

Essentials of Educational Psychology, 5e (Ormrod)
Chapter 2 Learning, Cognition, and Memory

1) Three of the following are examples of learned behavior. Given the textbook's definition of learning, which behavior is most likely *not* an example of learned behavior?

- A) Abigail cries because of a painful ear infection.
- B) After many hours of heated debate with a friend, Brian begins to modify his religious beliefs.
- C) Cara suddenly recognizes how the division fact " $24 \div 4 = 6$ " is related to the multiplication fact " $6 \times 4 = 24$."
- D) Ever since David was bitten by a German shepherd two years ago, he runs away from them when he sees them.

Answer: A

2) Reynelda has trouble tracing a complex shape with a pencil when she is in kindergarten, but she can do it quite well by the time she is in second grade. Is this an instance of *learning*?

- A) Yes, because her behavior has changed
- B) No, because the circumstances are too dissimilar
- C) Maybe, although the change may be due to physiological maturation rather than experience
- D) Maybe, but only if she is being reinforced for tracing accurately

Answer: C

3) Which one of the following best describes how neurons transmit messages to one another?

- A) By joining their axons
- B) By fusing the axon of one with a dendrite of the other
- C) By stimulating dendrites to "poke" neighboring neurons
- D) By sending chemical substances across a tiny gap between them

Answer: D

4) As Chalonte reads her science textbook, she encounters the word *ecology* for the first time and uses the context to figure out what the word means. Given what we know about how the brain functions, we could reasonably assume that most of her mental "work" is being done:

- A) In her right hemisphere.
- B) In many parts of her brain.
- C) In the occipital lobes, located at the back of her brain.
- D) In a part of the cortex known as Wernicke's area, above the left ear.

Answer: B

5) Which one of the following best describes our current knowledge about the brain and learning?

- A) We know that learning is associated with the formation of new synapses and may also involve creation of new astrocytes.
- B) We know that large doses of certain vitamins promote brain growth and lead to more rapid and efficient learning.
- C) We know that "left-brained" individuals are, on average, more effective learners than "right-brained" individuals.
- D) We know that the long-term memories of rapid learners are about 20% larger than the long-term memories of slow learners.

Answer: A

6) Which one of the following is located primarily in the upper and outer parts (the cortex) of the brain?

- A) Essential physiological processes (e.g., breathing, heart rate)
- B) Body movements (e.g., walking, riding a bicycle)
- C) Basic perceptual skills (e.g., coordinating eye movements)
- D) Complex thinking (e.g., reasoning, decision making)

Answer: D

7) Knowledge of brain physiology ("brain research") is useful to teachers because it:

- A) Identifies knowledge and skills that are important in a particular culture.
- B) Provides guidance as to how teachers can help students acquire knowledge and skills.
- C) Helps teachers understand the neurological bases of certain disabilities (e.g., dyslexia).
- D) Identifies which methods of instruction are most helpful in a particular subject area (e.g., science).

Answer: C

8) Behaviorists view learning differently than information processing theorists and constructivists do. Which one of the following statements best describes the difference?

- A) Behaviorism focuses on temporary changes; information processing theory and constructivism focus on long-term changes.
- B) Behaviorism focuses on long-term changes; information processing theory and constructivism focus on temporary changes.
- C) Behaviorism focuses on mental phenomena; information processing theory and constructivism focus on observable behaviors.
- D) Behaviorism focuses on observable behaviors; information processing theory and constructivism focus on mental phenomena.

Answer: D

9) Mr. Loosigian is worried about Jerri, a girl who is struggling in his seventh-grade class. He thinks about several different reasons why she might be having so much difficulty with her schoolwork. Which one of the reasons he considers is consistent with a *behaviorist* perspective of learning?

- A) "Maybe she isn't paying attention as much as she should be."
- B) "Maybe I don't praise her enough when she does something well."
- C) "Maybe she has trouble understanding the things she reads."
- D) "Maybe she has trouble remembering things from one day to the next."

Answer: B

10) Social cognitive theory can best be characterized as being concerned with learning:

- A) Communication skills.
- B) Socially appropriate behaviors.
- C) Through observations of others.
- D) From a sociological rather than psychological perspective.

Answer: C

11) Ms. Goodsell is thinking about how she might help the students in her introductory French class learn to pronounce the word *bonjour* correctly. Which one of her thoughts below is most consistent with a *social cognitive theory* perspective of learning?

- A) "If I explain the parts of the word—if I tell them that *bon* means "good" and *jour* means "day"—then they will have an easier time understanding why the word is pronounced the way it is."
- B) "I need to be patient. Correct pronunciation will come in time for those students who are really motivated to speak French."
- C) "Maybe I should explain how certain letters and letter combinations are consistently pronounced differently in French than they are in English."
- D) "Maybe I should show them how I form my mouth and lips as I pronounce the word and then encourage them to imitate me."

Answer: D

12) Which one of the following scenarios best reflects the basic idea of *individual constructivism*?

- A) A student receives a sticker from his music teacher when he is able to play the F major scale on his saxophone without any mistakes.
- B) Four students in a study group divide the day's reading assignment into four sections. Each student reads a section and then teaches the material to the other group members.
- C) A student tries to make sense of a poorly written and confusing magazine article.
- D) A student watches his physical education teacher as the teacher shows his class the arm motion for throwing a football.

Answer: C

- 13) Which one of the following scenarios best reflects the basic idea of *social constructivism*?
- A) Two students discuss possible interpretations of the proverb, "We only know the worth of water when the well is dry."
 - B) A teacher assigns a laboratory activity using cumbersome equipment that students can only use successfully by working in pairs.
 - C) When a student borrows a classmate's marker without asking and then forgets to put the cap back on, leaving it dried out and useless by the following morning, her teacher reminds her of one of the class rules: "Respect other students' property."
 - D) Four students in a study group divide the day's reading assignment into four sections. Each student reads a section and then teaches the material to the other group members.

Answer: A

- 14) Which one of the following statements best describes *sociocultural theory*?
- A) Children learn more effectively when they study material that is consistent with their preexisting beliefs about the world.
 - B) What children learn depends on the particular cultural context in which they grow up.
 - C) Children learn most effectively when the environment nurtures their social and emotional needs.
 - D) Children learn much more from their peers than they do from adults.

