

**Questions from Lecture and the Oliver Sacks book**

1. The number of items that can be held in short-term memory is typically conceptualized as:
  - A) 3 plus or minus 2
  - B) 5 plus or minus 2
  - C) 7 plus or minus 2
  - D) 9 plus or minus 2
  
2. Chess masters and chess beginners were shown chess pieces on a chessboard, and then asked to reconstruct the locations of the chess pieces from memory. Some of the pieces were shown from normal games (normal arrays) and some were shown in random arrays. Researchers found that:
  - A) Chess masters had superior memory relative to chess beginners for chess pieces in normal arrays, and the two groups had equal memory for chess pieces in random arrays.
  - B) Chess masters had superior memory relative to chess beginners for chess pieces in both normal and random arrays.
  - C) Chess masters had superior memory relative to chess beginners for chess pieces in random arrays, and the two groups had equal memory for chess pieces in normal arrays.
  - D) Chess masters had superior memory for chess pieces in normal arrays, and inferior memory relative to chess beginners for chess pieces in random arrays.
  
3. Memory researchers have studied factors that make it more or less likely that a person will remember or forget information. People remember material, like recall of nonsense syllables, better if they sleep 8 hours between study and test than if they are awake for 8 hours between study and test; this result supports the idea of \_\_\_\_\_. People make more errors in remembering a list of words (such as names of fruits) if they have just previously studied another similar list of words (like names of other fruits); this results supports the idea of \_\_\_\_\_. People remember a list of words better if they study and recall words in the same environment (like studying underwater and recalling underwater) than in different environments (like studying underwater and recalling on land); this results supports the idea of \_\_\_\_\_.
  - A) encoding specificity; retroactive interference; proactive interference
  - B) retroactive interference; proactive interference; encoding specificity
  - C) retroactive interference; encoding specificity; proactive interference
  - D) proactive interference; encoding specificity; retroactive interference
  
4. A patient with a right-sided removal of the hippocampus would be impaired on which of the following?
  - A) short-term verbal memory
  - B) long-term verbal memory
  - C) short-term visuo-spatial memory
  - D) long-term visuo-spatial memory

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5. Studies of patients with brain injuries have revealed that declarative memory depends on the \_\_\_\_; procedural memory depends on the \_\_\_\_; repetition priming depends on \_\_\_\_.
  - A) basal ganglia; hippocampus; neocortex
  - B) hippocampus; basal ganglia; neocortex
  - C) basal ganglia; neocortex; hippocampus
  - D) hippocampus; neocortex; basal ganglia
  
6. Patients with anterograde global amnesia typically have:
  - A) a temporally limited retrograde amnesia.
  - B) no retrograde amnesia at all.
  - C) a retrograde amnesia for the most distant past parts of their lives.
  - D) a complete retrograde amnesia.
  
7. Experimental evidence indicates which of the following about lexical access (thinking about the meaning of words)?
  - A) All meanings of words are activated for about 500 msec, and then only the relevant meaning is activated at 2000 msec.
  - B) All meanings of words are activated for about 500 msec through 2000 msec.
  - C) Only relevant meanings of words are activated for about 500 msec through 2000 msec.
  - D) Relevant meanings of words are activated for about 500 msec, and then all meanings are activated at 2000 msec.
  
8. Which of the following is NOT true about human language development in children?
  - A) Left hemisphere specialization for speech is evident within days of birth.
  - B) Children can distinguish all sounds in all languages up to about an age of 3 years.
  - C) Girls, on average, learn the meanings of more words in the first two years of life.
  - D) Parental communication in “motherese” involves short pauses, careful enunciation, and exaggerated intonation in a high pitch that helps infants perceive language.
  
9. Patients with right or left hemisphere lesions were compared to healthy control subjects in their abilities to interpret (identify) people who are lying through facial expressions alone or through facial expressions and vocal cues. What was found?
  - A) Patients with right hemisphere lesions were more accurate than patients with left hemisphere lesions and healthy people.
  - B) Patients with left hemisphere lesions were more accurate than patients with right hemisphere lesions and healthy people.
  - C) Patients with right hemisphere lesions were as accurate as controls and more accurate than patients with left hemisphere lesions.
  - D) Patients with left hemisphere lesions were as accurate as controls and more accurate than patients with right hemisphere lesions.

