: b

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Topic: The Nature of Problem Solving

16. Novices tend to organize information according to \_\_\_\_\_\_\_\_\_\_\_. Experts organize information according to \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. operations, abstract principles c. order of presentation, subgoals

b. similarities, subgoals d. surface features, abstract principles

Answer: d

Page(s) in Text: 423

Topic: The Nature of Problem Solving

\*17. In general, experts are better at \_\_\_\_\_\_\_\_\_\_ pieces of information than novices.

a. incorporating c. comprehending

b. selecting d. chunking

Answer: d

Page(s) in Text: 423-424

Topic: The Nature of Problem Solving

Question Type: factual, difficult

18. A skilled clinical psychologist will likely use a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ to diagnose a client. A new graduate student in clinical psychology will likely use a \_\_\_\_\_\_\_\_\_\_\_\_.

a. forward search, backward search c. top-down process, bottom-up process

b. algorithm, heuristic d. means-end analysis, hill climbing approach

Answer: a

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Topic: The Nature of Problem Solving

\*19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involves applying knowledge from a relatively known source domain to another target domain.

a. Forward search c. Analogical reasoning

b. A mapping heuristic d. Comparison

Answer: c

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20. In analogical reasoning, holding a target in working memory while accessing a more familiar source from long-term memory is called \_\_\_\_\_\_\_\_\_\_\_\_.

a. comparison coding c. retrieval

b. forward searching d. temporary filing

Answer: c

Page(s) in Text: 425

21. Aligning like features between source and target in working memory is known as \_\_\_\_\_\_\_\_\_\_\_.

a. comparing c. evaluating

b. mapping d. assessing

Answer: b

Page(s) in Text: 426

22. Determining whether or not an analogy is useful is \_\_\_\_\_\_\_\_\_\_\_\_.

a. executive processing c. decision making

b. estimation d. evaluation

Answer: d

Page(s) in Text: 426

23. Abstraction involves \_\_\_\_\_\_\_\_\_\_\_ the structure shared by the source and the target.

a. isolating c. analyzing

b. evaluating d. generalizing

Answer: a

Page(s) in Text: 426

24. Developing hypotheses about the target from the source is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. abstracting c. predicting

b. inference making d. estimating

Answer: c

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\*25. Regarding analogical reasoning, SMT stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. structured mapping theory c. successful mental transfer

b. superficial mapping theory d. simulated mathematics theory

Answer: a

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26. In the \_\_\_\_\_\_\_\_ model, long-term memory is first searched for features in the target and resulting matches are then evaluated.

a. HAM c. SAM

b. SMT d. LISA

Answer: b

Page(s) in Text: 427

27. The \_\_\_\_\_\_\_\_\_ model is based on activated nodes within a network.

a. LISA c. SOAR

b. SMT d. ACT-R

Answer: a

Page(s) in Text: 427-428

28. Neuroimaging studies suggest that analogical reasoning \_\_\_\_\_\_\_\_\_\_\_\_\_\_ areas associated with working memory.

a. uses brain areas in addition to c. uses the same

b. increases activation of the d. is unrelated to the

Answer: a

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29. If a cyclist is found to be guilty of blood doping and you conclude the all cyclists engage in blood doping practices, you have made a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. specific induction c. broad-based induction

b. general induction d. universal induction

Answer: b

Page(s) in Text: 429

Topic: Inductive Reasoning

30. You attend a basketball game with your roommate for the first time. He heckles the visiting team from behind the bench. After the game he asks if you want to see the next game with him too. You decline because you don’t want to be embarrassed at the next game. Your decision was based on (a) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. analogical reasoning c. emotional reasoning

b. general induction d. specific induction

Answer: d

Page(s) in Text: 429

Topic: Inductive Reasoning

31. When trying to discover a rule, as in *Mastermind*, which type of rule is the most difficult to discover?

a. disjunctive rules c. conjunctive rules

b. negative disjunctive rules d. negative conjunctive rules

Answer: b

Page(s) in Text: 431

Topic: Inductive Reasoning

Question Type: factual, difficult

32. While playing the game *Guess Who?* you ask if the person is a female to determine the sex of the target. You are engaging in \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. sequential elimination c. focus gambling

b. progressive elimination d. successive scanning

Answer: d

Page(s) in Text: 431

Topic: Inductive Reasoning

33. You are playing *Clue*. You believe that Miss Scarlet committed the murder with a revolver but you are not sure about the room. As you move from room to room, you ask the same question – “the Professor with a rope in the \_\_\_\_\_\_\_\_\_\_.” What strategy are you using?

a. successive scanning c. focus gambling

b. feature gathering d. systematic induction

Answer: c

Page(s) in Text: 431

Topic: Inductive Reasoning

Question Type: applied, difficult

34. The 2-4-6 task shows that most people try to find \_\_\_\_\_\_\_\_\_\_\_\_ evidence to test the accuracy of their hypotheses.

a. supporting c. random

b. disconfirming d. significant

Answer: a

Page(s) in Text: 432

Topic: Inductive Reasoning

35. When someone finds that her hypothesis is not supported, she is more likely to look at \_\_\_\_\_\_\_\_\_\_\_ evidence.

a. random c. disconfirming

b. supporting d. significant

Answer: c

Page(s) in Text: 432

Topic: Inductive Reasoning

\*36. With category-based inductions, the starting fact is the \_\_\_\_\_\_\_\_\_\_ and the inference is the \_\_\_\_\_\_\_\_\_\_.

a. hypothesis, conclusion c. initial state, goal state

b. category, induction d. premise, conclusion

Answer: d

Page(s) in Text: 432

Topic: Inductive Reasoning

37. Patients with damage to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have difficulty switching rules in the Wisconsin Card Sort test.

a. right dorsomedial prefrontal cortex c. left dorsomedial prefrontal cortex

b. right dorsolateral prefrontal cortex d. left dorsolateral prefrontal cortex

Answer: d

Page(s) in Text: 434

Topic: Inductive Reasoning

Question Type: factual, difficult

38. In addition to the working memory areas, inductive reasoning tasks also activate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which is important for long-term memory.

a. superior parietal lobes c. lateral temporal lobes

b. medial temporal lobes d. inferior parietal lobes

Answer: b

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Topic: Inductive Reasoning

Question Type: factual, difficult

39. Neuroimaging studies indicate that inductive reasoning tasks use both \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. perceptual processes, executive functions c. working memory, long-term memory

b. perceptual processes, long-term memory d. working memory, executive functions

Answer: c

Page(s) in Text: 435

Topic: Inductive Reasoning

Question Type: factual, difficult

40. A difference between inductive and deductive reasoning is that if the premises are true in deductive reasoning the \_\_\_\_\_\_\_\_\_\_\_\_.

a. conclusion is always positive c. conclusion cannot be false.

b. conclusion cannot be negative d. solution is easy

Answer: c

Page(s) in Text: 437

41. A syllogism consists of \_\_\_\_\_\_\_\_\_ arguments and \_\_\_\_\_\_\_\_\_\_ conclusion(s).

a. two or more, one c. four, two

b. two, one d. two or three, one

Answer: b

Page(s) in Text: 437

42. Combining the terms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ leads to four types of statements concerning the relationship between two categories.