Answer: B

- 15) Three of the following statements are consistent with general principles of learning presented in the textbook. Which one is *not* consistent with these principles?
- A) Different people may learn different things from the same experience if they process it differently.
 - B) People don't just passively absorb knowledge like a sponge; instead, they actively construct it.
 - C) People learn in ways that are very similar to how most other animal species learn.
 - D) People's existing beliefs about a topic influence the new things they learn about the topic.

Answer: C

16) As his teacher reads a story, Wesley pictures the main characters the way he thinks they must look. By forming visual images based on the verbal descriptions his teacher reads, Wesley is _____ those descriptions.

- A) using verbal mediation to learn
- B) organizing
- C) retrieving
- D) encoding

Answer: D

- 17) Which one of the following is the best example of *encoding* while learning state capitals?
- A) Abe tries to learn that Richmond is the capital of Virginia by visualizing rich men (because it sounds like "Richmond") standing on a map of Virginia.
 - B) Bernice tries to learn that St. Paul is the capital of Minnesota by repeating "St. Paul, Minnesota" many times in rapid succession.
 - C) Corey tries to learn that Austin is the capital of Texas by making sure he is relaxed before he studies this information.
 - D) Darcy tries to learn that Sacramento is the capital of California by having a tape recorder play "Sacramento, California," over and over while she sleeps.

Answer: A

- 18) As human beings, we encounter a great many stimuli at any one time. Which one of the following alternatives most accurately reflects educational psychologists' perspective about how we respond to all these stimuli?

- A) By learning to use effective long-term memory storage processes, we can eventually begin to remember almost everything we encounter.
- B) We must select the things we think are most important to learn and remember, and ignore the rest.
- C) We remember virtually everything we experience, but we have trouble retrieving most of it.
- D) We cannot remember everything, and we have little control over the things that we *do* remember.

Answer: B

- 19) Which one of the following statements best describes the idea that learning involves a process of *construction*?

- A) Students must learn certain things very well before they can begin to understand other things.
- B) Students must learn ideas in a concrete form before learning them as abstractions.
- C) Students combine pieces of information about a topic to create their own understandings.
- D) Students develop increasingly complex and sophisticated thought processes as they grow older.

Answer: C

- 20) Many psychologists believe that learning and understanding are often quite *constructive* in nature. Three of the following scenarios illustrate such construction. Which scenario does *not* necessarily involve construction in learning?

- A) Although no one has ever told her so, Peggy thinks that the night sky is a big black blanket covering the earth and that the blanket has tiny holes through which the stars shine.
- B) Mr. McFarland asks his third graders to practice their multiplication tables every day. After a month of such practice, Misty can retrieve all the basic multiplication facts quickly and easily.
- C) When George reads about the Vietnam War in his history book, he comes to the conclusion that the United States should never have gotten involved in Southeast Asia.
- D) Because the word *photosynthesis* begins with *photo*, Jeremy guesses that it must have something to do with taking photographs.

Answer: B

21) When cognitive psychologists talk about the process of "putting" things in memory, they often use the term:

- A) Retrieval.
- B) Selectivity.
- C) Inference-drawing.
- D) Storage.

Answer: D

22) During a lecture about World War II, Mr. Cochran tells his class about some of the major leaders of the countries involved in the war. He then asks Kathy to identify the leader of Great Britain during World War II, and she correctly responds, "Winston Churchill." At the time she answers the question, Kathy is exhibiting:

- A) Storage.
- B) Retrieval.
- C) Elaboration.
- D) Rehearsal.

Answer: B

23) Which one of the following statements best describes the *sensory register*?

- A) It holds everything that is sensed in a relatively unencoded fashion.
- B) It encodes information largely in terms of underlying meanings.
- C) It holds only a small amount of information, selecting things that will probably be important to know.
- D) It holds only a small amount of information, selecting things more or less at random.

Answer: A

24) Which one of the following best reflects the use of the *sensory register* component of memory?

- A) You can remember a tune for several hours, even though you don't remember the words.
- B) You can remember something you heard for a second or two even though you weren't paying attention.
- C) You can remember the name of a person just long enough to introduce her to someone else.
- D) You can remember the concept of *reinforcement* because you are able to relate it to your own past experiences.

Answer: B

25) Which one of the following statements best characterizes the duration of the sensory register?

- A) Information can last indefinitely in the sensory register if the visual or auditory image is periodically retrieved.
- B) Meaningless information fades quickly, but meaningful information may remain for hours.
- C) Visual information lasts less than a second, with auditory information lasting a bit longer.
- D) Information remains for about 10 seconds regardless of its nature.

Answer: C

26) Mr. Wagner stands in front of the class explaining the process of evolution. Ellen is sitting in the front row, but her mind is on the argument she had with her best friend just before class. Based on this information, how far in Ellen's memory system did Mr. Wagner's lecture get?

- A) It reached the sensory register.
- B) It reached working memory.
- C) It reached long-term memory.
- D) It never got into the memory system at all.

Answer: A

27) Psychologists often emphasize the importance of *attention* in the learning process. From the perspective of the three-component model of memory, why is attention so important?

- A) It gets information into the sensory register.
- B) It moves information from working memory into long-term memory.
- C) It moves information from the sensory register into long-term memory.
- D) It moves information from the sensory register into working memory.

Answer: D

28) Considering how psychologists characterize attention, identify the pair of activities that most people would have the most trouble doing at the exact same time.

- A) Thinking about what to cook for dinner while combing one's hair
- B) Watching a YouTube video while studying for an exam
- C) Carrying on a conversation about the meaning of life while walking down the street
- D) Mentally planning a weekend camping trip while jogging

Answer: B

29) Which one of the following statements best characterizes *working memory* (sometimes known as short-term memory)?

- A) It holds information for several hours and includes only things that we know we will need later on.
- B) It holds information for two to five minutes, longer if we engage in rehearsal.
- C) It actively processes a small amount of information, typically holding it for less than a minute.
- D) It holds processed information for several days or weeks, but usually not forever.

Answer: C

30) Susan hears her teacher say, "Seven times nine is 63," and immediately repeats this math fact to herself three times. Five minutes later, Susan cannot respond correctly when her teacher asks, "What is seven times nine?" Based on this information, how far in Susan's memory system did the math fact probably get?

- A) It reached the sensory register.
- B) It reached working memory.
- C) It reached long-term memory.
- D) It never got into the memory system at all.

Answer: B

31) Which one of the following situations reflects the typical duration of working memory?

