# *Cognitive Psychology In and Out of the Laboratory 6th edition Galotti Test Bank*

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# Chapter 2: The Brain: An Overview of Structure and Function

## Test Bank

### Multiple Choice

1. Evolutionary structures within the _____ are the most primitive.

a. hindbrain

b. thalamus

c. forebrain

d. midbrain

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Medium

2. Which structure transmits information from the spinal cord to the brain and regulates life support functions such as respiration?

a. hypothalamus

b. medulla oblongata

c. pons

d. cerebellum

Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Easy

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3. Damage to the medulla oblongata would most likely result in _____.

a. blindness

b. amnesia

c. death

d. loss of balance

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Medium

4. Which is NOT a function of the pons?

a. acting as a neural relay center

b. facilitating the crossover of information between the left side of the body and the right side of the brain

c. processing visual and auditory information

d. regulating homeostatic behaviors

Ans: d

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Easy

5. Joseph has suffered a stroke. He now experiences difficulty with balance, as well as trouble processing visual and auditory information. Which area of the brain has most likely been damaged?

a. pons

b. thalamus

c. medulla oblongata

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d. hippocampus

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Application

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Medium

6. Muscle activity is coordinated in the primitive brain structure called the _____.

a. pons.

b. cerebellum

c. medulla oblongata

d. thalamus

Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Easy

7. After a head injury, Sarah has trouble coordinating muscle activity. Sarah most likely suffered damage to the_____.

a. pons

b. medulla oblongata

c. cerebellum

d. thalamus

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Application

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Medium

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8. Many of the structures of the _____ are involved in relaying information between other brain regions.

a. midbrain

b. hindbrain

c. forebrain

d. cerebral cortex

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Easy

9. The thalamus, hypothalamus, and hippocampus are all structures of the_____.

a. hindbrain

b. forebrain

c. midbrain

d. medulla

Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

10. The function of the thalamus is to_____.

a. coordinate muscle activity

b. relay information

c. regulate hormones

d. regulate emotional reactions

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Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

11. Damage to the thalamus might result in an inability to_____.

a. relay information from one part of the brain to another

b. coordinate muscle activity

c. processing visual and auditory information

d. regulate hormones

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

12. Which of the following controls the pituitary gland by releasing hormones?

a. thalamus

b. medulla

c. hypothalamus

d. pons

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

13. Which of the following is NOT regulated by the hypothalamus?

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a. memory formation

b. temperature

c. eating and drinking

d. sexual behavior

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

14. Rats with damage to the _____ may starve themselves to death because they fail to eat.

a. hypothalamus

b. thalamus

c. cerebellum

d. hippocampus

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Application

Answer Location: The Forebrain

Difficulty Level: Medium

15. Which of these structures is involved in the formation of long-term memories?

a. thalamus

b. hypothalamus

c. hippocampus

d. pons

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

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Answer Location: The Forebrain

Difficulty Level: Easy

16. Damage to the hippocampus would result in _____.

a. death

b. blindness

c. loss of the ability to form new memories

d. deafness

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

17. Which of these structures modulates the strength of emotional memories and is involved in emotional learning?

a. thalamus

b. hypothalamus

c. hippocampus

d. amygdala

Ans: d

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

18. The part of the cerebral cortex at the back of the head is called the _____ lobe.

a. frontal

b. parietal

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c. occipital

d. temporal

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

19. The left and right hemispheres of the frontal, parietal, and occipital lobes are connected by the _____.

a. medulla oblongata

b. anterior commissure

c. corpus callosum

d. amygdala

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

20. Split brain operations involved severing the _____.

a. medulla oblongata

b. corpus callosum

c. anterior commisure

d. amygdala

Ans: b

Learning Objective: 2-4: Compare and contrast the two cerebral hemispheres using lateralization of function

Cognitive Domain: Knowledge

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Answer Location: Studies of Split-Brained Patients

