

Name: _____

TA: _____

EXAM #2 - SOLUTION KEY

Introduction to Psychology/ 9.00
Spring Semester 2010

Part I. Answer the multiple-choice questions below by selecting **one best** answer and marking the provided answer sheet. It is to your advantage to answer each multiple-choice question, as no penalties are given for incorrect answers.

If you believe that a question or answer is ambiguous (e.g., that there are more equally good answers than you are asked to mark), **mark the best answer** and include a note explaining why you believe the question is ambiguous - your note will be considered in the grading.

Part II. Choose **FIVE** (5) of the Short answer questions. Provide concise, informative responses directly in the space provided on the answer sheet.

Statement of Academic Integrity:

I confirm that the answers I give on this exam represent my own and that I will not engage in:

- A. Copying from another's person's examination paper or allowing another person to copy from my paper
- B. Unpermitted collaboration during the exam
- C. Revising and resubmitting a question for regrading without the instructor's knowledge and consent

Sign this page affirming that you agree with the above statement:

Name : _____

TA : _____

Signature: _____

Date: _____

Lecture and Sacks Questions (1pt each)

1. The number of chunks that can be held in short-term memory is typically conceptualized as
 - A. 9 plus or minus 2
 - B. 7 plus or minus 2**
 - C. 5 plus or minus 2
 - D. 3 plus or minus 2

B
2. Various factors can help or harm memory. 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 mix up information when later asked about an event with information from the event itself; this is known as _____. People also remember things better when they study and are tested in the same location as opposed to different locations, which demonstrates _____.
 - A. proactive interference; retroactive interference; proactive interference
 - B. proactive interference; proactive interference; encoding specificity
 - C. retroactive interference; retroactive interference; encoding specificity**
 - D. retroactive interference; proactive interference; encoding specificity

C
3. Flash-bulb memories refer to memories for emotionally important events for which people feel that the memory is so vivid that it is like a picture. What is NOT true about flash-bulb memories according to research?
 - A. One is more likely to remember such an emotionally powerful event than a typical event
 - B. Flash-bulb memories are susceptible to distortion
 - C. People are exceptionally accurate in assessing the accuracy of their flash-bulb memories**
 - D. Flash-bulb memories relate both to external perceptions and internal feelings

C
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**

D
5. Declarative memory depends on the _____; repetition priming depends on the _____; procedural memory depends on _____.
 - A. hippocampus; neocortex; basal ganglia**
 - B. hippocampus; basal ganglia; neocortex
 - C. neocortex; basal ganglia; hippocampus
 - D. basal ganglia; neocortex; hippocampus

A

6. Monkeys with surgical removals of the hippocampal region have
- A. No retrograde amnesia at all
 - B. Temporally limited retrograde amnesia for material learned in the more distant past
 - C. Temporally limited retrograde amnesia for material learned in the more recent past**
 - D. Complete retrograde amnesia

C

7. Which is NOT true about human phonology?
- A. Humans use about 100 phonemes
 - B. English has about 45 phonemes
 - C. children are born with the capacity to discriminate all phonemes, but start to lose the ability to discriminate phonemes they do not hear after about 12 months
 - D. pauses during natural speech generally occur at the ends of words**

D

8. Experimental evidence indicates which of the following about lexical access?
- A. all meanings of words are activated for about 500 msec through 2000 msec
 - B. all meanings of words are activated for about 500 msec, and then only the relevant meaning is activated at 2000 msec**
 - C. only relevant meanings of words are activated for about 500 msec through 2000 msec
 - D. only relevant meanings of words are activated for about 500 msec, and then all meanings are activated at 2000 msec

B

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 either left or right hemisphere lesions were more accurate than controls
 - B. Patients with right hemisphere lesions were more accurate than patients with left hemisphere lesions and healthy people.
 - C. Patients with left hemisphere lesions were more accurate than patients with right hemisphere lesions and healthy people.**
 - D. Patients with right hemisphere lesions were as accurate as controls and more accurate than patients with left hemisphere lesions.