a. positive, negative, always and never c. universal and particular

b. universal, particular, affirmative and negative d. all, no, and some

Answer: b

Page(s) in Text: 438

43. The relationship between categories in a statement is often represented using a \_\_\_\_\_\_\_\_\_\_.

a. Venn diagram c. pie chart

b. bar graph d. probability distribution

Answer: a

Page(s) in Text: 438

44. There are a total of \_\_\_\_\_\_\_ syllogisms using all combinations of qualifiers for two premises and one conclusion. Only \_\_\_\_ of these syllogisms are valid.

a. 512, 27 c. 216, 108

b. 36, 30 d. 520, 36

Answer: a

Page(s) in Text: 439

Question Type: factual, difficult

45. In a syllogism, words like \_\_\_\_\_\_\_\_\_\_\_\_\_ are known as qualifiers.

a. affirmative or negative c. universal or particular

b. all or some d. valid or invalid

Answer: b

Page(s) in Text: 439

46. “If p then q” is a premise for a \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. categorical syllogism c. likelihood syllogism

b. probability-based syllogism d. conditional syllogism

Answer: d

Page(s) in Text: 439

47. A common conditional reasoning task is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Wason selection task c. belief-bias task

b. Venn diagramming task d. content-free logic task

Answer: a

Page(s) in Text: 439

48. People perform \_\_\_\_\_\_\_\_\_\_ on abstract selection tasks.

a. remarkably well c. moderately well

b. perfectly d. poorly

Answer: d

Page(s) in Text: 440

49. People make errors evaluating syllogisms by being too influenced with either the \_\_\_\_\_\_\_\_\_\_ or the \_\_\_\_\_\_\_\_\_\_ of the syllogism.

a. category, condition c. form, content

b. universality, valence d. type, form

Answer: b

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50. If both premises use the qualifier “no”, then people are likely to say that a conclusion with the qualifier “no” is valid. This tendency is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. response bias effect c. consistency effect

b. atmosphere effect d. perseveration effect

Answer: b

Page(s) in Text: 441

51. Accepting a conclusion as valid if it has the syntactic structure of the premises is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. surface structure effect c. matching bias

b. belief-bias effect d. grammar rule

Answer: c

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52. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reflects the tendency to accept conclusions to a syllogism that seem right.

a. belief-bias effect c. reasonable conclusion effect

b. gullibility effect d. rational rule

Answer: a

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**Short Answer**

53. Describe the initial and goals states and the operations for the Tower of Hanoi task.

Answer: For the Tower of Hanoi task, three disks are placed on one peg (initial state). The disks differ in size with the largest on the bottom and the smallest on the top. The disks can go on one of three pegs. You need to move the disks from peg 1 to peg 3 (goal state). You can only move one disk at a time and you cannot place a larger disk on top of a smaller disk (operations).

Page(s) in Text: 414

Topic: The Nature of Problem Solving

54. Three heuristics for problem solving were presented in the text. Choose two heuristics and explain how they are different.

Answer: With the random search (or generate and test) heuristic, the problem solver picks moves and evaluates the outcome on a trial and error basis. With the hill climbing heuristic, she looks one step ahead and picks the move that most closely resembles the goal state. With means-ends analysis, the problem is broken down into subproblems until a solution to the subproblem is found.

Page(s) in Text: 417-419

Topic: The Nature of Problem Solving

55. Briefly describe the SMT model.

Answer: Structure mapping theory (SMT) has two stages. In the first stage, long-term memory is searched for potential sources that have features similar to the target. This is a relatively broad search based on surface features. In the second stage, the matches between the source and target found from the first stage are evaluated for structural similarities.

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56. Briefly describe the LISA model.

Answer: Learning and inference with schemas and analogies (LISA) is a neural-network model of analogical reasoning in which sources and targets are nodes in a network. As target information is activated in working memory, similar features are activated in long-term memory.

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57. How is working memory involved in analogical reasoning?

Answer: Analogical reasoning requires working memory. Neuroimaging studies show that the prefrontal cortex (middle frontal cortex and anterior frontal gyrus) and inferior parietal cortex are active in analogical reasoning tasks. These areas of the brain are associated with working memory and attention. However, when working memory load is increased, additional activation occurs in the left anterior prefrontal cortex suggesting that additional brain areas can be recruited for processing analogies.

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58. Explain the similarity-coverage model.

Answer: The similarity-coverage model accounts for general and specific inductions. Similarity, in this model, is the average maximum similarity between instances in the premises and exemplars in the conclusion. The greater the coverage of these similarities, the stronger the argument is perceived to be.

Page(s) in Text: 434

59. Give an example of a categorical syllogism with its corresponding Venn diagrams.

Answer: Examples will vary but students should incorporate the Venn diagrams on page 438.

Page(s) in Text: 437-438

60. Describe the Wason selection task.

Answer: In a typical Wason selection task, a participant would be given four cards. The cards might display an A, D, 4, and 7. A rule is given as well. The rule may be that “If a card has a vowel on one side, then it has an even number of the other side.” The purpose of the task is to examine how the rule is validated. In general, participants tend to confirm the rule by turning over the A and 4 cards. The 7 card, however, allows participants to examine the negative of the if-then statement making it a better card than the 4 for testing the rule.

Page(s) in Text: 439-440

**Essay**

61. Using the water jug problem, demonstrate how the hill climbing heuristic can lead to incorrect solutions.

Answer: The water jug problem has three jugs of differing sizes (8, 5, and 3 ounces). The large jug is full. You need to transfer water between the jugs to reach a goal state of 4 ounces of water in the large and medium jugs. When you pour water into a jug you must fill the jug. With the hill climbing heuristic, each move most closely resembles the goal state. In the water jug problem, this would mean filling the medium jug, giving you 3 ounces in the large jug and 5 ounces in the medium jug. If you make this move, however, your next move cannot get you closer to the goal state.

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62. Describe the problem space for blackjack.

Answer: The initial state in black jack is that you are dealt two cards. The goal state is that you want your cards to total 21 (or at least total more than the dealer). In regard to operations, you can hit, or ask for another card, hold when you do not want any more cards, and you can count an ace as either 1 or 11 points. These are the basic operations, although the game can be explained to include other moves such as doubling down, etc.

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63. Define the five subprocesses of analogical reasoning.

Answer: Retrieval is holding a target in working memory while accessing a similar, more familiar, example from long-term memory. Mapping requires holding both the source and the target in working memory, aligning the source and the target and mapping the features of the source onto the target. Evaluation is deciding whether or not the analogy is likely to be useful. Abstraction is isolating the structure shared by the source and the target. Finally, predictions is a subprocess in which hypotheses are developed about the behavior.

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64. Describe your strategy for the game of Clue in terms of inductive reasoning.

Answer: In Clue, you need to determine who committed a murder, the instrument used to commit the deed, and the room it was committed in. Who, what, and where essentially form a rule that you are trying to determine. As you find clues, you gradually narrow down the options. This is consistent with successive scanning. Once you are reasonably sure about who, for instance, you may hold that clue constant while continuing to gather information about other parts of the rule. This is similar to focus gambling.