Difficulty Level: Easy

21. A structure known as the _____ divides the frontal and parietal lobes.

a. central sulcus

b. anterior commissure

c. corpus callosum

d. lateral sulcus

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

22. The _____ lobes are involved in the processing of sensory information from the body, such as pain, pressure, touch, and temperature.

a. occipital

b. temporal

c. frontal

d. prefrontal

Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

23. Damage to the occipital lobe could result in difficulty processing _____.

a. auditory information

b. memories

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c. sensations of pain

d. visual information

Ans: d

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

24. After a head injury, Mary has difficulty with her sight. Which lobe of the brain was probably affected?

a. frontal

b. temporal

c. occipital

d. parietal

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Application

Answer Location: The Forebrain

Difficulty Level: Medium

25. Which of the following is NOT a region of the frontal lobes?

a. motor cortex

b. prefrontal cortex

c. premotor cortex

d. postcentral gyrus

Ans: d

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

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Difficulty Level: Easy

26. The _____ is involved in the planning of fine motor movements.

a. premotor cortex

b. motor cortex

c. prefrontal cortex

d. frontal cortex

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

27. Phil was once an accomplished pianist, but after a head injury, he has lost his ability to play the piano. Which part of the cortex was probably damaged?

a. premotor cortex

b. prefrontal cortex

c. frontal cortex

d. occipital cortex

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Application

Answer Location: The Forebrain

Difficulty Level: Medium

28. "Executive functioning" involves all of the following EXCEPT _____.

a. basic sensory processing

b. making decisions

c. using working memory

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d. inhibiting inappropriate behavior

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

29. Who originated the idea of localization of function?

a. Franz Gall

b. William James

c. Wilhelm Wundt

d. Paul Broca

Ans: a

Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology

Cognitive Domain: Knowledge

Answer Location: Faculty Psychology and Phrenology

Difficulty Level: Easy

30. It has been reported that the parents of Ray Kroc, the founder of McDonald's, were told when their son was a baby that he would have a fine career in the food industry. This pronouncement was made by a phrenologist. Upon what would the phrenologist have based such a prediction?

a. a preverbal IQ test

b. a CAT scan

c. the position of the stars on the day of Ray Kroc's birth

d. the bumps and indentations on Ray Kroc's skull

Ans: d

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Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology
Cognitive Domain: Application
Answer Location: Faculty Psychology and Phrenology
Difficulty Level: Medium

31. Which of the following assumptions of phrenology was basically correct?
a. Different parts of the brain control different functions.
b. The size of a portion of the brain corresponds to its relative power.
c. Bumps on the skull coincide with enlarged brain areas.
d. Different brain faculties are absolutely independent of each other.
Ans: a
Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology
Cognitive Domain: Comprehension
Answer Location: Studies of Aphasia and Other Mapping Techniques
Difficulty Level: Medium

32. The idea that different mental abilities, such as reading and arithmetic, are independent functions carried out by different parts of the brain is termed _____.
a. faculty psychology
b. Gestalt psychology
c. functionalism
d. structuralism
Ans: a
Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology
Cognitive Domain: Comprehension
Answer Location: Faculty Psychology and Phrenology

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Difficulty Level: Medium

33. Disruption of language abilities is referred to as _____.

a. aphasia

b. deafness

c. prosopagnosia

d. somatosensory deficit

Ans: a

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

34. Injury to Broca's area results in an inability to _____.

a. produce language fluently

b. understand spoken language

c. understand written language

d. write

Ans: a

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

35. A patient who could not produce language fluently might be suffering from damage to_____.

a. Broca's area

b. Wernicke's area

c. the corpus callosum

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d. the temporal lobe

Ans: a

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Application

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Medium

36. Patients with Wernicke's aphasia are often unable to _____.

a. produce speech

b. speak with fluent rhythm

c. understand speech

d. modulate pitch when speaking

Ans: c

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

37. Jan has difficulty understanding spoken language. She may have suffered damage to_____.

a. Broca's area

b. Wernicke's area

c. the hippocampus

d. the cerebellum

Ans: b

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Application

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Medium

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38. The primary somatosensory cortex is organized such that _____.