C

10. People incorrectly (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) representativeness; (b) availability; (c) anchoring**
- D. (a) availability; (b) representativeness; (c) anchoring

C

11. 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 taking for gains and risk averse for losses
 - D. risk averse for gains and risk taking for losses**

D

12. Perseveration in problem solving is found after injuries to the _____; failure to exhibit a galvanic skin response (GSR) to family members is found after injuries to the _____; a heightened tendency to make selections that have high immediate rewards but higher long-term losses is found after injuries to the _____
- A. orbitofrontal cortex; orbitofrontal cortex; dorsolateral prefrontal cortex
 - B. dorsolateral prefrontal cortex; dorsolateral prefrontal cortex; orbitofrontal cortex
 - C. dorsolateral prefrontal cortex; orbitofrontal cortex; dorsolateral prefrontal cortex
 - D. dorsolateral prefrontal cortex; orbitofrontal cortex; orbitofrontal cortex**

D

13. Which is NOT true about IQ scores according to available evidence?
- A. IQ scores have been rising around the world
 - B. crystallized intelligence shows little decline in normal aging
 - C. IQ scores, according to twin studies, are about 50-70% heritable
 - D. birth order has no effect on IQ scores**

D

14. Which is NOT true about psychological and brain mechanisms related to IQ?
- A. performance on IQ-type problems is associated with activation of frontal cortex
 - B. normal variation in a single gene can influence brain activation during a working memory task
 - C. people with higher IQ scores typically show greater brain activation than people with lower IQ scores on a working memory task**
 - D. people with higher IQ scores typically have faster reaction times on simple tasks than people with lower IQ scores

C

15. Scientists have shown that some factors can hinder performance on tests. Which of these factors does NOT hinder performance?
- A. stereotype threat that is brought to mind by the labeling of the test
 - B. a sense that intelligence is a fixed trait that does not grow
 - C. praising a child for her or his hard work**
 - D. praising a child for her or his intelligence

C

16. 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 declarative memory for a fear conditioning study**
 - D. loss of ability to identify fearful facial expressions

C

17. Imaging studies of the amygdala indicate that 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 activation on the left for emotionally intense scenes that are later remembered by women
 - D. greater amygdala activation on the left for emotionally intense scenes that are later remembered by men**

D

18. What brain region is associated with the perception of facial expressions of disgust?
- A. insula**
 - B. amygdala
 - C. orbitofrontal cortex
 - D. dorsolateral frontal cortex

A

19. Oliver Sacks describes an amnesic patient named "Jimmie G." The etiology of his amnesia was
- A. surgery for epilepsy
 - B. alcoholism**
 - C. Alzheimer's disease
 - D. Huntington's disease

B

20. Oliver Sacks describes "Mrs. B" a former research chemist who became facetious and superficial in her interactions with other people. It was discovered that she has a tumor (carcinoma) in what brain location?
- A. amygdala
 - B. basal ganglia
 - C. dorsolateral prefrontal cortex
 - D. orbitofrontal cortex**

D***Book Questions (1pt each)***

21. Recalling a fact is an example of ____.
- A. Episodic memory
 - B. Semantic memory
 - C. Working memory
 - D. Implicit memory

B, p. 291

22. Which of the following is NOT a type of implicit memory?

- A. Classically conditioned responses
- B. Operantly conditioned responses
- C. Non-associative learning
- D. Priming

B, p. 293

23. An amnesic patient was hesitant to shake hands with a doctor who had pricked him with a pin the day before. This memory was most likely due to

- A. semantic memory
- B. operant conditioning
- C. classical conditioning
- D. observational learning

C, p. 293

24. Jeremy had a stroke last year, which caused him to be unable to remember how to get to and return from his new doctor's office using a specific route. What brain structure was most likely damaged by Jeremy's stroke?

- A. His amygdala
- B. His hypothalamus
- C. His hippocampus
- D. His cerebellum

C, p. 296

25. The tip-of-the-tongue phenomenon demonstrates what about the nature of memory?

- A. It is fragmentary
- B. Words are stored as whole units
- C. It is organized by sound
- D. It is not systematic

A, p. 302

26. Imagine that the first car you learned to drive was a manual transmission with a clutch, but the car you drive now is an automatic. Sometimes you find yourself reaching for the clutch that is no longer there. This example illustrates _____.

- A. Retroactive interference
- B. Proactive interference
- C. Retrograde amnesia
- D. Anterograde amnesia

B, p. 311

27. What affect, if any, does hypnosis have on memory?

- A. It has no effect.
- B. It increases people's confidence in their memories, but not their accuracy.
- C. It decreases people's confidence in their memories, but not their accuracy.
- D. It decreases both confidence and accuracy.

B, p. 306

28. What disruption to language would you expect in a patient with damage to the inferior frontal lobe of the left hemisphere?