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Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 10 – Quick Quiz

1. Problems exist when there are \_\_\_\_\_\_\_\_\_\_\_ to reaching a goal.

a. incentives c. obstacles

b. penalties d. clear paths

2. \_\_\_\_\_\_\_\_\_\_\_\_\_ are actions that you can take to get from the start state to the problem solution.

a. Operations c. Solution steps

b. Behaviors d. Procedures

3. Problems with clearly defined start states and goal states are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems.

a. unambiguous c. easy-to-solve

b. well-defined d. understandable

4. Heuristics are \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. used infrequently c. problem solving errors

b. rules of thumb d. guaranteed solutions

5. If you guess until you get it right, you are using the \_\_\_\_\_\_\_\_\_\_\_\_\_ heuristic.

a. guess and check c. generate and go

b. random search d. hope and test

6. Damage to what area of the brain is associated with repeating the same mistakes during problem solving?

a. occipital lobes c. parietal lobes

b. frontal lobes d. temporal lobes

7. In general, experts are better at \_\_\_\_\_\_\_\_\_\_ pieces of information than novices.

a. incorporating c. comprehending

b. selecting d. chunking

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involves applying knowledge from a relatively known source domain to another target domain.

a. Forward search c. Analogical reasoning

b. A mapping heuristic d. Comparison

9. Regarding analogical reasoning, SMT stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. structured mapping theory c. successful mental transfer

b. superficial mapping theory d. simulated mathematics theory

10. With category-based inductions, the starting fact is the \_\_\_\_\_\_\_\_\_\_ and the inference is the \_\_\_\_\_\_\_\_\_\_.

a. hypothesis, conclusion c. initial state, goal state

b. category, induction d. premise, conclusion

Answer Key

Chapter 10 – Quick Quiz

1. Answer: c

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Topic: The Nature of Problem Solving

2. Answer: a

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Topic: The Nature of Problem Solving

3. Answer: b

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Topic: The Nature of Problem Solving

4. Answer: b

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Topic: The Nature of Problem Solving

5. Answer: b

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Topic: The Nature of Problem Solving

6. Answer: b

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Topic: The Nature of Problem Solving

7. Answer: d

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Topic: The Nature of Problem Solving

Question Type: factual, difficult

8. Answer: c

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9. Answer: a

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10. Answer: d

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Topic: Inductive Reasoning

Chapter 11: Motor Cognition and Mental Simulation

**Multiple Choice**

\*1. A(n) \_\_\_\_\_\_\_\_\_\_\_ is a series of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. perception-action cycle, actions c. action, movements

b. movement, motor programs d. motor cognition, intentions

Answer: c

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Topic: The Nature of Motor Cognition

2. The processing associated with the motor system in which stored information is used to plan and produce actions and to anticipate, predict, and interpret the actions of others is (a/an) \_\_\_\_\_\_\_\_\_\_.

a. motor cognition c. action-interpretation coordination

b. perception-action cycle d. output analysis

Answer: a

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Topic: The Nature of Motor Cognition

3. You are playing catch with a friend who throws the ball a little high. Adjusting your glove hand to the height of the ball is an illustration of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the perception-action cycle c. interactive motor programming

b. muscular adjustment d. intentions

Answer: a

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Topic: The Nature of Motor Cognition

\*4. \_\_\_\_\_\_\_\_\_\_\_\_ link perception and action.

a. Attention c. Intentions

b. Representations d. Consequences

Answer: b

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Topic: The Nature of Motor Cognition

5. Specific movements are processed in \_\_\_\_\_\_\_\_.

a. SMA c. M1

b. MT d. PM

Answer: c

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Topic: The Nature of Motor Cognition

\*6. Less precise movements are processed in \_\_\_\_\_\_.

a. SM A c. MT

b. M1 d. PM

Answer: d

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Topic: The Nature of Motor Cognition

\*7. Overarching plans for action are processed in \_\_\_\_\_\_.

a. PM c. M1

b. SMA d. MT

Answer: b

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Topic: The Nature of Motor Cognition

8. Single-cell recordings of a visually or internally triggered sequential motor task revealed that neurons in \_\_\_\_\_\_\_ are just as active during the visually and internally triggered task, neurons in \_\_\_\_\_\_\_\_ were more active during the internally triggered task, and neurons in \_\_\_\_\_\_\_ were more active during the visually triggered task.

a. SMA, M1, PM c. PM. SMA, M1

b. M1, SMA, PM d. M1, MT, PM

Answer: b

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Topic: The Nature of Motor Cognition

Question Type: factual, difficult

\*9. Representing actions made by other people is accomplished by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. perception-action cycles c. vicarious motor programs

b. shared motor representations d. action association schemas

Answer: b

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Topic: The Nature of Motor Cognition

10. You are helping coach a Little League team. You notice that your players have a better batting stance and swing after you demonstrate the proper technique. What is a possible explanation for this observation?

a. motor imagery c. vicarious learning

b. PM processing d. motor priming

Answer: d

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Topic: Mental Simulation and the Motor System

11. A representation of a sequence of movements planned in advance of an actual performance is a \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. motor schema c. movement routine

b. motor program d. motor habit

Answer: b

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Topic: Mental Simulation and the Motor System

\*12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ takes place after a stimulus is identified and before a response is executed.

a. Motor imagery c. Motor anticipation

b. Motor priming d. Intentions

Answer: c

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Topic: Mental Simulation and the Motor System

13. Areas of the brain involved in motor anticipation include the SMA, parietal cortex, \_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_.

a. occipital cortex, cerebellum c. thalamus, PM

b. thalamus, cerebellum d. M1, PM

Answer: b

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Topic: Mental Simulation and the Motor System

14. Neuroimaging research suggests that the same representations underlying our motor programs are also involved with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. muscle memory c. perception

b. anticipating actions of others d. problem solving

Answer: c

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Topic: Mental Simulation and the Motor System

15. Yue and Cole (1992) showed that motor imagery training can \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. improve dexterity c. facilitate decision making

b. increase muscle strength d. replace practice

Answer: b

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Topic: Mental Simulation and the Motor System

16. The amount of time it takes you to walk to your favorite coffee shop using imagery is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the amount of time it actually takes you to walk to the coffee shop.

a. significantly greater than c. significantly less than

b. equal to d. proportional to

Answer: b

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Topic: Mental Simulation and the Motor System

17. The neural difference between motor performance and motor imagery is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. negligible c. moderate

b. negative d. positive

Answer: b

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Topic: Mental Simulation and the Motor System

18. A researcher asks you to use imagery to drive from campus to your home and records the time it takes you to complete the task. She then asks you to use imagery to drive from campus to your home with poor visibility conditions due to a dense fog. How long will it take you to perform the second task?

a. more time than normal driving conditions c. same path so no change in imagery time

b. less time because of practice effects d. more time due to imagery fatigue

Answer: a

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Topic: Mental Simulation and the Motor System

Question Type: applied, difficult

19. If you used mental imagery to run across campus, you would probably experience an increase in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. parasympathetic nervous system c. autonomic nervous system

b. endocrine system d. temperature regulation system

Answer: c

Page(s) in Text: 461

Topic: Mental Simulation and the Motor System

\*20. The \_\_\_\_\_\_\_\_\_\_\_\_ is activated whether you are imagining yourself dunking a basketball or imagined your friend dunking a basketball.

a. somatosensory cortex c. premotor cortex

b. posterior cingulate d. frontopolor cortex

Answer: c

Page(s) in Text: 461

Topic: Mental Simulation and the Motor System

Question Type: factual, difficult

21. Activation of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ corticies indicates that we are imagining about others instead of ourselves.

a. inferior temporal, SMA

b. right inferior parietal, frontopolar

c. SMA, prefrontal

d. occipital, posterior cingulated

Answer: b

Page(s) in Text: 462

Topic: Mental Simulation and the Motor System

Question Type: factual, difficult

22. It takes longer to determine whether or not two geometric objects in a pair are identical or mirror images the more one object in the pair is rotated in \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_.

