

University of California, Berkeley

Department of Psychology

Psychology W1

Summer 2018

Final Examination

Choose the *best* answer to each of the following 100 questions. Questions are drawn from the text and lectures in roughly equal proportions, with the understanding that there is considerable overlap between the two sources. Usually, only one question is drawn from each major section of each chapter of the required readings; again, sometimes this question also draws on material discussed in class. Read the entire exam through before answering any questions: sometimes one question will help you answer another one.

Most questions can be correctly answered in one of two ways: (1) by fact-retrieval, meaning that you remember the answer from your reading of the text or listening to the lecture; or (2) inference, meaning that you can infer the answer from some general principle discussed in the text or lecture. If you cannot determine the correct answer by either of these methods, try to eliminate at least one option as clearly wrong: this maximizes the likelihood that you will get the correct answer by chance. Also, go with your intuitions: if you have actually done the assigned readings and attended the lectures, your "informed guesses" will likely be right more often than they are wrong.

A provisional answer key will be posted to the course website tomorrow, after the window for the exam has closed. The exam will be provisionally scored to identify and eliminate bad items. The exam will then be rescored with bad items keyed correct for all responses. Grades on the *rescored* exam will be posted to the course website. A final, revised, answer key, and analyses of the exam items, will be posted on the course website after grades are posted.

**Special Instructions for Students Taking the Proctored Off-Campus Exam
Or the Proctored Exam for the Disabled Students Program**

In order to facilitate grading of the Final Exam, students taking the exam with a proctor (either off-campus, through the Disabled Students Program, or in the afternoon sitting for students who had conflicts with the regularly scheduled morning exam) should return their Final Exam answers through the bCourses website.

- Log on to bCourses and click on "Quizzes" in the navigation bar on the left.
- Then click on the link to the "Final Examination Answer Sheet".
- You will see a list of 100 questions and response options A, B, C, and D. There is no text for either questions or answers – just numbers and letters. The text is only on the hard-copy of the exam given you by your proctor.
- Simply transcribe your answers from the printed answer sheet appended to this exam (or the red Scantron form). For each question, 1-100, click the radio button that corresponds to your answer.
- When you have completed entering your answers, click on "Submit Quiz" to submit the Final Exam, just as you did for the Midterm Exams.

Students taking the Final Exam during the regularly scheduled morning session may not submit their answers through bCourses. They must use the red Scantron form.

As a backup, your off-campus proctor will scan the hard copy of your answer sheet and email it to Summer Sessions. In the case of DSP students or students in the afternoon sitting, your proctor will retain the hard copy.

Noncumulative Portion

1. Why is a sequential design desirable for developmental research, when possible?
 - a. It separates the contributions of heredity and environment.
 - b. It eliminates the ethical concerns that plague other research methods.
 - c. Its results apply to cultures throughout the world.
 - d. It combines the strengths of cross-sectional and longitudinal methods. ***

Chapter 5. As a rule, developmental research compares subjects at different ages. This is easiest in a cross-sectional design, in which we compare, say, 5-year-olds with 20-year-olds. But in cross-sectional designs, the adults were born 15 years earlier than the children, so any differences between them might be contaminated by differences in environment (e.g., schooling). Longitudinal designs solve this problem, by testing the same subjects when they are 5 and 20 years old, but of course you have to wait a long time to complete your study. Sequential designs, in which, say, both 5- and 20-year olds are compared with each other and with themselves at a later date, allow the investigator to examine both the effects of development and the differences between cohorts.

2. In what way do young infants show evidence of object permanence?
 - a. They hold their hands in the shape of the object they had just seen.
 - b. They gaze long if a toy car passes through where a block should have been. ***
 - c. They frown at someone who hid or removed a toy they had been playing with.
 - d. They point to where an object used to be, seconds after it disappeared.

Chapter 5. Differences in looking-time are often taken as measures of surprise and attention in infants and other nonverbal children. In the case of option B, the long gaze indicates that the child expects that the block is present, and will prevent the car from moving. So the block is out of sight, but not out of mind. The child has the idea that objects may be present even though they're presently out of view.

3. Someone who unquestioningly accepts a parent's recommendations about career, family, and so forth, is in which state?
 - a. Identity diffusion
 - b. Identity moratorium
 - c. Identity foreclosure ***
 - d. Identity achievement

Chapter 5. In Erickson's theory of psychosocial development, an important task for adolescents is achieving a sense of identity – who you are and what you are about. This process can take a lot of thought and exploration, or identity can be achieved almost reflexively, without thinking too much about it – for example, by accepting your parents' identity as your own. In this case, we can say that the process of achieving one's identity has been foreclosed.

4. Which of these biological factors has been shown to influence a child's preferences among toys?
- Size of the corpus callosum in proportion to the size of the cerebral cortex
 - Amount of testosterone exposure before birth ***
 - Ratio between the transmitters serotonin and norepinephrine in the brain
 - Mean velocity of action potentials of spinal nerves

Chapter 5. Testosterone is the primary male sex hormone, and exposure to testosterone before birth can affect not just the external genitalia, but also various aspects of behavior, such as level of activity and aggression, and even choice of toys.