- A. Difficulty recognizing words
- B. Impaired language production
- C. Specific difficulty understanding pragmatic meanings
- D. Trouble discriminating speech sounds

B, p.329

29. Complete this analogy: **syntax** is to **words** as **phonology** is to _____

- A. semantics
- B. letters
- C. phonemes
- D. comprehension

C, p.327

30. Which of the following terms means "a disruption of language caused by brain damage"?

- A. aphasia
- B. dyslexia
- C. ataxia
- D. dysphonia

A, p.329

31. What is a major criticism of strictly empiricist accounts of language acquisition?

- A. Children only produce sentences they have heard before
- B. There is not enough information to learn all the rules of grammar based solely on what children hear
- C. The mechanisms of the "language acquisition device" are not sufficiently specified
- D. These accounts do not make any falsifiable hypotheses

B, p.335

32. Which of the following is good evidence that thinking can involve mental images?
- A. People can describe the colors of a famous painting
 - B. People are unable to mentally represent abstract concepts like “liberty”
 - C. Tasks that take longer in real space also take longer in mental space
 - D. Different brain regions are involved in perception versus imagination

C, p.349-350

33. What is the difference between a *prototype* and a *basic level*?
- A. Prototypes are the most common descriptions of an object, whereas basic levels are the most typical examples of a category.
 - B. A prototype may have more than one basic level, but a basic level has only one prototype.
 - C. Prototypes are the most typical example of a concept, whereas the basic level is the most common description of an object.
 - D. People recognize prototypes most quickly, but are slow to describe the basic level of an object.

C, p.353-355

34. What is a common way to gain *insight* while trying to solve a problem?
- A. Allow the problem to incubate in the back of your mind
 - B. Utilize deliberate practice to improve performance
 - C. Develop a mental set for viewing the problem
 - D. Apply an analogy based on a problem you already solved.

A, p.360

35. At the beginning of the school year, you administer a preliminary test of intellectual capacity (assume validity) to a class of students. Then, you randomly assign the students to two groups: “gifted” and “non-gifted”. You tell the teacher, and not the students themselves, which students are “gifted” and which are not. What would you expect in terms of performance on a follow-up test at the end of the school year? Select the *best* answer.
- A. There will be no difference because students were randomly assigned to the two groups.
 - B. “Non-gifted” students *improve* more than “gifted” students because they are motivated to try harder.
 - C. “Gifted” students will *improve* less than “non-gifted” students because they are treated as if they do not need to put in effort.
 - D. “Gifted” students will *improve* more than “non-gifted” students most likely because the teacher’s expectation leads him/her to treat the two groups differently.

D, p.410-411

36. The term “g” appears to explain most of the variation in performance on many standardized IQ subtests. Which one of the following is true about “g”?
- A. It was revealed by factors analysis, and establishes that there is a specific mental ability underlying “general intelligence”.
 - B. It is a statistical abstraction which implies the existence of some underlying process(es) that mediate cognitive performance.
 - C. It is attributable to working memory capacity.
 - D. It also explains *emotional IQ*.

B, p.389-395

37. Intelligence and creativity appear to be distinct, but interrelated, qualities. However, unlike IQ, differences (between people) in creative ability
- A. are not easily explained by genetic differences.
 - B. are not influenced by shared aspects of the home, such as exposure to cultural resources or home libraries.
 - C. are not associated with cognitive characteristics such as motivation and high self-esteem
 - D. are not influenced by the level of formal education.

A, p.419-420

38. “Expertise” is mainly a function of
- A. Innate talent
 - B. Intelligence
 - C. Intrinsic motivation
 - D. Deliberate practice

D, p. 363

39. Which of the following is NOT true about how concepts are psychologically organized?
- A. The specific conceptual category activated for a given object will depend on the context / task at hand.
 - B. Different brain areas will be activated depending on the type of concept.
 - C. Conceptual categories are organized according to necessary, but not optional, aspects of a particular situation.
 - D. Concepts are organized along different dimensions, such as scripts, taxonomies and evaluations.

C, p.355

40. Which is NOT true about conceptual prototypes?

- A. They may change over time with experience.
- B. They possess the majority of distinct attributes that define the category, such as wings and beaks in birds.
- C. People will name prototypes more quickly than non-prototypes.
- D. Concepts always have an associated prototype.

D, p.353

41. The James-Lang theory of emotion argued that you feel emotions after your body reacts by interpreting physiological changes. Which of the following did the Cannon-Bard theory claim was wrong with the James-Lang theory?