- A) Arnie remembers his locker combination through the entire school year. By the end of summer vacation, however, he has forgotten it.
- B) At noon, Barney makes a mental list of the five homework assignments he needs to complete that night. At 3:00 he checks himself and realizes that he still remembers all five. However, by 7:00 p.m. he cannot recall two of the five assignments.
- C) Carol remembers most of the information she has been learning about World War II in class this week, but she remembers very little of what she learned about World War I two weeks ago.
- D) Darrell looks up the correct spelling of the word *fossil*, repeats the letters once, and closes the dictionary. By the time he finds a piece of paper on which to write the word, he has forgotten how to spell it.

Answer: D

32) Eunice had trouble learning the formula for calculating the area of a circle, so she is saying it to herself over and over while the teacher passes out a geometry test. Eunice is demonstrating:

- A) Storage in the sensory register.
- B) Retrieval from long-term memory.
- C) The use of rehearsal.
- D) The use of verbal mediation.

Answer: C

33) The fact that it is difficult to think about too many things all at the same time, such as watching a YouTube video and studying for a test, reflects:

- A) The nature of the sensory register.
- B) The concrete nature of visual imagery.
- C) The constructive nature of long-term memory.
- D) The limited capacity of working memory.

Answer: D

34) Jay knows what a "smart phone" (such as an iPhone) is and knows how to send a text message. The difference between these two kinds of knowledge can best be characterized as a difference between:

- A) Declarative knowledge vs. procedural knowledge.
- B) Visual imagery vs. elaboration.
- C) Rehearsal vs. organization.
- D) Long-term memory vs. working memory.

Answer: A

35) To prepare for his test on Tuesday morning, Harry studied on Monday night. He remembered the information long enough to do well on the test on Tuesday but could not remember it for a surprise quiz a week later. Based on this information, how far in Harry's memory system did the information get?

- A) It reached the sensory register.
- B) It reached working memory.
- C) It reached long-term memory.
- D) It never got into the memory system at all.

Answer: C

36) Which one of the following statements best describes the three-component model of memory presented in the textbook?

- A) All information that reaches the sensory register also reaches working memory, but only a small percentage of this information is stored in long-term memory.
- B) Information that must be remembered for a long time goes directly from the sensory register to long-term memory; less important information is stored in working memory.
- C) The three components of memory are used to store different kinds of information: visual images are stored in the sensory register, most numerical information is stored in working memory, and verbal information is stored in long-term memory.
- D) All information that enters long-term memory must first pass through the sensory register and working memory.

Answer: D

37) Gretchen thinks about Christopher Columbus, which reminds her of Spain, which in turn reminds her that she needs to do her homework for her Spanish class. Which one of the following does Gretchen's train of thought best illustrate?

- A) The interconnectedness of long-term memory
- B) Elaboration in working memory
- C) Reconstruction error in retrieval
- D) Encoding during long-term memory storage

Answer: A

38) Which one of the following statements best describes a *concept*?

- A) A definition that is learned verbatim
- B) A vague, intuitive idea about an area of knowledge
- C) A category of similar objects or events
- D) A concrete example of an abstract idea

Answer: C

39) In contemporary psychology, a *schema* can best be described as:

- A) Tightly organized sets of facts about a certain concept or phenomenon.
- B) A plan of action regarding how to learn something.
- C) A set of reasons why a student would want to learn something.
- D) A basic piece of information upon which most other knowledge must build.

Answer: A

40) Wendy sees a picture of a beach and then later tries to draw the picture from memory. She draws shells on the beach even though the beach in the picture had no shells. Using psychologists' concept of *schema*, how could we explain Wendy's error?

- A) Wendy has a schema for shells but does not have one for beaches.
- B) Wendy has a schema for beaches but does not have one for shells.
- C) Wendy's schemas of beaches and shells are interfering with each other.
- D) Wendy's schema of a typical beach includes shells.

Answer: D

- 41) In contemporary psychology, a *script* can best be described as:
- A) A prescribed way of talking oneself through a difficult situation.
 - B) Knowledge about the typical sequence of events in an activity.
 - C) The things (e.g., "small talk") that someone typically says when initiating a conversation with someone else.
 - D) The approach a teacher tells students to use in order to remember classroom material.

Answer: B

- 42) Four boys read this line from a story: "The two men entered the restaurant and ordered hamburgers." Which one of the boys is clearly using a *script* while reading the story?

- A) Alex assumes that the men probably looked at a menu before ordering.
- B) Bob is guessing that the men probably have evil motives.
- C) Colin wonders what the men look like.
- D) Devon thinks that the men should be more careful about their cholesterol intake.

Answer: A

- 43) Which one of the following statements best describes psychologists' proposal that children's knowledge sometimes takes the form of *theories*?

- A) The ways in which children categorize their experiences usually have little relevance to physical reality.
- B) Children develop a general set of beliefs about how the world operates.
- C) In the early years, children develop concrete understandings of events; these understandings become increasingly abstract as they reach adolescence.
- D) Children form hypotheses about what things are and are not examples of a concept.

Answer: B

- 44) Which one of the following examples best illustrates the use of a personally constructed *theory* as a child learns the concept *spider*?

- A) Julian assumes that spiders give birth to live baby spiders, just as people give birth to live infants.
- B) Ian learns that spiders have eight legs, whereas insects have only six.
- C) Rudy learns that spiders, along with scorpions and ticks, are members of the arachnid class.
- D) Duc remembers what happened when his cousin was bitten by a black widow spider.

Answer: A

- 45) Three of the following statements accurately characterize *rote learning*. Which statement is *not* true of rote learning?

- A) Few if any connections are made to existing knowledge.
- B) Information is learned in a relatively meaningless fashion.
- C) Repetition is the main strategy used during storage.
- D) Information is stored as one or more visual images.

Answer: D

46) Nicole learns the formula " $E = mc^2$ " by repeating it to herself many times. Which one of the following processes is Nicole most clearly demonstrating?

- A) Elaboration
- B) Meaningful learning
- C) Rehearsal
- D) Internal organization

Answer: C

47) To learn how to spell *rhinoceros*, Paula repeats the letters of the word over and over without really thinking about what she is saying or using any other encoding strategies. Considering what psychologists have learned about the effectiveness of rehearsal, we can predict that Paula's strategy will be:

- A) Highly effective.
- B) Effective only if she says the letters in a very loud voice.
- C) Effective only if she says the letters slowly (e.g., at a rate of one letter per second).
- D) Relatively ineffective.