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10. Experimental studies show that, for equal losses or gains, people are:
- A) risk averse for losses and gains.
  - B) risk taking for losses and gains.
  - C) risk averse for gains and risk taking for losses.
  - D) risk taking for gains and risk averse for losses.
11. The children of highly successful people are often less successful than their parents. This observation reflects most certainly
- A) the pressure of growing up with enormous parental expectations.
  - B) confirmation bias.
  - C) regression to the mean.
  - D) the lack of attention from parents devoted to career.
12. People **(a)** often think that it is unlikely that two individuals among 30 people will share a birthday; **(b)** often think that more words begin with the letter “K” than have “K” in the third letter position; and **(c)** often estimate that the Mississippi River is shorter if they first answer if it is longer or shorter than 500 miles than if they first answer if it is longer or shorter than 5000 miles. These ways of thinking reflect, in order, what heuristics?
- A) **(a)** framing; **(b)** anchoring; **(c)** availability
  - B) **(a)** representativeness; **(b)** framing; **(c)** availability
  - C) **(a)** availability; **(b)** representativeness; **(c)** anchoring
  - D) **(a)** representativeness; **(b)** availability; **(c)** anchoring
13. Which is NOT true about IQ scores according to available evidence?
- A) IQ scores are steadily rising around the world.
  - B) Crystallized intelligence shows little decline in normal aging.
  - C) Fluid intelligence shows little decline in normal aging.
  - D) IQ scores, according to twin studies, are about 50% heritable.
14. IQ measures predict or account for about what % of variation in outcomes such as school GPA, job success, and salary?
- A) 5%
  - B) 25%
  - C) 50%
  - D) 75%
15. Activation in which brain region has been most closely tied to performance on intelligence tests?
- A) occipital lobe
  - B) temporal lobe
  - C) parietal lobe

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D) frontal lobe

16. Which of the following could be interpreted as support for the James-Lange hypothesis that a bodily response leads to a subjective experience of emotion?

- A) Using pencils to force a smile or prevent a smile alters emotional experience.
- B) Following instructions to move facial musculature into specific expressions enhances emotional experience consistent with that expression.
- C) Men were more likely to call a woman they met in the middle of a dangerous bridge than a safe bridge.
- D) All of the above.

17. Lesions to the amygdala in humans result in all EXCEPT:

- A) loss of fear conditioning as measured by autonomic (GSR) measures.
- B) loss of emotional enhancement of memory.
- C) loss of ability to identify fearful facial expressions.
- D) loss of ability to identify disgust facial expressions.

18. Imaging studies of the amygdala indicate all of the below EXCEPT:

- A) selective response to fearful faces in subliminal presentations.
- B) selective response to fearful faces in a cortically blind visual field.
- C) greater amygdala responses to scenes judged as more negatively intense.
- D) greater activation in women in the left amygdala as they rate the intensity of scenes and in the right amygdala as they form long-term memories for the scenes.

19. Oliver Sacks describes an amnesic patient named "Jimmie G." The etiology of his amnesia was:

- A) surgery for epilepsy.
- B) Alzheimer's disease.
- C) Huntington's disease.
- D) alcoholism.

20. Oliver Sacks describes "Mrs. B," a former research chemist who became facetious and superficial in her interactions with other people, as if thoughts and feelings were disconnected. It was discovered that she has a tumor (carcinoma) in what brain location?

- A) dorsolateral prefrontal corte
- B) orbitofrontal corte
- C) amygdala
- D) basal ganglia

**Questions from the Textbook Reading**

21. Complete this analogy: Primacy effect : \_\_\_\_\_ :: Recency effect : \_\_\_\_\_
- A) Long term memory; Perceptual memory
  - B) Working memory; Short term memory
  - C) Long term memory; Short t
  - D) Working memory; Perceptual memory
22. Which of the following are related to **(a)** explicit memory and **(b)** implicit memory, respectively?
- A) **(a)** memories are involuntarily recalled; **(b)** knowing how to ride a bike
  - B) **(a)** knowing when your birthday is; **(b)** memories can be operated on by working memory
  - C) **(a)** knowing what a pine tree looks like; **(b)** knowing how to ride a bike
  - D) **(a)** memories are involuntarily recalled; **(b)** memories are voluntarily recalled
23. Ebbinghaus' work with long term memory (LTM) demonstrates which of the following?
- A) Its decay can be described as a power law.
  - B) Memory can decay due to interference.
  - C) Information can fail to enter LTM due to an encoding failure.
  - D) All of the above.
24. Hannah studies her vocabulary words by using the words in a sentence. Megan studies the same vocabulary words by rhyming them with other words. All other factors being equal, who will do better on a test on the meanings of the vocabulary words?
- A) Hannah
  - B) Megan
  - C) Both will do equally well.
  - D) One cannot tell from the information given.
25. An unusually vivid and detailed memory of a dramatic event is a/an:
- A) semantic memory.
  - B) memory illumination.
  - C) flashbulb memory.
  - D) emotional insight.
26. Which of the following is NOT true of working memory?
- A) Working memory involves a central executive, visuospatial sketchpad, and articulatory loop.
  - B) Working memory is a form of long-term memory used to reason or to solve problems.
  - C) Working memory uses short-term memory to reason or to solve problems.
  - D) People who regularly use ecstasy show impaired working memory for up to two years after they've stopped using the drug.
27. A habit is an example of \_\_\_\_\_ memory, whereas knowing the capitals of each of the

