Multiple Choice

1. The _____ is given the treatment to test the hypothesis, while the _____ provides a baseline for comparison.

a. control group/experimental group

b. dependent variable/independent variable

*c. experimental group/control group

d. independent variable/dependent variable

Cognitive domain: Comprehension

Answer location: Elements of an Experiment

Question type: MC

2. An experiment design that assigns each participant to only one condition is called a _____-subjects design.

*a. between

b. cross

c. single

d. within

Cognitive domain: Knowledge

Answer location: Elements of an Experiment

Question type: MC

3. A single application of the treatment in an experiment is called a _____.

a. case

b. set

c. stimulus

*d. trial

Cognitive domain: Comprehension

Answer location: Elements of an Experiment

Question type: MC

4. _____ is a measure of the difference in time between the presentation of a stimulus and the initiation of a response by the participant.

a. Accuracy

b. Error rate

*c. Latency

d. Priming

Cognitive domain: Knowledge

Answer location: Measured Response

Question type: MC

5. The percentage of correct responses over a set of trials is known as _____.

*a. accuracy

b. recall

c. reliability

d. validity

Cognitive domain: Knowledge

Answer location: Measured Response

Question type: MC

6. The _____ task is an experimental procedure in which the participant sees a string of letters and responds as quickly as possible, indicating whether it is a word or not.

*a. lexical decision

b. nonword repetition

c. serial recall

d. two-alternative forced choice

Cognitive domain: Comprehension

Answer location: Bread and Butter

Question type: MC

7. A _____ is a pronounceable letter string that just happens not to be a word in English.

a. cue word

b. function word

*c. nonword

d. target word

Cognitive domain: Knowledge

Answer location: Bread and Butter

Question type: MC

8. _____ is an implicit memory process in which the recall of a particular item is enhanced due to previous exposure of similar items.

a. Delayed recall

*b. Priming

c. Regression

d. Working memory

Cognitive domain: Comprehension

Answer location: Bread and Butter

Question type: MC

9. _____ is a condition due to brain damage and characterized by fluent speech that is filled with vocabulary errors accompanied by difficulty in comprehending speech.

a. Apraxia of speech

b. Broca's aphasia

c. Specific language impairment

*d. Wernicke's aphasia

Cognitive domain: Comprehension

Answer location: Building Blocks

Question type: MC

10. A quick movement of the eyes while reading is known as a _____, and a momentary gaze of the eyes on a single location while reading is known as a _____.

a. fixation/saccade

b. prime/target

*c. saccade/fixation

d. target/prime

Cognitive domain: Comprehension

Answer location: Moving Eyes

Question type: MC

11. In a(n) _____ recall task, the participant hears or sees a series of items and then repeats them without delay.

a. free

*b. immediate

c. nondelayed

d. serial

Cognitive domain: Knowledge

Answer location: Total Recall

Question type: MC

12. If you can remember the beginning and ending of a song but not the middle, you are experiencing _____ effects.

a. delayed recall

b. implicit learning

*c. primacy and recency

d. serial recall

Cognitive domain: Application

Answer location: Total Recall

Question type: MC

13. A memory task in which participants are allowed to repeat the items in any order is called a _____ recall task.

a. delayed

*b. free

c. implicit

d. serial

Cognitive domain: Knowledge

Answer location: Total Recall

Question type: MC

14. _____ learning is a form of learning that takes place outside of conscious awareness.

*a. Implicit

b. Subliminal

c. Transient

d. Unconscious

Cognitive domain: Comprehension

Answer location: Learning Without Knowing

Question type: MC

15. The _____ is the interior portion of the brain that is charged with regulating body functions and keeping the body alive.