a. space, time c. 2D, orientation

b. perspective, to the right d. the picture-plane, depth

Answer: d

Page(s) in Text: 463

Topic: Mental Simulation and the Motor System

\*23. \_\_\_\_\_\_\_\_\_\_\_\_ is the tendency to adopt the behaviors, postures, or mannerisms of others without awareness or intent.

a. Mimicry c. Imitation

b. Simulation d. Mockery

Answer: a

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Topic: Mental Simulation and the Motor System

\*24. \_\_\_\_\_\_\_\_\_\_\_ is the ability to understand the intent of an observed action and then to reproduce it.

a. Mockery c. Imitation

b. Mimicry d. Impersonation

Answer: c

Page(s) in Text: 464

Topic: Mental Simulation and the Motor System

25. A basketball player from China, who does not speak English, is drafted by an NBA team. During practice he intently watches his coaches and other players so he can \_\_\_\_\_\_\_\_\_\_ what he is being instructed.

a. imitate c. mimic

b. mock d. impersonate

Answer: a

Page(s) in Text: 464

26. A toddler will imitate the behavior of a(n) \_\_\_\_\_\_\_\_\_\_ but not the identical behavior of a(n) \_\_\_\_\_\_\_\_\_\_.

a. relative, stranger c. adult, toddler

b. person, robot d. toddler, mirror image

Answer: b

Page(s) in Text: 466

27. An infant is more likely to imitate giving a bottle to a teddy bear than to a pillow, suggesting that they will tend to only imitate behavior that is \_\_\_\_\_\_\_\_\_\_\_\_.

a. plausible c. adaptive

b. biological d. nurturing

Answer: a

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28. You are a consultant to a television production company that creates shows for children. They are trying to decide on the type of main character they should have for a new show. Based on research by Meltzoff, you tell them that toddlers are more likely to imitate a behavior if it modeled by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. an adult c. Barney the dinasour

b. a backyardigans d. a robot with high contrast colors

Answer: a

Page(s) in Text: 466

\*29. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ distinguish(es) imitation from mimicry.

a. Attention c. Goals

b. Intention d. Practice

Answer: b

Page(s) in Text: 467

30. What area of the brain is more active when you observe a behavior with the intention to imitate it later?

a. visual cortex c. parahippocampal gyrus

b. inferior temporal cortex d. supplementary motor area

Answer: d

Page(s) in Text: 467-468

31. A neurological disorder that impairs the ability to make voluntary movements is \_\_\_\_\_\_\_\_\_\_\_.

a. aphasia c. ataxia

b. apraxia d. agnosia

Answer: b

Page(s) in Text: 468

Question Type: factual, difficult

32. People with apraxia often have \_\_\_\_\_\_\_\_\_\_\_\_ dysfunction in addition to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dysfunction.

a. visual, imitation c. attentional, planning

b. memory, hearing d. language, voluntary movement

Answer: d

Page(s) in Text: 468

33. When imitating behavior, the means of the behavior (operator) is processed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. parahippocampal gyrus c. medial prefrontal cortex

b. inferior temporal cortex d. supplementary motor area

Answer: c

Page(s) in Text: 469

Question Type: factual, difficult

34. When imitating behavior, the goals of the behavior (goal state) are processed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. left premotor cortex c. parahippocampal gyrus

b. inferior temporal cortex d. dorsolateral PFC

Answer: a

Page(s) in Text: 469

Question Type: factual, difficult

35. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ region of the brain is active when imitating only the means of another’s behavior as well as when inferring the intentions of others.

a. left frontal c. right medial prefrontal

b. medial temporal gyrus d. inferior temporal

Answer: c

Page(s) in Text: 469

Question Type: factual, difficult

36. An efference copy is a copy of (a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. goal state c. sensory information

b. task demand d. motor command

Answer: d

Page(s) in Text: 470

37. Comparing sensory predictions to sensory consequences leads to (the) \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. kinesthetic corrections c. error estimation

b. motor commands d. source of sensory events

Answer: d

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38. \_\_\_\_\_\_\_\_\_\_\_\_\_ believed the self is a tangible unified mental entity.

a. William James c. Skinner

b. Descartes d. Kenny

Answer: b

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39. \_\_\_\_\_\_\_\_\_\_\_\_ believed the self is an illusion arising from various perceptions and sensations.

a. Kenny c. William James

b. Descartes d. Skinner

Answer: c

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40. \_\_\_\_\_\_\_\_\_\_\_\_ believed the self is a mythical entity.

a. Skinner c. Kenny

b. Hume d. William James

Answer: c

Page(s) in Text: 470

41. Baldwin believed that \_\_\_\_\_\_\_\_\_\_\_\_ was the means by which children come to understand others.

a. conceptualizing c. mimicry

b. imitation d. role playing

Answer: b

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42. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ posits that we gain insight into the plans, beliefs, and desires that motive the actions of others by covertly simulating those same actions in ourselves.

a. Passive learning c. Observational learning

b. Simulation theory d. Imagery theory

Answer: b

Page(s) in Text: 471

43. Perception-to-action transfer is part of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. perception-action cycle c. sensory-motor cycle

b. decision-making process d. stimulus-response process

Answer: a

Page(s) in Text: 471

44. Neurons that discharge when a motor plan is executed and when the action of another is observed are known as \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. mirror neurons c. motor neurons

b. mimicking neurons d. nondifferentiating neurons

Answer: a

Page(s) in Text: 472

45. Watching a horse run on a track is perceived differently than watching an animated horse run on a simulated track at a casino. The difference is due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the animation effect c. the kinematic effect

b. biological motion d. real-time processing

Answer: b

Page(s) in Text: 473

Topic: Biological Motion

46. Game developers place a set of lights on wrists, knees, ankles, shoulders, and heads of athletes to determine their \_\_\_\_\_\_\_\_\_\_\_\_ so that the games are as realistic as possible.

a. gate cadence c. motion signature

b. relative proportions d. kinematic pattern

Answer: d

Page(s) in Text: 474

Topic: Biological Motion

47. Although A.Z. was born without limbs, her performance on a mental rotation task using hands and feet at different amounts of rotation was similar to that of control participants. This finding suggests that the perception of biological motion is \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. hardwired c. learned

b. constrained by biology d. moderated by environmental factors

Answer: a

Page(s) in Text: 475

Topic: Biological Motion

48. Neuroimaging studies have identified the \_\_\_\_\_\_\_\_ as an important area of the brain for processing biological motion.

a. PVL c. PFC

b. IMT d. STS

Answer: d

Page(s) in Text: 476

Topic: Biological Motion

49. Using a million drawings to make a feature length movie is possible due to the phenomenon of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. kinematic patterns c. apparent motion

b. automatic processing d. the cinematic effect

Answer: c

Page(s) in Text: 477

Topic: Biological Motion

50. The time difference between the onsets of two stimuli is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. interstimulus interval c. temporal discrepancy

b. stimulus onset asynchrony d. a time lag

Answer: d

Page(s) in Text: 467-468

Topic: Biological Motion

**Short Answer**

51. Identify the three parts of the motor processing hierarchy and what they do.

Answer: Area M1 controls fine motor movements. The premotor area (PM) is involved in setting up programs for specific sequences of actions. The supplementary motor area (SMA) is involved in setting up and executing action plans.