Answer: D

48) Four students are storing this fact: "Europeans first settled at St. Augustine, Florida, in 1565." Based on the following information, which student is probably going to have the *most difficult* time retrieving the information from long-term memory a few days later?

- A) Alexander repeats the fact to himself 10 times in a row.
- B) Blondie once visited the fortress there and recalls that it was several hundred years old.
- C) Cookie realizes that 1565 was more than four hundred years ago.
- D) Dagwood realizes that the Spanish settled in St. Augustine, Florida, before the Pilgrims landed at Plymouth.

Answer: A

49) Travis realizes that the year World War II ended—1945—is the same year his grandfather was born. Which one of the following processes is Travis most clearly demonstrating?

- A) Use of a mnemonic
- B) Meaningful learning
- C) Rehearsal
- D) Distributed practice

Answer: B

50) In which of these situations is information most likely to be stored effectively in long-term memory?

- A) Abby looks up the correct spelling of *independence* and immediately writes it down.
- B) Bob repeats "Comment allez vous?" after his teacher five times in a row.
- C) Corinne realizes that the word *receive* follows the "I before E except after C" rule.
- D) David stares at a page in his textbook trying to form a visual snapshot of the page in his mind.

Answer: C

51) Which one of the following alternatives best describes the process of *elaboration* of new information?

- A) Paying careful attention to the most important aspects of new information
- B) Failing to notice significant aspects of new information
- C) Constructing meaning by adding something already known to new information
- D) Remembering the order in which several pieces of new information are received

Answer: C

52) Tyler learns that Christopher Columbus's first voyage across the Atlantic was financed by Queen Isabella of Spain. He thinks to himself, "She probably thought she would make a profit on her investment." By speculating about the queen's motives, Tyler is demonstrating which one of the following processes?

- A) Elaboration
- B) Imagery
- C) Rehearsal
- D) Organization

Answer: A

53) When you are studying for a test, you may often try to identify interrelationships among the new pieces of information you are learning. Psychologists call this process:

- A) Facilitative interference.
- B) Organization.
- C) Rehearsal.
- D) Automaticity.

Answer: B

54) To help herself learn the early explorers of the New World, Jessica makes a chart that lists the Spanish explorers together, the Portuguese explorers together, the French explorers together, and so on. Which one of the following processes is Jessica most clearly demonstrating?

- A) Elaboration
- B) The keyword technique
- C) Rehearsal
- D) Organization

Answer: D

55) Cordell is trying to remember the various rocks he has been studying in his earth science class (granite, sandstone, limestone, obsidian, marble, etc.). He finally decides it would be easiest if he studied them as three groups: sedimentary, igneous, and metamorphic. Considering research regarding this strategy, Cordell should:

- A) Have an easier time remembering them because he's organizing them.
- B) Have a more difficult time remembering them because he must remember the three groupings as well as the rocks themselves.
- C) Have an easier time remembering them only if he also looks at pictures of each kind of rock.
- D) Have a more difficult time remembering them because he's using only rehearsal to learn them.

Answer: A

56) As Jane reads about General Custer's last stand, she pictures him as he must have looked, with long blonde hair and a full mustache, riding tall and proud on the open plain just before he was attacked. Considering what psychologists have learned about the effectiveness of visual imagery, we can predict that Jane will:

- A) Get confused by the vividness of her visual image.
- B) Remember the information better than she might otherwise.
- C) Store the information in her working memory rather than in her long-term memory.
- D) Remember her image without any loss of detail for a year or longer.

Answer: B

57) Sarah needs to know her division facts for a quiz tomorrow. She wants to do as well as she possibly can on the quiz. Taking what psychologists have learned about *automaticity* into account, which one of the following would be the best advice to give Sarah?

- A) "Repeat each fact at least five times silently."
- B) "Repeat each fact at least five times out loud."
- C) "Study the facts until you know each one and then do something entirely different until morning."
- D) "Study the facts until you know them all perfectly, and then continue to practice them periodically after that."

Answer: D

58) Mr. Martinez wants his first-grade students to be able to identify 200 reading words quickly and automatically. Which one of the following techniques will best help his students achieve that goal?

- A) Tell them how important it is for them to know the words.
- B) Explain how the letters of the words are related to their pronunciations.
- C) Explain how some of the letters in the words are "silent letters."
- D) Give them lots of practice reading the words.

Answer: D

59) Which one of the following statements best describes how learners often acquire *procedural knowledge*?

- A) Learners first learn it as declarative knowledge; with time and practice, it gradually becomes procedural knowledge.
- B) Learners first learn it as one or more auditory images; eventually, they recode it into visual images.
- C) Learners initially acquire it in an automatic, "unthinking" form; eventually, it evolves into knowledge that they can talk about and describe.
- D) Learners bypass working memory; the knowledge goes immediately from the sensory register into long-term memory.

Answer: A

60) Considering developmental trends in long-term memory storage processes, choose the statement that best characterizes how *kindergartners* are apt to approach school learning tasks.

- A) They construct vivid visual and auditory images of what they see and hear in the classroom.
- B) They make mental lists of things to remember, but with little follow-through in studying the lists.
- C) They make few, if any, intentional efforts to learn and remember something.
- D) They continually ask "why" questions to help them make better sense of classroom subject matter.

Answer: C

61) Considering developmental trends in long-term memory storage processes, choose the statement that best characterizes how *high school students* are apt to approach school learning tasks.

- A) Even at the high school level, most students do little or nothing to help them learn and remember school subject matter.
- B) Students rely largely on visual imagery for visual information; they are more apt to use rehearsal for auditory information.
- C) Some students intentionally elaborate on and organize class material; others rely largely on rehearsal.
- D) Elaboration and organization decrease over the high school years, in large part because such storage processes are less necessary as the brain matures to an adultlike form.

Answer: C

62) Generally speaking, meaningful learning is an effective way of learning and remembering new information. An exception to this rule is when students:

- A) Relate it to prior knowledge acquired before age 10.
- B) Elaborate on the information using previously acquired misconceptions.
- C) Organize it as a hierarchy rather than as a two-dimensional matrix.
- D) Learn it very quickly.

Answer: B

63) Three of the following are common misconceptions that elementary or secondary students are likely to have. Which one is *not* necessarily a common misconception?