*a. brainstem

b. cerebellum

c. cerebral cortex

d. corpus callosum

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

16. The walnut-sized structure behind the brainstem that is responsible for coordinating movement is called the _____.

a. amygdala

*b. cerebellum

c. hippocampus

d. occipital lobe

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

17. The _____ is a band of fibers connecting the left and right hemispheres of the brain, allowing for communication between them.

a. basal ganglia

b. cerebellum

*c. corpus callosum

d. hippocampus

Cognitive domain: Knowledge

Answer location: What's Inside Your Head

Question type: MC

18. The _____ is the outer covering of the forebrain where most of the brain activity giving rise to conscious experience takes place.

a. basal ganglia

*b. cerebral cortex

c. corpus callosum

d. frontal lobe

Cognitive domain: Knowledge

Answer location: What's Inside Your Head

Question type: MC

19. The _____ lobe is located at the back of the head and processes visual input from the eyes.

a. frontal

*b. occipital

c. parietal

d. temporal

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

20. The _____ lobe at that side of the head processes auditory input from the ears and is also responsible for object recognition.

a. frontal

b. occipital

c. parietal

*d. temporal

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

21. _____ refers to the fact that some cognitive functions are processed in only one of the two hemispheres of the brain.

a. Canalization

b. Internalization

*c. Lateralization

d. Localization

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

22. _____ area is a region in the left temporal lobe that is generally described as the language comprehension area of the brain.

a. Broca's

b. Brodmann's

c. Exner's

*d. Wernicke's

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

23. The general term for the set of distinct brain structures located below the cerebral cortex is _____.

a. basal ganglia

b. brainstem

*c. subcortical structures

d. transcortical pathways

Cognitive domain: Knowledge

Answer location: What's Inside Your Head

Question type: MC

24. The _____ is a subcortical structure of the temporal lobe that plays an important role in memory and learning.

a. amygdala

b. basal ganglia

c. corpus callosum

*d. hippocampus

Cognitive domain: Knowledge

Answer location: What's Inside Your Head

Question type: MC

25. _____ means toward the front of the brain and _____ means toward the back of the brain.

*a. Anterior/posterior

b. Inferior/superior

c. Posterior/anterior

d. Superior/inferior

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: MC

26. _____ is a technique that uses electrodes attached to various locations on the scalp to record voltage fluctuations originating in the brain.

*a. EEG

b. ERP

c. fMRI

d. PET

Cognitive domain: Comprehension

Answer location: "Listening" to the Brain

Question type: MC

27. A specific ERP waveform that is tied to a particular cognitive process is known as a _____.

a. brainwave

*b. component

c. marker

d. voxel

Cognitive domain: Comprehension

Answer location: “Listening” to the Brain

Question type: MC

28. The _____ is an ERP component that has been linked to the processing of semantic anomaly.

a. FOXP2

*b. N400

c. P300

d. PET

Cognitive domain: Comprehension

Answer location:

Question type: MC

29. _____ is a brain imaging technique that produces a three-dimensional moving picture of blood flow by tracking gamma rays emitted from a mildly radioactive substance injected into the bloodstream.

a. EEG

b. fMRI

c. N400

*d. PET

Cognitive domain: Comprehension

Answer location: “Watching” the Brain in Action

Question type: MC

30. The brain-imaging technique known as fMRI takes advantage of differences in the magnetic properties of oxygenated and deoxygenated hemoglobin to track _____.

*a. blood flow

b. brainwaves

c. electrical activity

d. gamma rays

Cognitive domain: Comprehension

Answer location: "Watching" the Brain in Action

Question type: MC

Fill in the Blank

1. Scientists use the term _____ to refer to a conceptual framework that explains a set of observations in such a way that it also makes predictions about future observations.

*Answer: theory

Cognitive domain: Comprehension

Answer location: Just a Theory

Question type: FIB

2. The _____ is a procedure that assesses short-term memory capacity by having research participants repeat lists of digits.

*Answer: digit span task

Cognitive domain: Knowledge

Answer location: Just a Theory

Question type: FIB

3. A prediction about future observations that is derived from a theory is called a(n) _____.

*Answer: hypothesis

Cognitive domain: Knowledge

Answer location: Just a Theory

Question type: FIB

4. The principle that a theory must make predictions that have the potential to be disconfirmed by data is known as the _____.

*Answer: falsifiability criterion

Cognitive domain: Comprehension

Answer location: You Can't Prove It

Question type: FIB

5. Psychologist Alan Baddeley proposed a mechanism called the _____, which is a short-term memory buffer that can hold about two seconds of spoken language.