Page(s) in Text: 453

Topic: The Nature of Motor Cognition

52. What is a benefit of shared motor representations?

Answer: Shared motor representations are representations of actions made by other people. They are important because they allow us to learn from observing other people.

Page(s) in Text: 455

Topic: The Nature of Motor Cognition

53. Before attempting a complicated routine, a gymnast rehearses the routine repeatedly using mental imagery. Why would this be a beneficial strategy?

Answer: Research evidence indicates that motor imagery uses the same processes involved in programming and preparation of actual actions. As a result, motor imagery has a positive effect on subsequent performances.

Page(s) in Text: 456

Topic: Mental Simulation and the Motor System

54. Why is motor imagery beneficial?

Answer: Motor imagery and actual motor actions use the same motor programs. Since the same motor programs are engaged when imagery is used as in actual motor performance, practice with mental imagery practices the motor routine. In addition, the constraints of the physical world that impact our actual performance similarly impact motor imagery. Therefore, motor imagery and motor production use the same representations and the physical characteristics of objects and events have the same influence on imagined and performed actions.

Page(s) in Text: 460

Topic: Mental Simulation and the Motor System

55. Does mental rotation always involve the motor cortex? Support your answer.

Answer: Usually imagery involves the motor cortex because participants are asked to manipulate an object in their mind. However, when asked to perform a mental rotation task with an electric motor rotating the objects, the motor cortex is not active.

Page(s) in Text: 464

Topic: Mental Simulation and the Motor System

56. What does apraxia tell us about differences in the imitation of gestures?

Answer: Apraxia is a neurological disorder that impairs the ability to make voluntary movements. Although people with apraxia can imitate meaningful gestures, they cannot imitate meaningless gestures. It is believed that this difference demonstrates one processing path that utilizes memory representations of familiar gestures while a second path provides a direct link between perception and movement production.

Page(s) in Text: 468

57. Briefly describe simulation theory.

Answer: According to simulation theory, we gain insight into the plans, beliefs, and desires that motivate the actions of others by covertly simulating those same actions in ourselves without actually performing them.

Page(s) in Text: 471

58. Describe the change in the perception of biological motion that occurs between approximately 3 and 5 months of age.

Answer: At 3 months an infant is able to distinguish between upright and upside-down biological motion. Infants at this age can also tell the difference between biological motion and random dots. At 5-7 months, children are able to recognize biological motion but do not differentiate upside-down motion from random dots. Although this might appear as a regression in ability, it is hypothesized that by 5-7 months children have developed a sense of familiarity with the environment. With the familiarity, biological motion is common but there are no experiences with inverted biological motion and random dots.

Page(s) in Text: 475

Topic: Biological Motion

**Essay**

59. Describe the nature of motor processing in the brain, being sure to highlight interactions between brain areas.

Answer: Area M1 controls fine motor movements. The premotor area (PM) is involved in setting up programs for specific sequences of actions. The supplementary motor area (SMA) is involved in setting up and executing action plans. However, neural evidence suggests that these areas do not always work in sequence. In addition, the PFC is involved with the initiation and temporal organization of action. The cerebellum is also involved with the temporal control of action sequences. Finally, these areas send and receive information from each other to coordinate movements.

Page(s) in Text: 454-455

Topic: The Nature of Motor Cognition

Question Type: factual, difficult

60. Describe the classic Shepard and Metzler mental rotation study.

Answer: Shepard and Metlzer presented pairs of geometric shapes. One item in the pair was rotated within the picture-plane or in depth. Participants were required to indicate whether the shapes were identical or mirror images. They found participants’ reaction time for the task corresponded to the degree to which the object was rotated.

Page(s) in Text: 463

Topic: Mental Simulation and the Motor System

61. What are the limitations or restrictions associated with imitation with children?

Answer: Infants imitate facial expressions of others and eventually imitate actions with objects by approximately 6 months. Infants and toddlers imitate the actions of adults but not the actions of mechanical devices. In addition, the behavior needs to be understandable and consistent with plausible goals.

Page(s) in Text: 465-466

62. What do stimulus onset asynchrony studies of biological motion tell us about motion perception?

Answer: Using short SOAs and still pictures of human movement that would violate the solidity constraint, participants perceive the shortest path of motion. This is similar to how people perceive the apparent motion of objects. However, under longer SOA conditions, participants perceive motion consistent with biological motion. These findings suggest a difference in object motion and human motion perception.

Page(s) in Text: 478-479

Topic: The Nature of Motor Cognition

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 11 – Quick Quiz

1. A(n) \_\_\_\_\_\_\_\_\_\_\_ is a series of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. perception-action cycle, actions c. action, movements

b. movement, motor programs d. motor cognition, intentions

2. \_\_\_\_\_\_\_\_\_\_\_\_ link perception and action.

a. Attention c. Intentions

b. Representations d. Consequences

3. Less precise movements are processed in \_\_\_\_\_\_.

a. SM A c. MT

b. M1 d. PM

4. Overarching plans for action are processed in \_\_\_\_\_\_.

a. PM c. M1

b. SMA d. MT

5. Representing actions made by other people is accomplished by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. perception-action cycles c. vicarious motor programs

b. shared motor representations d. action association schemas

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ takes place after a stimulus is identified and before a response is executed.

a. Motor imagery c. Motor anticipation

b. Motor priming d. Intentions

7. The \_\_\_\_\_\_\_\_\_\_\_\_ is activated whether you are imagining yourself dunking a basketball or imagined your friend dunking a basketball.

a. somatosensory cortex c. premotor cortex

b. posterior cingulate d. frontopolor cortex

8. \_\_\_\_\_\_\_\_\_\_\_\_ is the tendency to adopt the behaviors, postures, or mannerisms of others without awareness or intent.

a. Mimicry c. Imitation

b. Simulation d. Mockery

9. \_\_\_\_\_\_\_\_\_\_\_ is the ability to understand the intent of an observed action and then to reproduce it.

a. Mockery c. Imitation

b. Mimicry d. Impersonation

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ distinguish(es) imitation from mimicry.

a. Attention c. Goals

b. Intention d. Practice

Answer Key

Chapter 11 – Quick Quiz

1. Answer: c

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Topic: The Nature of Motor Cognition

2. Answer: b

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Topic: The Nature of Motor Cognition

3. Answer: d

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Topic: The Nature of Motor Cognition

4. Answer: b

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Topic: The Nature of Motor Cognition

5. Answer: b

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Topic: The Nature of Motor Cognition

6. Answer: c

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Topic: Mental Simulation and the Motor System

7. Answer: c

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Topic: Mental Simulation and the Motor System

Question Type: factual, difficult

8. Answer: a

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Topic: Mental Simulation and the Motor System

9. Answer: c

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Topic: Mental Simulation and the Motor System

10. Answer: b

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Chapter 12: Language

**Multiple Choice**

1. Researchers interested in examining the comprehension, production, and acquisition of language are \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. developmental psychologists c. linguists

b. psycholinguists d. neurologists

Answer: b

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Topic: The Nature of Language

\*2. \_\_\_\_\_\_\_\_\_\_\_ refers to the knowledge someone has about the structure of language.

a. Syntax c. Grammar

b. Discourse d. Lexicon

Answer: c

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Topic: The Nature of Language

\*3. \_\_\_\_\_\_\_\_\_\_\_\_ is a coherent group of written or spoken sentences.

a. Syntax c. Grammar

b. Discourse d. Lexicon

Answer: b

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Topic: The Nature of Language