- A) Any moving object has a force acting on it.
- B) Most animals can survive for months without food.
- C) Rivers always flow from north to south.
- D) The earth is shaped like a disk.

Answer: B

64) Which one of the following illustrates *confirmation bias*?

A) Barack feels much better when his teacher gives him a high grade rather than low grade on a writing assignment. He gets depressed when he thinks his work might be anything less than perfect.

B) When Lavina reads about the migratory behavior of Canada geese, she is very curious about why the geese travel along certain routes (flyways). She spends an entire evening searching the Internet for a scientific explanation of their behavior.

C) In his geography class, Carlos likes the unit on South America more than the unit on Africa because his grandfather was born and raised in Colombia.

D) Jayne thinks that metal objects always sink. When she places an aluminum pie plate in a tub of water and sees that it floats, she says, "It only *looks* like aluminum; it must be plastic with silver paint on it."

Answer: D

65) Successful retrieval of information from long-term memory depends on three of the following factors. On which one does retrieval *not* depend?

A) The part of long-term memory being searched

B) How the information was stored in the first place

C) The duration of a learner's working memory

D) The presence of relevant retrieval cues

Answer: C

66) Lucy sees a boy who looks very familiar to her, but she can't remember who he is. Then the boy says something with a thick French accent, and Lucy suddenly realizes that he is the foreign exchange student from France. In this situation, the boy's French accent helps Lucy remember by:

A) Providing a retrieval cue.

B) Evoking a visual image.

C) Helping her elaborate on stored information.

D) Facilitating a reorganization of her long-term memory.

Answer: A

67) To remind her first-grade son Kevin to bring his umbrella home from school, his mother pins a drawing of an umbrella to Kevin's jacket collar. Kevin's mother is helping him remember the umbrella through the use of:

A) A superimposed meaningful structure.

B) A retrieval cue.

C) The keyword method.

D) Verbal mediation.

Answer: B

68) An advantage of knowing some skills to automaticity is that such skills:

A) Require less working memory capacity.

B) Promote the development of retrieval cues.

C) Make meaningful learning of those skills unnecessary.

D) Enhance the reconstructive nature of retrieval.

Answer: A

69) A language arts teacher teaches her students the parts of speech (nouns, verbs, adjectives, etc.) and wants her students to continue to remember them as they study English and foreign languages in the years to come. Considering the factors affecting retrieval of information from long-term memory, choose the strategy below that should maximize the likelihood that students will remember the different parts of speech over the long run.

- A) Have students study them early in the school year and periodically review them in various contexts throughout the year.
- B) Have students study them intensely for a month, and then stay away from any discussion of them for the rest of the school year.
- C) Have students study each part of speech separately, perhaps a different one each month.
- D) Have students memorize definitions of each part of speech until they can recite the definitions word for word.

Answer: A

70) Morris is trying to remember how to spell the word *broccoli*. He retrieves the first three letters (B R O) and the last three (O L I), then assumes that the "kuh" sound in the middle of the word must be a K. He writes "brokoli" on his paper. Morris' process of remembering how to spell the word (in this case, incorrectly) illustrates the use of:

- A) A script.
- B) A retrieval cue.
- C) Construction in retrieval.
- D) Verbal mediation.

Answer: C

71) Which of the following statements does *not* have a solid foundation in brain-based research?

- A) Physical exercise can enhance the functioning of the central executive.
- B) Mental "relaxation" is usually not needed because it wastes time that could otherwise be spent learning something new.
- C) Learning activities that provide intellectual stimulation can foster the growth of new neurons.
- D) A good night's sleep can lead to improved memories.

Answer: B

72) Jenny is taking a quiz that asks for the chemical symbols of 20 elements. She remembers 19 of them but cannot remember the symbol for mercury. As she walks home from school, she suddenly remembers that the symbol for mercury is *Hg*. Jenny's memory problem during the quiz can best be explained in terms of:

- A) The effects of misconceptions.
- B) Reconstruction error.
- C) Decay.
- D) Failure to retrieve.

Answer: D

73) Which of the following is *not* consistent with brain research?

- A) Teachers should challenge students to think nonstop throughout the day so that they don't have any time for "mental relaxation."
- B) Physical exercise has been shown to enhance the functioning of the central executive.
- C) Sleep is important to learning because students consolidate new memories while they are sleeping.
- D) Physical exercise is beneficial to the health of the brain.

Answer: A

74) The textbook recommends a number of strategies for increasing students' attention in the classroom. Which one of the following alternatives, while possibly beneficial for other reasons, is *not* necessarily recommended as a strategy for increasing attention?

- A) Follow a predictable routine every day.
- B) Vary classroom presentation methods.
- C) Encourage note taking.
- D) Provide concrete manipulatives with which students can discover some ideas for themselves.

Answer: A

75) Three of the following teachers are using strategies that should help students learn information effectively. Which one is *not* necessarily promoting effective cognitive processing?

- A) Mr. Ayotte helps students identify important ideas in their textbooks.
- B) Ms. Bertinelli has students repeat definitions of new vocabulary words out loud.
- C) Mr. Canton makes sure that students are paying attention before he begins class.
- D) Ms. Darwin talks about how famous battles in history are in some ways similar to the conflicts students sometimes have on the playground.

Answer: B

76) Three of these teachers will probably promote meaningful learning in their students. Which teacher, although possibly using a beneficial instructional strategy, is *unlikely* to promote *meaningful learning*?

- A) Mr. Pulos demonstrates how the area of a triangle (area = $1/2$ base \times height) is half of something his students already know—the area of a rectangle.
- B) Ms. Rubenstein asks her students to define *peninsula* in their own words.
- C) Mr. Warner encourages his third graders to practice their cursive letters at least once every day.
- D) Ms. Elms points out that the German word *krank* (meaning "sick") might be related to the English word *cranky*.

Answer: C

77) Three of the following mathematics teachers are using techniques that should help their students remember information. Which one is using a relatively *ineffective* technique?

- A) Mr. Allen uses wooden blocks and diagrams to help students understand how the volume of a cube is calculated.
- B) Ms. Batchelder asks students to think of real-life problems requiring the use of multiplication.
- C) Mr. Constanza shows his students how division is simply the reverse of multiplication.
- D) Ms. Davenport asks her students to memorize textbook definitions of eight geometric figures.

Answer: D

78) Only one of the following teaching practices is consistent with what we know about working memory. Which one?