*Answer: phonological loop

Cognitive domain: Comprehension

Answer location: You Can't Prove It

Question type: FIB

6. The logical process of going from specific examples to general statements is known as _____.

*Answer: induction

Cognitive domain: Knowledge

Answer location: From Observation to Explanation

Question type: FIB

7. _____ is the logical process of going from general statements to specific examples.

*Answer: Deduction

Cognitive domain: Knowledge

Answer location: From Observation to Explanation

Question type: FIB

8. A study conducted under natural circumstances outside of the laboratory is called a(n) _____.

*Answer: field study

Cognitive domain: Knowledge

Answer location: From Observation to Explanation

Question type: FIB

9. The process of observing and describing a phenomenon is known as _____.

*Answer: naturalistic observation

Cognitive domain: Comprehension

Answer location: From Observation to Explanation

Question type: FIB

10. _____ is a mathematical technique that searches for relationships among variables in a set of data.

*Answer: Correlation

Cognitive domain: From Observation to Explanation

Answer location: Knowledge

Question type: FIB

11. The _____ is a means for systematically testing hypotheses in controlled situations.

*Answer: experimental method

Cognitive domain: Comprehension

Answer location: From Observation to Explanation

Question type: FIB

12. A(n) _____ is a simplified version of the phenomenon under investigation, typically in the form of a graph or set of mathematical equations.

*Answer: model

Cognitive domain: Comprehension

Answer location: From Observation to Explanation

Question type: FIB

13. A(n) _____ is a label given to a set of observations that seem to be related.

*Answer: construct

Cognitive domain: Knowledge

Answer location: Constructs

Question type: FIB

14. Scientists often make a(n) _____ definition of a construct in terms of how that construct is to be measured; one famous example is psychologist Edwin Boring's definition of intelligence as whatever is measured on an intelligence test.

*Answer: operational

Cognitive domain: Comprehension

Answer location: Constructs

Question type: FIB

15. _____ refers to the degree to which the measuring instrument actually measures what it is claimed to measure.

*Answer: Validity

Cognitive domain: Knowledge

Answer location: Constructs

Question type: FIB

16. _____ is the degree to which an instrument gives consistent measurements for the same thing.

*Answer: Reliability

Cognitive domain: Knowledge

Answer location: Constructs

Question type: FIB

17. A(n) _____ is a tightly controlled situation that has been intentionally designed to test a hypothesis.

*Answer: experiment

Cognitive domain: Knowledge

Answer location: Elements of an Experiment

Question type: FIB

18. The various types of treatment given to the different groups in an experiment are known collectively as the _____.

*Answer: independent variable

Cognitive domain: Knowledge

Answer location: Elements of an Experiment

Question type: FIB

19. The measurement of the response that each participant makes to the treatment in an experiment is known as the _____.

*Answer: dependent variable

Cognitive domain: Knowledge

Answer location: Elements of an Experiment

Question type: FIB

20. An experiment design that assigns each participant to every condition is said to be a(n) _____ design.

*Answer: within-subjects

Cognitive domain: Knowledge

Answer location: Elements of an Experiment

Question type: FIB

21. _____ is the scientific study of the cognitive processes involved in comprehending and producing language.

*Answer: Psycholinguistics

Cognitive domain: Comprehension

Answer location: Section 2.3 (Introduction)

Question type: FIB

22. The percentage of incorrect responses over a set of trials is called the _____.

*Answer: error rate

Cognitive domain: Knowledge

Answer location: Measured Response

Question type: FIB

23. A(n) _____ is a movement of the eyes back to a previously viewed location when reading or scanning a visual scene.

*Answer: regression

Cognitive domain: Comprehension

Answer location: Moving Eyes

Question type: FIB

24. A memory task in which participants are required to repeat the items in the correct order is known as a _____ recall task.

*Answer: serial

Cognitive domain: Comprehension

Answer location: Total Recall

Question type: FIB

25. In a(n) _____ recall task, participants hear or see a series of items and them recall those items after some time has passed.