4. The discourse level of language representation in a phrase structure tree deals with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. propositions and inferences c. noun and verb phrases

b. the choice of words d. sounds and their meanings

Answer: a

Page(s) in Text: 484

Topic: The Nature of Language

Question Type: factual, difficult

5. The syntactic level of language representation in a phrase structure tree deals with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. propositions and inferences c. noun and verb phrases

b. the choice of words d. sounds and their meanings

Answer: c

Page(s) in Text: 484

Topic: The Nature of Language

Question Type: factual, difficult

6. A diagram of a sentence illustrating the hierarchical syntactic structure of the sentence is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. syntactic branch c. sentence diagram

b. phrase structure tree d. syntactic parsing tree

Answer: b

Page(s) in Text: 484

Topic: The Nature of Language

\*7. \_\_\_\_\_\_\_\_\_\_\_\_\_ specifies the relationships between the types of words in a sentence.

a. Syntax c. Grammar

b. Discourse d. Lexicon

Answer: a

Page(s) in Text: 484

Topic: The Nature of Language

\*8. Damage to the auditory perception area would result in difficulties with \_\_\_\_\_\_\_\_\_\_.

a. language representation c. comprehension

b. speech perception d. hearing

Answer: b

Page(s) in Text: 485

Topic: The Nature of Language

9. Disruption in language or speech is referred to as \_\_\_\_\_\_\_\_\_\_\_\_.

a. agnosia c. aphasia

b. ataxia d. amnesia

Answer: c

Page(s) in Text: 485

Topic: The Nature of Language

10. Cortical control of the throat, tongue, jaw, and lips is found in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. Broca’s area c. Wernicke’s area

b. the parietal lobe d. the primary motor cortex

Answer: d

Page(s) in Text: 485

Topic: The Nature of Language

\*11. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the smallest unit of meaning in a language.

a. morpheme c. phoneme

b. functional word d. discourse

Answer: a

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Topic: The Nature of Language

12. In the sentence “Bugs Bunny tricked Elmer Fudd,” the suffix ed is a \_\_\_\_\_\_\_\_\_\_\_.

a. function word c. content morpheme

b. function morpheme d. tense morpheme

Answer: b

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Topic: The Nature of Language

13. In the sentence “Bugs Bunny tricked Elmer Fudd,” trick is a \_\_\_\_\_\_\_\_\_\_\_.

a. function word c. content morpheme

b. function morpheme d. action morpheme

Answer: c

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Topic: The Nature of Language

14. When Elmer Fudd exclaims, “I hate that wascally wabbit,” that is a \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. function word c. content morpheme

b. function morpheme d. action morpheme

Answer: a

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Topic: The Nature of Language

15. A patient has fairly good grammar and generally used function morphemes correctly. However, he cannot produce content morphemes. As a result, his speech usually does not make sense. What disorder do you suspect this patient has?

a. Broca’s aphasia c. nonfluent aphasia

b. Wernicke’s aphasia d. discourse aphasia

Answer: b

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Topic: The Nature of Language

Question Type: applied, difficult

16. A patient has difficulty distinguishing the difference in meaning between sentences like “Barry Bonds hit the pitch” and “The pitch hit Barry Bonds.” What disorder do you suspect this patient has?

a. Broca’s aphasia c. fluent aphasia

b. Wernicke’s aphasia d. syntactic aphasia

Answer: a

Page(s) in Text: 486

Topic: The Nature of Language

Question Type: applied, difficult

17. A patient has fairly good grammar and generally used function morphemes correctly. However, he cannot produce content morphemes. You want to do an MRI to see if (the) \_\_\_\_\_\_\_\_\_\_\_\_ is damaged.

a. Broca’s area c. primary motor cortex

b. Wernicke’s area d. auditory perception area

Answer: b

Page(s) in Text: 485-487

Topic: The Nature of Language

Question Type: applied, difficult

18. A patient has difficulty distinguishing the difference in meaning between sentences like “Barry Bonds hit the pitch” and “The pitch hit Barry Bonds.” You want to do an MRI to see if (the) \_\_\_\_\_\_\_\_\_\_\_\_\_ damaged.

a. Broca’s area c. primary motor cortex

b. Wernicke’s area d. auditory perception area

Answer: a

Page(s) in Text: 485-487

Topic: The Nature of Language

Question Type: applied, difficult

19. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the minimal unit of sound that distinguishes words in a given language.

a. morpheme c. function morpheme

b. grammapheme d. phoneme

Answer: d

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Topic: The Nature of Language

20. Being able to combine and recombine phonemes to make different morphemes is referred to as (the) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. combination rule c. duality of patterning

b. pluralistic construction d. linguistic complexity

Answer: c

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Topic: The Nature of Language

21. There generally is no relationship between the sound of a word and its meaning. This characteristic of language is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. unpredictability c. randomness

b. arbitrariness d. onomatopoeia

Answer: b

Page(s) in Text: 490

Topic: The Nature of Language

22. Referring to a classroom chair that has a desk attached to it as a “chesk” is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. randomness c. morphing

b. constructiveness d. generative capacity

Answer: d

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Topic: The Nature of Language

23. *The point guard was a natural leader on the court since he was exceptional at handling pressure and his father was a high school coach and the two spent hours and hours viewing film and discussing strategy.* This sentence is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. recursion c. generative capacity

b. idea elaboration d. cascading concepts

Answer: a

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Topic: The Nature of Language

24. After learning sign language, Nim’s language ability, as measured by utterance length, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. was similar to that of deaf children

b. progressed faster than deaf children

c. remained at the level of an 18-month-old child

d. was similar to that of hearing children

Answer: c

Page(s) in Text: 492

Topic: The Nature of Language

\*25. The entire set of mental representations of words is called the \_\_\_\_\_\_\_\_\_\_.

a. lexicon c. language

b. dictionary d. vocabulary

Answer: a

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Topic: Processes of Language Comprehension

26. The three components of the triangle model are \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_.

a. meaning, spelling, grammar c. phonemes, morphemes, syntax

b. orthography, phonology, meaning d. sound, spelling, rules

Answer: b

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Topic: Processes of Language Comprehension

27. “There is a light wind today” and “I need to wind the clock” illustrate the principle of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. ambiguity c. phonemic complexity

b. semantic uncertainty d. the need for context

Answer: a

Page(s) in Text: 494-495

Topic: Processes of Language Comprehension

28. Research on resolving ambiguity integrates \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ information.

a. bottom-up, top-down c. phonemic, syntactic

b. auditory, linguistic d. acoustic, semantic

Answer: a

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Topic: Processes of Language Comprehension

29. A two-dimensional visual display of speech with time on one axis and frequency on the other is known as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. frequency plot c. wavelength-time graph

b. spectrogram d. two-dimensional speech graph

Answer: b

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Topic: Processes of Language Comprehension

30. Darker lines on a spectrogram mean \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. points of coarticulation c. ambiguity

b. clear articulation d. louder sounds

Answer: d

Page(s) in Text: 496-497

Topic: Processes of Language Comprehension

31. The production of speech sounds is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. communication c. verbalization

b. articulation d. expression

Answer: b

Page(s) in Text: 497

Topic: Processes of Language Comprehension

\*32. Overlapping phonemes in speech are called \_\_\_\_\_\_\_\_\_\_\_\_.