a. each part receives information from a specific part of the body

b. the total amount of "brain real estate" devoted to a particular body part is proportional to the size of that body part

c. more sensitive parts of the body have correspondingly larger areas of the brain associated with them

d. each part receives information from a specific part of the body, and more sensitive parts of the body have correspondingly larger areas of the brain associated with them

Ans: d

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

39. Which of the following body parts is associated with the greatest amount of "brain real estate" in the somatosensory cortex?

a. the back

b. the chest

c. the fingers or lips

d. the thigh

Ans: c

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Comprehension

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Medium

40. Lashley's studies of ablation in rats suggested that maze running was related to _____.

a. the total amount of cortex removed

b. the rat's age at the time of cortex removal

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c. the particular part of the cortex removed

d. both the location and amount of cortex removed

Ans: a

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

41. About 95% of all human beings show a specialization for language in the _____.

a. left hemisphere

b. right hemisphere

c. frontal lobe

d. temporal lobe

Ans: a

Learning Objective: 2-4: Compare and contrast the two cerebral hemispheres using lateralization of function

Cognitive Domain: Knowledge

Answer Location: Lateralization of Function

Difficulty Level: Easy

42. Which of the following is associated primarily with the left hemisphere?

a. working on geometric puzzles

b. language processing

c. musical ability

d. navigating around familiar spaces

Ans: b

Learning Objective: 2-4: Compare and contrast the two cerebral hemispheres using lateralization of function

Cognitive Domain: Comprehension

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Answer Location: Lateralization of Function

Difficulty Level: Medium

43. Which of the following is associated primarily with the right hemisphere?

a. the ability to speak

b. the ability to understand language

c. the ability to do arithmetic

d. the ability to navigate around familiar spaces

Ans: d

Learning Objective: 2-4: Compare and contrast the two cerebral hemispheres using lateralization of function

Cognitive Domain: Comprehension

Answer Location: Lateralization of Function

Difficulty Level: Medium

44. A technique in which a highly focused beam of X-rays is passed through the body from many different angles, allowing visualization of an organ such as the brain, is called _____.

a. MRI

b. CAT scan

c. PET scan

d. fMRI

Ans: b

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Knowledge

Answer Location: CAT (CT) Scans

Difficulty Level: Easy

45. CAT scans are usually used to _____.

a. pinpoint areas of brain damage

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b. measure cerebral blood flow

c. track areas of brain activity while performing a particular task

d. detect different states of consciousness

Ans: a

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Knowledge

Answer Location: CAT (CT) Scans

Difficulty Level: Easy

46. An advantage of MRI as compared to CAT scans is that _____.

a. MRI provides information about neuroanatomy

b. MRI requires little technical expertise

c. MRI can be used on people who have pacemakers

d. MRI often permits clearer pictures

Ans: d

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Analysis

Answer Location: Magnetic Resonance Imaging (MRI)

Difficulty Level: Hard

47. Which of the following neuropsychological method(s) provide(s) information about the amount of dynamic blood flow to various regions of the brain?

a. CAT scans

b. MRI

c. EEG

d. fMRI

Ans: d

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Comprehension

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Answer Location: Functional Magnetic Resonance Imaging (fMRI)

Difficulty Level: Medium

48. Which of the following can detect different states of consciousness?

a. CAT

b. MRI

c. EEG

d. ERP

Ans: c

Learning Objective: 2-6: Examine the differences among electrical brain-recording methods

Cognitive Domain: Comprehension

Answer Location: Electroencephalography (EEG)

Difficulty Level: Medium

49. Jane is taking part in a sleep study. Her brain wave patterns are being measured to determine her level of consciousness at various points throughout the night. The brain recording technique that is being used on Jane is _____.