A) Mr. Adamson tells his students that, with practice, they will be able to do complicated long division problems in their heads.

B) Ms. Borelli tells her students that they should try to focus on main ideas rather than try to remember every detail.

C) Ms. Constatas suggests that students in her Russian class listen to Russian audiotapes while they sleep.

D) Mr. Dominowski urges his students to put information for tomorrow's test in their "short-term memories."

Answer: B

79) Ms. Iwata has a long-term goal for her science students: to consider what they have learned about science as they deal with issues and problems in their daily lives. What teaching strategy will best help her students *retrieve* relevant scientific principles when they need them the most?

A) Make sure that students study those principles in a no-anxiety situation.

B) Associate those principles with as many real-life situations as possible.

C) Maximize the use of concrete materials, and minimize the use of abstract ideas.

D) Maximize the use of abstract ideas, and minimize the use of concrete materials.

Answer: B

80) When beginning a unit on the digestive system with his fourth graders, Mr. Macum asks his students, "What happens when you chew your food? Your teeth are working hard, to be sure. But what else does your mouth do when it has food in it?" Mr. Macum is using a strategy known as:

A) Prior knowledge activation.

B) The keyword method.

C) Verbal mediation.

D) A script.

Answer: A

81) The textbook describes a study by Bartlett in which college students in England read a Native American ghost story entitled "The War of the Ghosts." From Bartlett's results, we can conclude that students who read a story written from the perspective of a culture different from their own are likely to:

A) Reject the story as being ridiculous or far-fetched.

B) Form unwarranted and prejudicial attitudes about people from the other culture.

C) Interpret the story in a way that's more consistent with their own culture.

D) Construct a more multicultural perspective of the world.

Answer: C

82) Ms. Rushing, a middle school science teacher, wants her students to develop a good understanding of principles related to the concepts of *force* and *velocity*. Three of the following strategies should help her students construct such an understanding. Which strategy would educational psychologists be *least* likely to advocate for promoting effective knowledge construction related to force and velocity?

- A) Have students experiment with objects to observe the effects that force has on velocity.
- B) Perform classroom demonstrations that illustrate the concepts of force and velocity, and have students discuss alternative interpretations of the phenomena they observe.
- C) Have students apply principles of force and velocity to a task in which they must move a heavy object across the room.
- D) Make sure that students can recite definitions of both force and velocity and can repeat basic principles regarding how the two are interrelated.

Answer: D

83) Which one of the following teaching practices is most likely to encourage students to *elaborate* as they study new material?

- A) Help them locate Berlin on a map of Europe.
- B) Ask them how they might apply the principle that gas expands when heated.
- C) Ask them, "Who remembers what the chief exports of Japan are?"
- D) Say, "Yesterday we learned the safe way to hand a pair of sharp scissors to someone else. Who can show us what we learned to do?"

Answer: B

84) Which one of the following statements best describes the notion of *conceptual understanding*?

- A) Students learn all the facts that a teacher or textbook presents related to a topic.
- B) Students suddenly realize that a particular belief they have is incorrect.
- C) Students can describe two opposing perspectives about a controversial issue.
- D) Students learn ideas related to a topic in a meaningful and integrated fashion.

Answer: D

85) Three of the following teaching strategies are likely to help students acquire a conceptual understanding of classroom subject matter. Which strategy, though possibly beneficial for other reasons, is *least* likely to promote conceptual understanding?

- A) Exploring a topic in depth
- B) Developing automaticity of basic skills
- C) Asking students to teach a topic to a classmate
- D) Showing students how several ideas are logically interrelated

Answer: B

86) Which one of the following teaching strategies best illustrates many educational psychologists' belief that, in some situations, *less is more*?

- A) Provide a general overview of a topic before discussing it in depth.
- B) Present general ideas about a topic but minimize the use of supporting details.
- C) Teach fewer topics, but teach each one more thoroughly.
- D) Teach classroom material in short intervals of time, with lessons typically lasting 30 minutes at the most.

Answer: C

87) A biology teacher wants students to remember the various components of a *cell* (nucleus, cytoplasm, cell membrane). Considering what psychologists have learned about storage and retrieval, the teacher would be well advised to help students encode information about the cell:

- A) Primarily in a visual form, because visual images usually remain vivid in memory for a long period of time.
- B) Primarily in a verbal form, because language underlies much of human learning.
- C) In both visual and verbal forms.
- D) In a relatively unencoded form for a few days, to allow for greater flexibility in encoding later on.

Answer: C

88) Which one of the following statements best describes *wait time* and its typical effects?

- A) When teachers give students about five minutes of "thinking time" at the beginning of class, students are more likely to learn class information meaningfully.
- B) When teachers allow students more time to learn something, students are more likely to learn effectively.
- C) When teachers wait until students are ready to pay attention, students are more likely to learn effectively.
- D) When teachers allow students more time to respond to a question, students are more likely to answer the question and explain their reasoning.

Answer: D

89) When teachers increase their wait time from one second to three seconds, other teacher behaviors are likely to change as well. Which one of the following is *not* a typical outcome of increasing wait time?

- A) Teachers often lose the momentum of classroom activities.
- B) Teachers ask more complex questions.
- C) Teachers' expectations for student performance increase.
- D) Teachers pursue some topics in greater depth.

Answer: A

- 90) Three of the following are examples of *mnemonics*. Which one is *not* a mnemonic?
- A) To learn how to drive a car with a standard transmission, Bart practices the various parts of the task (e.g., steering, shifting, and braking) separately.
 - B) To learn the letters identifying the spaces on the treble clef in written music (F A C E), Annabelle simply remembers the word *face*.
 - C) To learn that the Spanish word *pájaro* means "bird," Corey pictures a bird wearing pajamas.
 - D) To learn that the Spanish word *navidad* means "Christmas," Dorene thinks of the word "nativity."

Answer: A

91) Norman is studying Chinese and needs to remember that the word for "exit" is *chu*, so he remembers the sentence, "The choo-choo train is exiting the station." Norman's technique illustrates the use of:

- A) Reconstructive retrieval.
- B) The keyword method.
- C) A superimposed meaningful structure.
- D) Verbal mediation.

Answer: D

92) To remember the four states that come together at a single point (Colorado, Arizona, New Mexico, and Utah), Marcia remembers "CANU" (pronounced like "canoe"). Marcia's technique illustrates the use of:

- A) The keyword method.
- B) A superimposed meaningful structure.
- C) Visual imagery.
- D) Verbal mediation.