a. articulation c. double diction

b. dual enunciation d. coarticulation

Answer: d

Page(s) in Text: 497

Topic: Processes of Language Comprehension

33. While you’re watching a late night talk show, a guest says something he is not allowed to say on the air. Even though part of the word in question is “bleeped out”, you still hear the word. This is called the \_\_\_\_\_\_\_\_\_\_\_\_ effect.

a. coarticulation c. phonemic restoration

b. sound completion d. missing sound

Answer: c

Page(s) in Text: 498

Topic: Processes of Language Comprehension

34. When participants were shown a video of a woman saying “ba” with the sound “ga” dubbed in instead, they reported hearing the sound “da.” This confusion is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the McGurk effect c. the Kuleshov effect

b. phonemic confusion d. the Hitchcock effect

Answer: a

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Topic: Processes of Language Comprehension

35. A group of words that may match a speech signal is a \_\_\_\_\_\_\_\_\_\_\_.

a. lexicon c. cohort

b. vocabulary d. neighborhood density

Answer: c

Page(s) in Text: 500

Topic: Processes of Language Comprehension

36. Damage to the temporal lobe can result in category-specific impairments. Specifically, people tend to have difficulty recognizing \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. people, objects c. living things, manmade things

b. 2-D things, 3-D things d. stationary, moving targets

Answer: d

Page(s) in Text: 502

Topic: Processes of Language Comprehension

\*37. Bottom-up processing of word meaning occurs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an ambiguous word. Top-down processing seems to occur \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. shortly after, at the same time c. immediately following, at the same time

b. before, later d. immediately following, 200 milliseconds later

Answer: d

Page(s) in Text: 505

Topic: Processes of Language Comprehension

38. “What has four wheels and flies?” The answer is a garbage truck. This joke is based on a kind of ambiguity known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. unclear subject c. adjective-noun reversal

b. a garden path sentence d. object ambiguity

Answer: b

Page(s) in Text: 507

Topic: Processes of Language Comprehension

Question Type: applied, difficult

39. A basic property of sentence comprehension is that we interpret words as we encounter them, otherwise known as \_\_\_\_\_\_\_\_\_\_\_\_.

a. sequential processing c. immediacy

b. serial ordering d. order effects

Answer: c

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Topic: Processes of Language Comprehension

40. “The hamster was found dead in its cage while cleaning” is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. object ambiguity c. structural ambiguity

b. figurative language d. disambiguation

Answer: c

Page(s) in Text: 507

Topic: Processes of Language Comprehension

Question Type: applied, difficult

41. The point at which the intended meaning of a sentence is clear is called the \_\_\_\_\_\_\_\_\_\_\_\_.

a. points of understanding c. moment of insight

b. disambiguation region d. linguistic clarity marker

Answer: b

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Topic: Processes of Language Comprehension

42. Structural ambiguities create \_\_\_\_\_\_\_\_\_\_\_\_\_ problems for the interpretation of a sentence.

a. systematic c. permanent

b. temporary d. profound

Answer: b

Page(s) in Text: 508

Topic: Processes of Language Comprehension

43. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are examples of figurative language.

a. Metaphors and similes c. Sign-language and gestures

b. Numerical concepts d. Sensory descriptors

Answer: a

Page(s) in Text: 509

Topic: Processes of Language Comprehension

44. When people ask a question, their voices typically raise in pitch at the last word. The change in pitch is known as (the) \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. intonation c. frequency modulation

b. perceptual punctuation d. Victor Borge effect

Answer: a

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Topic: Processes of Language Comprehension

45. Sometimes the only way to tell if a statement is meant to be factual, sarcastic, or ironic is by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. the type of ambiguity used c. nonverbal cues

b. intonation d. reactions of others

Answer: b

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Topic: Processes of Language Comprehension

46. Reading requires the mapping of spelling to \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. meaning, grammar c. vocabulary, syntax

b. words, sentences d. phonology, meaning

Answer: d

Page(s) in Text: 511

Topic: Processes of Language Comprehension

47. The temporoparietal brain system for reading is important for \_\_\_\_\_\_\_\_\_\_\_ spelling to phonology and phonology to meaning relationships.

a. learning c. recalling

b. monitoring d. identifying

Answer: b

Page(s) in Text: 513

Topic: Processes of Language Comprehension

48. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ brain system in reading is important for relating visual information to meaning once reading skill increases.

a. occipitoparietal c. geniculostriate

b. temporofrontal d. occipitotemporal

Answer: d

Page(s) in Text: 513

Topic: Processes of Language Comprehension

49. Skilled readers fixate on \_\_\_\_\_\_\_\_\_\_\_\_ word(s).

a. every c. almost every

b. definitional d. informative

Answer: c

Page(s) in Text: 514

Topic: Processes of Language Comprehension

50. Eye movements of speed readers are similar to the eye movements of readers \_\_\_\_\_\_\_\_\_\_\_\_.

a. who are highly skilled c. reading normally

b. who are skimming d. who are novices

Answer: b

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Topic: Processes of Language Comprehension

51. Reading comprehension for speed readers is about the same as the college students who \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. have dyslexia c. skim text

b. are reading their second language d. read normally

Answer: c

Page(s) in Text: 515

Topic: Processes of Language Comprehension

52. \_\_\_\_\_\_\_\_\_\_\_\_\_ are important for understanding the stages of language production.

a. Exchange errors c. Freudian slips

b. TOT states d. Semantic codes

Answer: a

Page(s) in Text: 516-517

Topic: Processes of Language Production

53. Formulating a message that needs to be conveyed occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_ stage of language production.

a. goal development c. content

b. meaning d. message

Answer: d

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Topic: Processes of Language Production

54. Errors in speech stemming from thoughts that a speaker does not want to say are \_\_\_\_\_\_\_\_\_\_.

a. sound-exchange errors c. word-exchange errors

b. Freudian slips d. message level errors

Answer: b

Page(s) in Text: 518

Topic: Processes of Language Production

55. Someone who recently had a severe head injury comes to see you because he cannot seem to find the proper names for objects any more. You show him several pictures of everyday objects. He cannot name the objects but can show you how to use them properly. You suspect that he is suffering from \_\_\_\_\_\_\_\_\_\_\_\_\_.

a. amnesia c. aphasia

b. TOT d. anomia

Answer: d

Page(s) in Text: 522

Topic: Processes of Language Production

56. Because bilinguals process two languages they have \_\_\_\_\_\_\_\_\_\_\_\_ compared to monolinguals.

a. more efficient executive processes c. fewer TOT experiences

b. larger vocabularies d. enhanced syntactic development

Answer: a

Page(s) in Text: 527-528

Topic: Language, Thought, and Bilingualism

Question Type: factual, difficult

**Short Answer**

57. Describe the deficits characteristic of Broca’s aphasia.

Answer: People with Broca’s aphasia have difficulty understanding the relationship between words in a sentence.

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Topic: The Nature of Language

58. Describe the deficits characteristic of Wernicke’s aphasia.

Answer: People with Wernicke’s aphasia have difficulty producing and comprehending content morphemes.

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Topic: The Nature of Language

59. List the levels of language representation.

Answer: The levels of language representation include the phoneme, morpheme, word, syntactic, and discourse levels.

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Topic: The Nature of Language

60. What does the ambiguity of language refer to and how is it resolved?

Answer: Ambiguity is a property of language in which more than one interpretation of a sound, word, phrase, or sentence is possible. This problem is resolved by using a combination of bottom-up and top-down processing.