a. CAT

b. EEG

c. ERP

d. PET

Ans: b

Learning Objective: 2-6: Examine the differences among electrical brain-recording methods

Cognitive Domain: Application

Answer Location: Electroencephalography (EEG)

Difficulty Level: Medium

50. To measure an area of the brain's response to a specific event, we use _____.

a. CAT

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b. MRI

c. EEG

d. ERP

Ans: d

Learning Objective: 2-6: Examine the differences among electrical brain-recording methods

Cognitive Domain: Knowledge

Answer Location: Event-Related Potential (ERP)

Difficulty Level: Easy

51. Based on studies with rats, enriched environments resulted in increased dendrite growth and brain development. This best demonstrates _____.

a. the power of experience to influence the brain's structure

b. the fixed nature of brain development

c. biological processes are more important than environmental influences

d. that dendrites only respond to environmental influence

Ans: a

Learning Objective: 2-7: Argue whether or not the brain can be trained

Cognitive Domain: Comprehension

Answer Location: Training the Brain

Difficulty Level: Medium

52. Brain is to computer as cognitive processes are to _____.

a. hardware

b. software

c. viruses

d. users

Ans: b

Learning Objective: 2-7: Argue whether or not the brain can be trained

Cognitive Domain: Comprehension

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Answer Location: Training the Brain

Difficulty Level: Medium

53. Cognitive training studies have NOT been shown to improve _____.

a. intelligence

b. memory

c. processing speed

d. problem solving

Ans: d

Learning Objective: 2-7: Argue whether or not the brain can be trained

Cognitive Domain: Knowledge

Answer Location: Training the Brain

Difficulty Level: Easy

54. Lampit, Valenzuela, and Gates (2015) found some results suggesting that cognitive training could result in small gains in cognitive performance. According to their results, who would be most likely to benefit from such training?

a. psychologically healthy children

b. psychologically healthy young adults

c. young adults with cognitive deficits

d. older adults with cognitive deficits

Ans: d

Learning Objective: 2-7: Argue whether or not the brain can be trained

Cognitive Domain: Application

Answer Location: Training the Brain

Difficulty Level: Medium

55. Transcranial magnetic stimulation can be used to _____.

a. image the entire brain at the same time

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b. eliminate environmental effects on brain activity

c. track activity in an area of interest over a large period of time

d. deactivate a small area of the brain mimicking a stroke

Ans: d

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Comprehension

Answer Location: Transcranial Magnetic Stimulation (TMS)

Difficulty Level: Medium

56. If you wanted to observe brain activity with high physical, structural, and temporal localization, which two imaging techniques would you combine?

a. fMRI and ERP

b. CAT and PET

c. MRI and PET

d. CAT and EEG

Ans: a

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Comprehension

Answer Location: Brain-Imaging Techniques

Difficulty Level: Hard

57. A split-brained patient uses his hand to hold a spoon in his right hand that is hidden behind a partition so that he cannot see the spoon. He would most likely _____.

a. be able to choose another spoon from a set of objects

b. be able to label the object as a spoon

c. be able to interact with the spoon just like a non-split-brained patient

d. have no idea what he was holding

Ans: b

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Learning Objective: 2-4: Compare and contrast the two cerebral hemispheres using lateralization of function

Cognitive Domain: Application

Answer Location: Studies of Split-Brained Patients

Difficulty Level: Hard

58. A patient with Wernicke's aphasia, could _____.

a. be unable to speak and unable to comprehend language

b. be unable to speak, but able to comprehend language

c. produce language, but that language would be incomprehensible

d. accurately produce language, but unable to comprehend language from others

Ans: c

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Application

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Medium

59. Which of the following lobes of the brain would be found at the rear of the skull?

a. frontal lobe

b. parietal lobe

c. temporal lobe

d. occipital lobe

Ans: d

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

60. Which of the following is NOT a structure of the forebrain?

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a. cerebellum

b. cerebral cortex

c. hypothalamus

d. amygdala

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

61. Which brain structure would most likely be involved in the formation of long-term memories?

a. hypothalamus

b. hippocampus

c. thalamus

d. pons

Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

62. After a severe car accident, John is unable to breathe on his own and his heart is not maintaining a steady rhythm. He has most likely suffered damage to which brain structure?