*Answer: delayed

Cognitive domain: Comprehension

Answer location: Total Recall

Question type: FIB

26. An experimental task requiring the participant to decide between two options is called a(n) _____.

*Answer: two-alternative forced-choice

Cognitive domain: Knowledge

Answer location: Learning Without Knowing

Question type: FIB

27. The _____ lobe at the top of the head monitors body position and navigation through the environment.

*Answer: parietal

Cognitive domain: Knowledge

Answer location: What's Inside Your Head

Question type: FIB

28. The _____ lobe is by the forehead; it generates motor movement and is also responsible for planning and decision making.

*Answer: frontal

Cognitive domain: Knowledge

Answer location: What's Inside Your Head

Question type: FIB

29. The _____ is a subcortical structure of the temporal lobe that plays a role in regulating emotion and memory.

*Answer: amygdala

Cognitive domain: Knowledge

Answer location: Amygdala

Question type: FIB

30. The _____ make up a set of subcortical structures located where the brainstem joins the cerebrum, and they are responsible for procedural learning and the execution of routine actions.

*Answer: basal ganglia

Cognitive domain: Comprehension

Answer location: What's Inside Your Head

Question type: FIB

Essay Questions

1. Explain the difference between a theory and a hypothesis and tell how they are related to each other. What role does the falsifiability criterion play in experimental design? What is a model? Define construct and operational definition, explaining how they are related.

a. Theory explains a set of data; a hypothesis is a prediction derived from a theory.

b. Hypothesis tests the theory and must have the potential of being proven false.

c. Model attempts to explain the underlying mechanism of a theory in the form of a graph or set of mathematical equations.

d. Construct ties together a set of observations that seem to be related; operational definition defines the construct in terms of how it is to be measured.

Cognitive domain: Analysis

Answer location: SECTION 2.1: SCIENTIFIC METHOD

Question type: ESS

2. Describe the elements of an experiment, including a discussion of experimental and control groups as well as independent and dependent variables. What is the difference between a between-subjects and a within-subjects design? How do we use the results of an experiment to test a hypothesis?

a. Experimental group is given the treatment; control group provides baseline for comparison.

b. Independent variable refers to the type of treatment given each group; dependent variable refers to the measured response of the participants.

c. between-subjects—different participants in each group; within-subjects–same participants in each group

d. Hypothesis is expressed as greater than or less than relationship between groups; if data go in predicted direction, the hypothesis is supported.

Cognitive domain: Analysis

Answer location: SECTION 2.2: EXPERIMENT DESIGN

Question type: ESS

3. Describe the lexical decision task and the priming task. Explain the four types of recall tasks and describe what primacy and recency effects are. Discuss implicit learning and the way it is typically tested. What are head-mounted eye-tracking devices used for?

a. LDT—Decide as quickly and accurately as possible whether a letter string is a word; priming—The second word is responded to faster when it is related to the first word. LDT and priming are combined to test all sorts of hypotheses about language processing.

b. immediate—recall right after presentation; delayed—recall after some time has passed; free—recall in any order; serial—recall in order of presentation; P&R—first and last items presented usually best recalled

c. implicit learning—outside of conscious awareness, tested with forced-choice task

d. head-mounted eye-tracking device—records eye movements during reading or while scanning visual display during sentence comprehension or production

Cognitive domain: Analysis

Answer location: SECTION 2.3: BEHAVIORAL TECHNIQUES

Question type: ESS

4. Discuss the location of Broca's and Wernicke's areas and the roles they play in language processing. Explain how ERP measures brain activity and include a discussion of N400. Explain how fMRI measures brain activity. What are the advantages and disadvantages of ERP and fMRI?

a. Broca—left frontal lobe, speech production; Wernicke—left temporal lobe, speech perception

b. ERP—waveforms extracted from EEG, which measures electrical activity at the scalp; N400 is ERP response to semantic anomaly

c. fMRI—tracks blood flow in the brain by using the magnetic properties of blood

d. ERP—excellent temporal resolution, poor spatial resolution; fMRI—excellent spatial resolution, poor spatial resolution

Cognitive domain: Analysis

Answer location: SECTION 2.4: LANGUAGE AND THE BRAIN

Question type: ESS