Page(s) in Text: 494-496

Topic: Processes of Language Comprehension

61. Assume that you are working for a television network. A field reporter for a news program interviewed an individual who used some language too colorful for the air. Considering the phonemic restoration effect, how would you remove a questionable word so that it was not recognizable by the audience?

Answer: The phonemic restoration effect demonstrates our ability to supply a missing or poorly pronounced phoneme. Therefore, eliminating only the first or last sound of a word would still leave the word readily recognizable. To make sure the word is not known to the viewers, you should “bleep out” or eliminate the entire word (starting the bleep slightly before the word and continuing just after the word would produce the best results due to coarticulation).

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Topic: Processes of Language Comprehension

Question Type: applied, difficult

62. Explain how bottom-up and top-down processing can combine to supply missing pieces of information during language processing.

Answer: Bottom-up processing provides the perceptual information necessary for combining phonemes into morphemes and morphemes into words. When certain sounds are missing, top-down processing can substitute sounds for the missing pieces of information with context appropriate information until an appropriate match is found.

Page(s) in Text: 498-500

Topic: Processes of Language Comprehension

63. Your roommate claims to always be behind in his work because he cannot read fast enough. He is considering taking a speed reading course. Knowing that you are in a cognition class, he asks if you think the course is a good idea. What would you tell him? Should he pay to take the speed reading course?

Answer: Using speed reading techniques for a college textbook is probably not a good idea. Textbooks contain new ideas and concepts that need effortful processing. That is one reason why speed readers do not comprehend what they read as well as people who read normally. Therefore, if he speed reads, your roommate might get done reading more quickly but he will remember less, which would impact his performance on tests and papers. He could, however, increase the speed with which he reads for leisure by skimming the material.

Page(s) in Text: 515

Topic: Processes of Language Comprehension

64. What do the tip-of-the-tongue states reveal about phonological encoding?

Answer: TOT reveals that choosing a word and retrieving its pronunciation are two distinct stages of processing.

Page(s) in Text: 520

Topic: Processes of Language Production

**Essay**

65. Differentiate between Broca’s aphasia and Wernicke’s aphasia. What does each of these conditions tell us about language processing?

Answer: People with Broca’s aphasia have difficulty understanding the relationship between words in a sentence because they have problems processing content morphemes but their understanding of words and the world remains relatively unimpaired. As a result, sentences like “The running back hurt the linebacker on the play” and “The running back was hurt by the linebacker on the play” will be interpreted as having the same meaning. The inability to understand the differences between the sentences emphasizes that the recombination of words can result in different meanings. People with Wernicke’s aphasia, on the other hand, have difficulty producing and comprehending content morphemes. Their speech includes nouns and verbs but it often nonsensical. Together, these forms of aphasia show that language is processed on different levels. Additionally, the levels are interconnected so that deficits on one level can lead to difficulties on another level. For instance, the disruption of content morphemes in Broca’s aphasia can contribute to difficulties in interpreting sentence syntax.

Page(s) in Text: 486-489

Topic: The Nature of Language

66. Animals can communicate but their communication is different from a language. Describe three ways in which animal communication and language differ.

Answer: One characteristic of language is the duality of patterning. Meaningless sounds (phonemes) are combined to form meaningful units or morphemes. Further, the phonemes can be combined in a variety of ways to create a variety of meaningful units. Animal communication consists of one sound for a particular signal; the sounds are not combined in different ways to create new signals. Arbitrariness refers to the unpredictability between the sounds of a word and the meaning of the word. Human language is also generative in that morphemes, words, and sentences can be recombined to convey a limitless number of ideas. Related to generative capacity is recursion. Recursion refers to the embedding of pieces of a sentence in other pieces of a sentence or whole sentence. The vocal tract of humans and animals create certain sounds.

Page(s) in Text: 489-492

Topic: The Nature of Language

67. Diagram and label the triangle model of the lexicon. Using the diagram, describe how phonics and the whole-word method of reading instruction lead to word comprehension.

Answer: Students should produce a figure like that found in Figure 12-7 on page 494. The whole- word method of reading instruction assumes that we should recognize a word based on its spelling similar to how we recognize an object based on its components. This type of processing is found in the spelling-meaning route of the triangle model. However, the meaning of a word can also be found by looking at the spelling of a word, sounding the word out, and then arriving at the meaning.

Page(s) in Text: 494, 511-512

Topic: Processes of Language Comprehension

68. Assume you are a member of the school board. At an open meeting, several parents comment that developmental research indicates that languages are learned more easily when people are younger instead of older. Therefore, they complain that languages are taught too late in school (high school) and need to be taught earlier in elementary school. You decide to balance the argument by commenting on the negative consequences of learning a second language. What consequences will you describe to these concerned parents?

Answer: Vocabularies tend to be smaller for bilingual children than for monolingual children. Similarly, bilingualism slows syntactic development in both languages. Bilinguals also tend to make more speech production errors such as TOT states. A benefit of bilingualism that the parents did not mention, that would not support the opposing view, is that bilingualism helps produce more efficient executive processing.

Page(s) in Text: 525-528

Topic: Language, Thought, and Bilingualism

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 12 – Quick Quiz

1. \_\_\_\_\_\_\_\_\_\_\_ refers to the knowledge someone has about the structure of language.

a. Syntax c. Grammar

b. Discourse d. Lexicon

2. \_\_\_\_\_\_\_\_\_\_\_\_ is a coherent group of written or spoken sentences.

a. Syntax c. Grammar

b. Discourse d. Lexicon

3. \_\_\_\_\_\_\_\_\_\_\_\_\_ specifies the relationships between the types of words in a sentence.

a. Syntax c. Grammar

b. Discourse d. Lexicon

4. Damage to the auditory perception area would result in difficulties with \_\_\_\_\_\_\_\_\_\_.

a. language representation c. comprehension

b. speech perception d. hearing

5. Disruption in language or speech is referred to as \_\_\_\_\_\_\_\_\_\_\_\_.

a. agnosia c. aphasia

b. ataxia d. amnesia

6. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the smallest unit of meaning in a language.

a. morpheme c. phoneme

b. functional word d. discourse

7. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the minimal unit of sound that distinguishes words in a given language.

a. morpheme c. function morpheme

b. grammapheme d. phoneme

8. The entire set of mental representations of words is called the \_\_\_\_\_\_\_\_\_\_.

a. lexicon c. language

b. dictionary d. vocabulary

9. Overlapping phonemes in speech are called \_\_\_\_\_\_\_\_\_\_\_\_.

a. articulation c. double diction

b. dual enunciation d. coarticulation

10. Bottom-up processing of word meaning occurs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an ambiguous word. Top-down processing seems to occur \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. shortly after, at the same time c. immediately following, at the same time

b. before, later d. immediately following, 200 milliseconds later

Answer Key

Chapter 12 – Quick Quiz

1. Answer: c

Page(s) in Text: 483

Topic: The Nature and Language

2. Answer: b

Page(s) in Text: 483

Topic: The Nature and Language

3. Answer: a

Page(s) in Text: 484

Topic: The Nature and Language

4. Answer: b

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Topic: The Nature and Language

5. Answer: c

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Topic: The Nature and Language

6. Answer: a

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Topic: The Nature and Language

7. Answer: d

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Topic: The Nature and Language

8. Answer: a

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Topic: Processes of Language Comprehension

9. Answer: d

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Topic: Processes of Language Comprehension

10. Answer: d

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Topic: Processes of Language Comprehension

**Appendix:**

**Total Assessment Guides**