a. hippocampus

b. amygdala

c. medulla

d. cerebellum

Ans: c

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Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Application

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Medium

63. After a severe car accident, John begins to have difficulty suppressing his emotions. Upon further examinations, an MRI reveals that he has suffered severe trauma to his frontal lobe. This demonstrates which neuroscience principle?

a. magnetic resonance

b. aphasia

c. phrenology

d. localization of function

Ans: d

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Application

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Medium

64. Based on evolutionary principles, which brain structure would you expect to be most physically and structurally similar between a human and a rat?

a. cerebellum

b. hippocampus

c. occipital lobe

d. frontal lobe

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Hindbrain and Midbrain

Difficulty Level: Medium

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65. Which major area of the brain would be most implicated in the study of cognitive processes?

a. hindbrain

b. midbrain

c. forebrain

d. anterobrain

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

66. The difficulty in connecting cognitive processes as observed by behavior and cognitive processes in the brain as observed by brain activity could best be described as a problem in the level of _____.

a. detail

b. explanation

c. complication

d. interpretation

Ans: b

Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology

Cognitive Domain: Knowledge

Answer Location: Setting the Stage

Difficulty Level: Easy

67. The frontal, occipital, parietal, and temporal lobes collectively are described as the _____.

a. limbic system

b. motor cortex

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c. cerebral cortex

d. brainstem

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

68. Executive function is most closely associated with which brain region?

a. amygdala

b. hypothalamus

c. motor cortex

d. prefrontal cortex

Ans: d

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

69. If the prefrontal cortex were damaged, you would most likely expect which process to be impaired?

a. executive function

b. emotional memory

c. hormone regulation

d. memory formation

Ans: a

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

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Difficulty Level: Medium

70. Based on neuroscience evidence, which brain structure takes the longest period of time to fully mature in structure and function?

a. hippocampus

b. prefrontal cortex

c. limbic system

d. brain stem

Ans: b

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

71. Brain regions which show _____ plasticity are hypothesized to be _____ to the effects of aging and environmental toxins.

a. the least; most vulnerable

b. the most; least vulnerable

c. the most; most vulnerable

d. zero; immune

Ans: c

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Comprehension

Answer Location: The Forebrain

Difficulty Level: Medium

72. According to the principles of phrenology (if they were accurate), which animal should have the most powerful cognitive processes and mental functions?

a. rat

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b. dog

c. human

d. whale

Ans: d

Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology

Cognitive Domain: Application

Answer Location: Faculty Psychology and Phrenology

Difficulty Level: Medium

73. Based on the way the somatosensory cortex is structured, which body part should activate the largest area of cortex?

a. fingers

b. chest

c. shoulder

d. thigh

Ans: a

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Comprehension

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Medium

74. Findings by Lashley in which a rat showed deficits in maze navigation proportional to the total amount of cortex removed from the brain best demonstrates _____.

a. cognitive functions are highly specific to and recruit particular brain regions

b. cognitive functions can be spread across and recruit multiple brain regions

c. cognitive functions are independent of the physical brain

d. cognitive functions cannot operate with any damage to the physical brain

Ans: b

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Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