Answer: B

93) To remember that the capital of the state of Washington is Olympia, Bart forms a mental image of George Washington running a race in the Olympics. Bart's technique illustrates:

- A) The keyword method.
- B) Verbal mediation.
- C) A superimposed meaningful structure.
- D) Reconstructive retrieval.

Answer: A

94) If you wanted to help students learn something by using a *mnemonic*, which one of the following sentences would you use?

- A) "Area equals length times width" is the formula for calculating the area of a rectangle.
- B) "Do unto others as you would have them do unto you" is the Golden Rule.
- C) "My very energetic mother just slugged Uncle Norton" tells us the eight planets in the solar system.
- D) "Washington, Adams, Jefferson, Madison, Monroe, and Adams" are the first six presidents of the United States.

Answer: C

95) Mnemonics probably facilitate learning and memory in a number of ways. Which one of the following is *not* a potential advantage of mnemonics?

- A) They relate new information to what a learner already knows.
- B) They expand the capacity of working memory.
- C) They help organize information.
- D) They provide retrieval cues to aid recall.

Answer: B

96) Three of the following strategies should help students remember academic material over the long run. Considering guidelines presented in the textbook, which one will *not* help them?

- A) Reviewing the material periodically over the course of several days or weeks
- B) Engaging in meaningful learning by relating the material to a situation in which they are likely to use it
- C) Elaborating by drawing inferences from the things they study
- D) Preventing confusion by learning each piece of information at a different time

Answer: D

97) Mr. Gainer wants to teach his students good form in shooting a basketball. Given what we know about teaching procedural knowledge, which strategy is *least* likely to be effective in helping students learn the procedure correctly?

- A) Showing students each part of the motion: how to hold the ball, how to push the ball upward, how to coordinate the jump with the push, and so on
- B) Explaining how the recommended form allows for greater distance and accuracy than other approaches
- C) Asking students to practice their new skill only when he is able to watch them
- D) Telling students to remember "BEEF": balance the ball, elbows in, elevate the arms, follow through

Answer: C

98) Which one of the following statements is consistent with the textbook's recommendations for promoting *retrieval*?

- A) Teach students how to create and use their own retrieval cues.
- B) Show students how to use the keyword method to help them remember lists of 10 items or more.
- C) Spend approximately two-thirds of each class day reviewing things that students already know.
- D) At the secondary school level, always use essay tests rather than multiple-choice tests.

Answer: A

99) Which one of the following best describes the process of *conceptual change* as psychologists use the term?

- A) Acquiring a more sophisticated vocabulary with which to describe the events in one's life
- B) Revising one's beliefs after receiving information that contradicts those beliefs
- C) Achieving the instructional objectives that a teacher has established for a lesson or unit
- D) Developing new categories to classify objects and events

Answer: B

100) Which one of the following examples illustrates *conceptual change*?

- A) As a Boy Scout, Andy has learned how to cook a wide variety of foods over an open fire.
- B) Brad misinterprets the scientific explanation of fire to fit what he believes: that fire is an object with substance and weight.
- C) Charlotte used to think that fire was an actual substance, but now she knows it's a chemical change.
- D) Danielle wasn't aware of how much damage fire could really do until the house next door burned down.

Answer: C

101) Which one of the following strategies is *most* likely to encourage students to correct their existing misconceptions?

- A) Give students as much information about a topic as possible.
- B) Show students how new information contradicts what they presently believe.
- C) Point out that "smart" students don't misunderstand classroom topics.
- D) Encourage students to take extensive notes on their reading assignments.

Answer: B

102) Each of the teachers below has students with misconceptions about the material they are studying. Three of the teachers are using strategies that should help their students correct these misconceptions. Which teacher is *not* using an effective strategy for changing misconceptions?

- A) Ms. Andersen gives corrective feedback when students make statements that reflect misconceptions.
- B) Mr. Bissette presents a situation that students cannot adequately explain using their current beliefs about the topic.
- C) Ms. Caro reminds her students that she will be testing them on the material they are studying.
- D) Mr. Darren shows students how the true explanation of something is different from, and more plausible than, their existing beliefs.

Answer: C

103) The textbook suggests that students often engage in rote learning rather than meaningful learning of school subject matter because:

- A) It is human nature to do so unless taught otherwise.
- B) Rote learning is more effective than meaningful learning for children younger than age 10.
- C) Information learned at a rote level is stored in working memory more quickly.
- D) Classroom assessment practices often encourage it.

Answer: D

104) Three of the following children have been diagnosed as having attention-deficit hyperactivity disorder. Which one is *least* likely to have ADHD?

A) Eva daydreams in class a lot. She tends to stare at books without reading them, and her teacher often needs to repeat the same instructions several times.

B) Martin rarely stays in his seat for more than 10 minutes, and his hands are always fidgeting with something. He needs frequent reminders to get back on task, and transitions are challenging for him.

C) Caroline turns her head toward every sound she hears. The sound of a pencil dropping catches her attention as easily as a fire alarm. Often she is so engrossed in listening to happenings in the hall or across the room that she doesn't hear someone who is speaking directly to her.

D) Ben is consistently on the honor roll at school. His favorite times of day are recess and gym because he enjoys physical activity. It's hard for him to sit still on rainy afternoons when he hasn't had a chance to burn off some energy.

Answer: D

105) Three of the following examples illustrate specific strategies that can be effective in helping students with *learning disabilities* learn classroom material. Which strategy is *least* likely to be effective with these children?

A) Russell's teacher suggests that he listen to his favorite radio station while he studies for tomorrow's spelling test.

B) Nattie's teacher shows her how to use a weekly calendar to keep track of what assignments she needs to complete and when they are due.

C) Josie's teacher gives her special memory tricks to help her remember how to spell certain words (e.g., "The principal is my pal").

D) Vern's history teacher loans Vern a videotape that depicts some of the historical events about which the class is reading.

Answer: A

106) Several teachers tell you that they are "teaching to students' right brains" by spending a lot of time on painting, map interpretation, geometry, and other highly visual and/or spatial activities. Critique their claim using what you have learned about how the human brain functions.