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50 states is an example of \_\_\_\_\_ memory.

- A) explicit, episodic
- B) explicit, semantic
- C) implicit, episodic
- D) implicit, semantic

28. Katie is at a party with her boyfriend, where she is introduced to many of his friends. Each time she is introduced to someone new, she thinks of someone she already knows who has the same first name and imagines that face morphing into the face of the person she has just met. Katie is engaging in:

- A) eidetic memory.
- B) iconic processing.
- C) elaborative encoding.
- D) episodic memory.

29. Which of the following is true about *phonemes* and *morphemes*?

- A) Phonemes are sounds made to produce speech, and morphemes are gestures made to produce sign language.
- B) Phonemes are the smallest unit of meaning, and morphemes are the smallest unit of speech.
- C) In a language like English, both phonemes and morphemes can be combined to make new words.
- D) Languages differ in their rules for how morphemes can be combined, but all languages use phonemes in the same way.

30. Which of the following sentences demonstrates ambiguity (i.e., it could have more than one meaning) because of its *syntax*?

- A) "She beat the man with her purse."
- B) "Can you pass the salt?"
- C) "There is a tall tree next to the bank."
- D) "I was surprised when the artist drew a gun."

31. How do *semantics* and *pragmatics* differ?

- A) Jokes often depend on pragmatics, but semantics can never be funny.
- B) Pragmatics depends more on the right hemisphere, semantics on the left.
- C) Only semantics contributes to the meaning of a sentence.
- D) Brain damage can impair semantic processing, but not pragmatic processing.

32. Which of the following about *words* and *concepts* is FALSE?

- A) One concept can be expressed by different words.
- B) One word can express different concepts.
- C) There is a single word to express every possible concept.
- D) Unlike words, concepts are unambiguous.

33. Which of the following is true about *algorithms* and *heuristics*?

- A) Algorithms are shortcuts to solving problems; whereas heuristics are slow, methodical ways to arrive at a solution.

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- B) Heuristics are shortcuts to solve a problem that guarantee a solution faster than an algorithm.
  - C) Algorithms are methodical ways to solve a problem that guarantee a solution eventually, and heuristics are strategies that sometimes let you get to a solution faster.
  - D) "Heuristics" is the term for algorithms used by human minds rather than a computer software.
34. Which of the following is NOT measured by standard IQ tests like the Wechsler Adult Intelligence Scale (WAIS)?
- A) Verbal comprehension.
  - B) Perceptual creativity.
  - C) Working memory.
  - D) Processing speed.
35. The *Yerkes-Dodson law* states:
- A) That we perform best when at an intermediate state of arousal.
  - B) That we perform best when at a maximum state of arousal.
  - C) That we perform worse when at an intermediate state of arousal.
  - D) That we perform best when at a low state of arousal.
36. *Learned helplessness* is a condition in which:
- A) one learns to help others during aversive situations, so that they don't give up.
  - B) one learns that nothing can change an aversive situation, so he or she gives up.
  - C) one learns not to help others during aversive situations, so that they do give up.
  - D) one learns that he or she can change an aversive situation, but choose not to do so.
37. Neurons in which of the following structures initially fires when an animal sees or tastes food, and then reduces firing when then animal has had its fill of that food?
- A) brainstem
  - B) basal ganglia
  - C) thalamus
  - D) hypothalamus
38. According to Ekman, which one of the following is one of the six basic emotions?
- A) Excitement
  - B) Surprise
  - C) Nostalgia
  - D) Joy
39. Some researchers argue that signatures emotions may not be the same across cultures, but are shaped by cultures. Which of the following is evidence of this?
- A) Some cultures were found not to have anger.
  - B) Indigenous cultures in South America that have been isolated were found to have up to 18 different emotional signatures and would confuse one emotion with several others.
  - C) A group in the minority can actually recognize the emotions in the facial expressions of a majority group better than the emotions of their own minority group.