75. Which brain imaging technique requires no exposure to radiation?

a. PET

b. SPECT

c. MRI

d. CAT

Ans: c

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Knowledge

Answer Location: Brain-Imaging Techniques

Difficulty Level: Easy

**True/False**

1. The hypothalamus controls homeostatic behaviors such as eating, drinking, sleeping, and sexual behaviors.

Ans: T

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

2. Modulation of the strength of emotional memories is accomplished by the hippocampus.

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Ans: F

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

3. The temporal lobes are located on the sides of the head.

Ans: T

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: Forebrain

Difficulty Level: Easy

4. The prefrontal cortex is involved in executive functioning.

Ans: T

Learning Objective: 2-2: Describe the structures of the brain

Cognitive Domain: Knowledge

Answer Location: The Forebrain

Difficulty Level: Easy

5. Disruption of memory is referred to as aphasia.

Ans: F

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

6. Patients with Broca's aphasia can produce speech, but it often makes no sense, and they have difficulty understanding spoken language.

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Ans: F

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

7. Ablation is a technique of brain research that involves removing parts of the brain.

Ans: T

Learning Objective: 2-3: Explain the approaches to localization of function

Cognitive Domain: Knowledge

Answer Location: Studies of Aphasia and Other Mapping Techniques

Difficulty Level: Easy

8. Brain plasticity is more prominent in younger people than in older people.

Ans: T

Learning Objective: 2-7: Argue whether or not the brain can be trained

Cognitive Domain: Comprehension

Answer Location: Training the Brain

Difficulty Level: Medium

9. MRI requires exposure to radiation.

Ans: F

Learning Objective: 2-5: Differentiate among various brain-imaging techniques

Cognitive Domain: Comprehension

Answer Location: Magnetic Resonance Imaging (MRI)

Difficulty Level: Medium

10. ERP is used to detect different states of consciousness, for example, during sleep.

Ans: F

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Learning Objective: 2-6: Examine the differences among electrical brain-recording methods
Cognitive Domain: Comprehension
Answer Location: Event-Related Potential (ERP)
Difficulty Level: Medium

**Essay**

1. Name and describe two areas of the forebrain that are involved in memory. How do they differ in function?
Ans: The hippocampus is involved in the formation of long-term memories. The amygdala modulates the strength of emotional memories.
Learning Objective: 2-2: Describe the structures of the brain
Cognitive Domain: Analysis
Answer Location: The Forebrain
Difficulty Level: Hard

2. Describe two problems with the assumptions of phrenology.
Ans: (1) Phrenology assumed that the size of a portion of the brain corresponded to its relative power. This is incorrect. (2) Phrenology assumed that different mental faculties were completely independent. We now know that faculties interact in many ways.
Learning Objective: 2-1: Recognize the differences between psychologists' interests in brain functioning in present and past cognitive psychology
Cognitive Domain: Comprehension
Answer Location: Faculty Psychology and Phrenology
Difficulty Level: Medium

3. Describe how a patient with Wernicke's aphasia might exhibit deficits in language.

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Ans: Such a patient could speak with normal rhythms and pitch patterns, but their speech would contain gibberish and would not make sense to the listener. The patient would also be unable to understand speech.
Learning Objective: 2-3: Explain the approaches to localization of function
Cognitive Domain: Comprehension
Answer Location: Studies of Aphasia and Other Mapping Techniques
Difficulty Level: Medium

4. Describe some of the skills of the right hemisphere of the brain.
Ans: The right hemisphere is good at synthesizing information, so it is skilled at working geometric puzzles, navigating around familiar spaces, drawing sketches, constructing maps, and appreciating music.
Learning Objective: 2-4: Compare and contrast the two cerebral hemispheres using lateralization of function
Cognitive Domain: Knowledge
Answer Location: Lateralization of Function
Difficulty Level: Easy

5. What advantage do PET scans and fMRI have over CAT scans and MRI?
Ans: CAT scans and MRI can show the anatomy of the brain, but not how it works. PET scans and fMRI allow us to measure blood flow to different parts of the brain so that we can see which parts of the brain are most active when a person is performing different types of tasks.
Learning Objective: 2-5: Differentiate among various brain-imaging techniques
Cognitive Domain: Analysis
Answer Location: Brain-Imaging Techniques
Difficulty Level: Hard

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