Answer: The teachers are misconstruing how the brain functions. Although the two hemispheres tend have different strengths (e.g., the left hemisphere specializes in language and logical thinking, the right hemisphere in visual and spatial tasks), they constantly collaborate in day-to-day tasks. Even very simple tasks (e.g., recognizing an object, identifying a particular word while reading) recruit numerous areas of the cortex.

107) Many psychologists believe that human memory has three components. Describe each of these components, including both its capacity and its duration. Explain how students must process information so that it arrives at the third and final component.

Answer: The sensory register holds virtually all the information we sense in a relatively unencoded form for a second or two (actually, less than a second for visual input and about two to three seconds for auditory input). Working memory is the component that actively processes information. It holds a small amount of information (hence has a limited capacity) for perhaps 5-20 seconds, although information can be kept there longer through the use of rehearsal. Long-term memory has a seemingly unlimited capacity and an indefinitely long duration (it may remain there quite a while, although not necessarily forever). People move new information from the sensory register to working memory by paying attention to it. They most effectively move new information from working memory to long-term memory by connecting it to the things already stored in long-term memory.

108) Describe what psychologists mean when they say that attention and working memory have a limited capacity. Discuss an implication of this limited capacity for students' learning.

Answer: People can attend to and process only a small amount of information—and thus can deal with only one complex task—at any one time. This limited processing capacity has several possible implications (the response needs to mention only one of these):

- Keep students' attention focused on the task at hand.
- Capture students' attention by making subject matter interesting, exciting, puzzling, and so on.
- Minimize distractions that take students' attention away from their schoolwork.
- Pace instruction so that students receive only so much new information at once—so that the capacity of their working memory capacity is not exceeded.
- Don't ask students to solve complex problems entirely in their heads.
- Promote automaticity of basic skills that students will use in more complex activities.

109) Describe what psychologists mean by the terms *schema* and *script*, and illustrate each of these concepts with a concrete example. Then explain how schemas and scripts sometimes play a role in learning and knowledge construction.

Answer: A schema is an organized set of facts about a specific concept or phenomenon. A script is a schema that involves a predictable sequence of events related to some activity. (The student should describe a concrete example of each of these.) Schemas and scripts promote knowledge construction by enabling learners to fill in missing information in a manner consistent with how objects typically are and/or how events typically unfold.

110) Many psychologists propose that learning often involves elaboration. Explain what they mean by the term *elaboration*, and give a concrete example to illustrate it. Then explain:

- a. Why educational psychologists recommend that students elaborate as much as possible
- b. Why different people often elaborate on the same information differently
- c. Why elaboration sometimes leads to the storage of inaccurate information

Answer: Elaboration involves embellishing on (e.g., modifying or adding to) new information using what one already knows. The response should illustrate the process with a concrete example in which a learner is clearly going beyond the information given.

- a. Elaboration usually promotes more effective memory of the information over the long run (e.g., better students elaborate more frequently). Also, multiple elaborations promote multiple connections in long-term memory, thereby facilitating retrieval at a later time. (The response needs to include only one of these explanations.)
- b. Each person brings a unique knowledge base to new information and therefore makes unique connections with the information.
- c. People may reinterpret new information in light of misconceptions they have.

111) Some learning theorists propose that learning is a process of *constructing knowledge*. Explain the role that construction plays in each of the following, illustrating your discussion of each with a concrete example:

- a. Long-term memory storage
- b. Long-term memory retrieval

Answer:

- a. Learners often construct a meaningful interpretation of the information they receive—a process that involves combining new information with things already known. A concrete example should clearly reflect pulling both old information and new information together in a constructive manner during storage.
- b. Sometimes only part of the needed information can be retrieved. When this happens, general knowledge of how the world typically operates is used to fill in missing pieces. A concrete example should illustrate how retrieved information and general knowledge are pulled together during retrieval.

112) Choose a topic on which you might give a short explanation or lecture to students. With effective memory storage processes in mind, describe three different strategies you might use to help students store the information in their long-term memories easily and effectively. Using information processing theory, give a theoretical rationale for each of the strategies you propose.

Answer: Examples of effective strategies are these:

- Capturing and/or maintaining attention
- Accommodating the limited capacity of working memory
- Encouraging students to elaborate on new ideas
- Facilitating organization of the information presented
- Facilitating visual imagery

The response should describe three concrete strategies that reflect one or more of the above alternatives and/or are in other ways consistent with information processing theory. It should also relate each strategy to the specific process(es) it promotes.

113) The German word for "rabbit" is *Kaninchen*. Develop two different mnemonics for remembering this vocabulary word, one using each of the following two techniques:

- a. Verbal mediation
- b. Keyword method

Answer:

- a. Verbal mediation involves connecting two things via a phrase or sentence. One possibility is "The rabbit has a can on its chin."
- b. The keyword method involves identifying one or more key words that sound similar to, or otherwise represent, the things to be remembered, and then forming a visual image using the keyword(s). One possibility is forming a visual image of a rabbit that has a *can* on its *chin*.

114) George does not know the days of the week. You want him to be able to recite all seven days in order, beginning with Sunday. Devise a *superimposed meaningful structure* you might use to help George remember the days.

Answer: In this case an appropriate superimposed meaningful structure would be a word, acronym, sentence, story, or poem that represents the seven days in their correct order. An example is Susie Mae Turner watched three fancy satellites.

115) Research tells us that students' misconceptions about a topic are often quite resistant to change, yet sometimes misconceptions *must* change if students are to acquire an accurate understanding of the world around them. Describe at least three teaching strategies that theorists believe should help students change their misconceptions about the world.

Answer: Strategies for promoting conceptual change include the following (the three strategies described should reflect at least two of these ideas):

- Identify misconceptions before instruction begins so that instruction can deal specifically with them.
- Describe or demonstrate a phenomenon that students cannot adequately explain using their current understanding of the world.
- Ask questions that challenge students' existing beliefs.
- Have students conduct experiments and make predictions about what will happen based on their existing beliefs; encourage them to revise their thinking when their predictions are not accurate.
- Show how the correct explanation is more plausible (i.e., makes more sense) than students' existing beliefs.
- Give students corrective feedback about responses that reflect misunderstanding.
- Build on students' correct understandings (i.e., "kernels of truth") about certain aspects of a phenomenon.
- Preserve students' self-esteem when pointing out errors in their reasoning.
- Have students discuss the pros and cons of various explanations.
- Ask students to apply their revised understandings to new situations.
- Frequently check students' understanding, monitoring for persistent misconceptions.