- A. There is a cognitive interpretation of emotion
- B. It often takes longer for the body to respond than it does to feel an emotion
- C. Emotions are not brain based
- D. Emotions provide a somatic marker to interpret as an emotion

B, p. 432-433

42. Which of the following is NOT true of a fear response?

- A. Conscious awareness is essential
- B. Fear interacts with mental processes
- C. People with amygdala damage can still feel fear
- D. Fear responses are often reflexive

A, p. 437-438

43. Which of the following is NOT a core component of emotion?

- A. A positive or negative experience
- B. Bodily arousal
- C. Characteristic behaviors
- D. Instinct

D, p. 429

44. Charles Darwin believed that the outward behavior associated with emotion is:

- A. Inborn
- B. Learned
- C. Independent
- D. Non-existent

A, p. 429

Name: _____

TA: _____

45. It is possible to interpret bodily arousal incorrectly. When this happens, it is called:
- A. Emotional disorder
 - B. Cognitive restructuring
 - C. Misattribution of arousal
 - D. Affect as information

C, p 436

46. People tend to perform best at _____ levels of arousal.
- A. Low
 - B. High
 - C. Variable
 - D. Intermediate

D, p. 451

47. An implicit motive directs behavior _____ .
- A. Unnecessarily
 - B. Unconsciously
 - C. Toward an unwanted need
 - D. Unproductively

B, p. 454

48. Why is child-directed speech thought to be beneficial for infants' language acquisition?
- A. It resembles the kinds of babbling babies do themselves
 - B. It allows parents to explicitly correct children's speech errors
 - C. It is about topics that are inherently interesting to children
 - D. It uses clearer pauses and more careful enunciation than typical speech

D, p.336

49. What is the smallest unit of meaning in a language called?
- A. a morpheme
 - B. a word
 - C. a propositional representation
 - D. a statement

A, p.330

Name: _____

TA: _____

50. Suppose a scientist working in Africa has discovered a troop of monkeys that have a complex communication system. These monkeys make two kinds of sound – howls and grunts – which they combine to make a “call”. For example, “howl-grunt” is the call for “snake” and “grunt-grunt” is the call for “leopard”. The monkeys never make two howls in a row. Based only on the information here, which aspect of human language is not present in the monkeys’ communication?
- A. phonemes
 - B. phonology
 - C. syntax
 - D. semantics

C, p.328

Name: _____

TA: _____

Short Answer Questions (4 pts each)
(Answer 5 of the following 13 questions)

1. Diffuse, long-lasting emotional states are defined as _____, whereas immediate responses to a specific object or situation are defined as _____. The high or low intensity of an experience is defined as _____, whereas the positive or negative aspects of an experience is defined as _____.

Mood; Emotion; Arousal; Valence

2. Name two ways that cognition is involved with emotion.
- By interpreting the emotion and the situation that caused the emotion
 - Comparing to memories of similar situation
 - Categorizing core affect

p. 433

3. When experiencing emotion, many brain areas including the amygdala and hypothalamus are activated. What additional brain area is activated when trying to regulate emotion? What are three of the negative consequences when trying to control your emotion by suppressing your behavior?
- The frontal lobe
 - Impairs the ability to reason
 - Impairs your ability to communicate
 - Increases your blood pressure

p. 443-444

4. Maslow's hierarchy of needs claims that low-level needs that are essential to life must be met before less basic higher level needs can be satisfied. Give four criticisms that argue against Maslow's hierarchy of needs.
- The levels are not clearly distinct
 - There is not a clear cut order of needs
 - The importance of needs varies across cultures
 - Unmet needs do not always become more important than met needs
 - People often sacrifice safety needs for higher level needs

p. 456

5. Fill in the blank.

A problem can often be solved by identifying a _____ which implies a solution. Difficulty in this regard, known as _____, reflects cognitive inflexibility. One way to overcome this difficulty is to "sleep on it", which allows time for _____ and may lead to new _____ into the problem.

Answers: representation, functional fixedness, incubation, insight

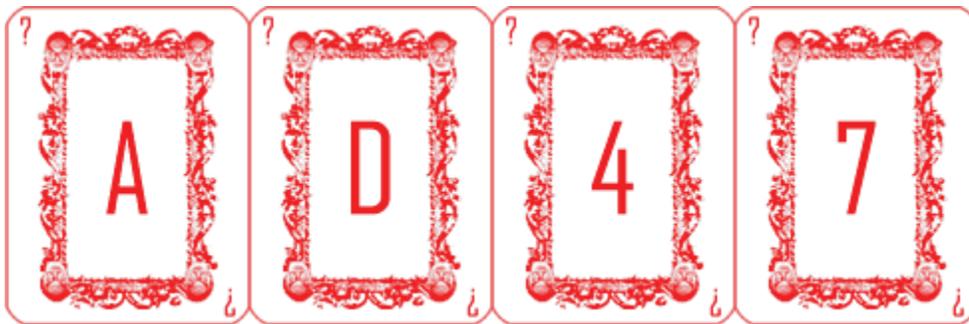
Name: _____

TA: _____

6. _____ consists of the processes that guide attention, thought and action in service of accomplishing a specific task. A popular way to study this is known as the _____, where participants name the color of the ink used to print words that name colors. Indeed, brain imaging studies suggest that the conflict resolution required in this task is mediated by a cortical structure in the frontal lobe known as the _____. In addition, such studies have also suggested that the updating of sub-goals (represented in the prefrontal cortex) depends heavily upon _____ signaling.