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- D) Some cultures do not consider emotions as important as rational reasoning.
40. The James-Lange theory of emotions says that some event will cause changes in our arousal and physiology. The interpretation of this change then leads to an emotion. Which of the following is not a criticism of this theory?
- A) There is no evidence that a specific and unique bodily state underlies each emotion.
  - B) People with severe spinal cord injuries can still experience emotions.
  - C) The neural activity associated with happy facial feedback is not the same pattern as when people are naturally happy.
  - D) Emotional centers in the brain are not directly connected to the somatosensory system.
41. Evidence for the cognitive theory of emotion comes from experiments that illustrated misattribution of arousal. Misattribution of arousal is when:
- A) People interpret physiological arousal incorrectly, which leads to an experience of emotion that would not normally occur.
  - B) Using arousal to control unrelated emotions.
  - C) When arousal comes from an external stimulus only and never an internal stimulus.
  - D) When someone attributes emotional responses of another person to an incorrect source.



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### Short-Answer Questions

**Please choose 5 of the following 11 questions, and provide your responses on the provided sheet. Only answers written on the response sheet will be graded. If you answer more than 5 questions, only the first 5 will be graded.**

1. Use your knowledge of amnesia to fill in the blanks for each scenario:

Mary had a stroke and the resultant brain damage led to her loss of memory. Mary has (1) amnesia.

Frank is a construction worker. One day, he forgot to wear his hard hat and a large metal bar rolled off a platform, hitting his head. Frank can no longer remember what he was doing prior to the fall. He is suffering from (2) amnesia.

In the movie *Finding Nemo*, Dory has a profound memory deficit, which prevents her from learning or retaining any new information or remembering the names of new fishes that she meets. Dory suffers from (3) amnesia. The famous psychology patient (4) also had a form of this amnesia.

2. While studying for the 9.00 exam, you listened to upbeat music to get you into a happy mood. Before you walked into the exam, you listened to the same songs to get back into that happy mood and help you better remember the material you studied. You are relying on (1). As you go through the exam, you wish there were more multiple-choice questions because these require (2), whereas short answer and fill-in-the-blank questions require (3). After the test, you and your friends are hungry and decide to order a pizza. Your friend reads you the telephone number of the closest pizza place, but you can only remember the first two digits of the telephone number. This is an example of the (4) effect.
3. In Massachusetts, it is illegal to consume alcoholic beverages if you are under 21 years of age. A bar is being investigated for allegedly serving alcohol to minors. When the rookie detective arrives at the bar, he sees some people who are drinking alcohol and other people who are just drinking seltzer with lemon. The detective's job is to determine whether the bar is breaking the law by serving alcohol to minors. List **two** psychological terms for different *logical errors* that might arise in this situation, and give an example of the corresponding "rookie mistake" the detective might make.

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4. Not all researchers agree on what constitutes intelligence. Besides the most standard approach, the Wechsler Adult Intelligence Scale (WAIS), there are several other approaches to operationalizing intelligence. Name **four** alternative approaches to operationalizing intelligence that were described in the textbook.

5. Fill in the blanks of Maslow's Hierarchy of Needs (from higher to most basic).

Self Actualization Needs

(1)

(2)

Esteem Needs

(3)

(4)

Physiological Needs

6. List the four stages that the human body, male or female, passes through during sexual activity, according to Masters and Johnson:

7. For each of the blanks below, indicate **all** the appropriate terms from the list to complete the following description of polygraphs.

*Blank #1:*

central                      peripheral                      sympathetic                      parasympathetic

*Blank #2:*

cerebral blood flow    skin conductance    pupil dilation                      breathing rate

heart rate                      cortisol levels                      glucose metabolism

"Polygraphs function by monitoring the (1) nervous system. The specific physiological changes that polygraphs detect are (2)."

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8. In the *Cannon-Bard theory of emotion* an event or stimulus will lead to both (1) and a/an (2). One criticism of this theory is (3). The Cannon-Bard theory is extended in the *Cognitive theory of emotion*, which includes the additional step of (4).
9. For four points, list the **six** basic emotions.
10. If a picture of a family member were shown to a patient with prosopagnosia and another patient with an orbitofrontal lesion like that of Phineas Gage. Based on experimental evidence:
- (1) Which patient(s) would recognize the face?
  - (2) Which patient(s) would not recognize the face?
  - (3) Which patient(s) would have a normal galvanic skin response (GSR) to the face?
  - (4) Which patient(s) would fail to have a normal galvanic skin response (GSR) to the face?
11. Name **four** environmental influences on IQ.

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