Answers: Cognitive control, Stroop task, anterior cingulate cortex, dopaminergic

7. Humans are not entirely logical. One common logical mistake in which people incorrectly attribute a specific cause to an observed effect is known as _____. An example of this would be “Japanese _____ eat much fat as, and therefore have fewer heart attacks than, Westerners”. Another common logical mistake is known as confirmation bias, where people fail to consider what it would take to _____ a rule. For example, if you were given the rule “If a card has a vowel on one side, then it will have an even number on the other side”, which cards (below) would you have to turn over in order to confirm that this rule is true?



Answers: Affirming the consequent, do not, refute/disconfirm, A and 7

8. Ambiguous sentences are those that can take more than one meaning. Give two examples of sentences that are ambiguous: one which is ambiguous due to only the **semantics** of a single word, and another that is ambiguous due only to its **syntax**. For each, explain the ambiguity and identify the two (or more) possible interpretations.

Answers: e.g. “I sat down by the bank” where “bank” can mean either the side of the river or a building where people keep money. “I saw the man with a telescope”

where “with a telescope” can describe either how he was seen or what he was carrying (p329-331)

9. During language acquisition, children often make **underextension** or **overextension** errors. Give one example of each of these types of error, and explain what meaning a child might have for a word that would cause such an error to occur.

Answers: e.g.

underextension: refusing to use “dog” to refer to other dogs, because “dog” means just the family’s pet Fido;

overextension: using the word “dog” to refer to both cows and dogs, because “dog” means any four legged animal
p337-338.

10. (1) Describe the principal difference between an *algorithm* and a *heuristic*. (2) Give an example of one problem and explain how it can be solved using either an (3) algorithm or (4) heuristic.

Answers: An algorithm is guaranteed to arrive at a correct solution, while a heuristic is shortcut that will likely lead to a satisfactory solution. E.g., when deciding what flavor of ice cream to purchase, you can either sample every single flavor to select your favorite (algorithm), or you can choose from among a limited set based on flavors you already know you like (heuristic). (p358)

11.-

This question has been removed.

12. Name the part of Baddeley’s three-component model of working memory that would be used in each of the following tasks.

- a) rehearsing the digits in a phone number so that you can dial it
- b) mentally rotating a letter in order to tell whether it is presented forwards or backwards
- c) thinking about how to get to the library by trying to see the route in your mind
- d) planning a schedule for the week

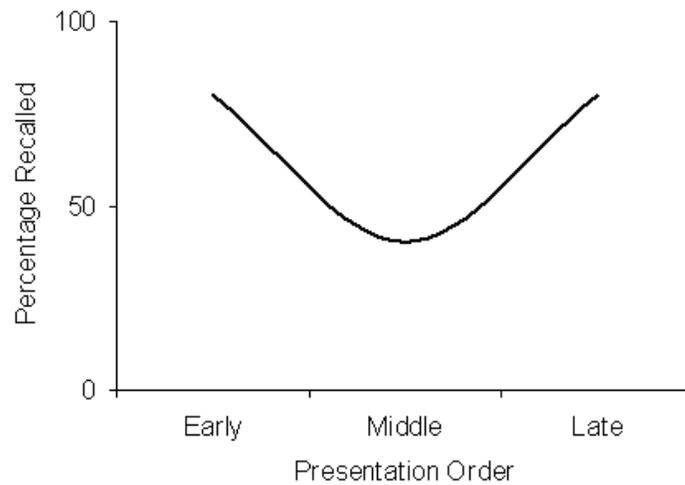
Name: _____

TA: _____

Answers: phonological loop, visuospatial sketchpad, visuospatial sketchpad, central executive

13. The memory curve below illustrates the serial position effect, consisting of better memory for the items present at the beginning of a list, known as the (a) _____ effect, and at the end of a list, known as the (b) _____ effect. The serial position effect provides evidence that different kinds of memory rely on different stores. Specifically, (a) above relies on (c) _____ memory, and (b) above relies on (d) _____ memory.

Answers: primacy, recency, long-term, short-term



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Fall 2011

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