5. A twin study of a particular trait shows an MZ correlation of .45. From this we can conclude that _____ play(s) a significant factor in development of the trait.
- genetics
 - the shared environment
 - the nonshared environment ***
 - no conclusions can be drawn in the absence of information about the DZ correlation.

Lecture 33. Even with a high MZ correlation (which .45 is not), you can't draw any conclusions about genetic or shared-environment influences without information about the DZ correlation. But you can draw conclusions about the influence of the nonshared environment – which, in this instance, would account for 55% of population variance in the trait.

6. According to Zajonc's confluence model of intellectual development, first-born children:
- have higher IQs, on average, than latter-borns. ***
 - have lower IQs, on average, than latter-borns.
 - children from larger families have higher IQs, on average, than those from smaller families.
 - children from smaller families have higher IQs, on average, than those from larger families.

Lecture 34.

7. In the determination of gender roles such as masculinity and femininity:
- genetic factors are more important than environmental factors.
 - environmental factors are more important than genetic factors.
 - shared environmental factors are more important than nonshared factors.
 - nonshared environmental factors are more important than shared factors. ***

Lecture 35. Biological sex is determined almost exclusively by genetic factors. But gender role is determined more by environmental factors – in fact, there have been cultures in which the traditional Western gender roles were reversed. Within a culture, however, twin studies indicate that the most important determinant is the nonshared environment: who you learn gender-role-appropriate behavior from, and what you learn from them.

8. What are the characteristics of “expert” problem-solving, compared to novices?

- a. Expert problem solving is characterized by formal operations.
- b. Novice problem-solving is characterized by pre-operational thought.
- c. Experts tend to organize problems into abstract “chunks”. ***
- d. Novices are dependent on trial-and-error learning.

Lecture 36. Experts tend to take a more abstract view of problems than novices do, as exemplified by their better memory for positions on a chessboard. Instead of remembering that there was a pawn on the third square in the fourth column, the remember that it was “King’s gambit declined” (or whatever). Similarly, experts engage in more cross-referencing, relating the current problem to other situations they’ve encountered in the past; and they tend to organize the problem situation into higher-order patterns.

9. What, if anything, happens when you are conscious of a visual stimulus, that does not happen when you are unconscious of the same stimulus?

- a. Activity spreads through more of your brain. ***
- b. Activity starts in a different part of your brain.
- c. Activity shifts from mostly the left hemisphere to mostly the right hemisphere.
- d. Your brain activity is identical in both cases.

Chapter 10. Some theorists have argued that the left hemisphere is conscious, and the right hemisphere is silent. But conscious processing doesn’t involve the activity of a particular module or system in the brain; rather, conscious processing seems to involve “broadcasting” percepts, memories, and thoughts to the brain as a whole.

10. What is characteristic of someone in a vegetative state?

- a. No brain activity and no response to any stimulus
- b. Low, steady brain activity and no response to any stimulus
- c. Limited responsiveness, such as increased heart rate in response to pain ***
- d. Brief periods of purposeful actions and speech comprehension

Chapter 10. Patients in the vegetative state aren’t exactly comatose, because they seem to go through fairly normal sleep-wake cycles, and respond at least somewhat to particularly intense stimuli. But they aren’t able to communicate with other people, or, apparently, understand what is going on around them.

11. Sleepwalking, lucid dreaming, and waking up unable to move illustrate which idea?

- a. Sleep serves several functions including conservation of energy.
- b. People vary genetically in their circadian rhythms.
- c. Sometimes one brain area is awake while another is asleep. ***
- d. REM sleep is more abundant at some times of night than at others.

Chapter 10. Apparently the brain isn’t necessarily all awake or asleep at the same time. In sleep paralysis, for example, the reticular activating system apparently arouses cortical centers, while diminished activity in the pons prevents motor commands from reaching the skeletal musculature.

12. What type of person would probably respond strongly to hypnosis?
- Someone of below-average intelligence and limited education
 - Someone who reacts to movies as if the events were real ***
 - Someone who starts the session by resisting and refusing to cooperate
 - Someone who has a family history of insomnia

Chapter 10. People who are highly hypnotizable are predisposed to high degrees of “imaginative involvement” in other domains as well, such as when they read a novel or watch a movie.

13. In implicit emotion:

- the verbal-cognitive component of emotion is absent but the overt motor component is present. ***
- the verbal-cognitive and motor components are absent but the covert physiological component is present.
- the motor component is absent but the physiological component is present.
- all three components of emotion are present.

Lecture 37. In the explicit-implicit distinction, a subject’s behavior is influenced by percepts, memories, knowledge, thoughts, feelings, and motives outside of conscious awareness. In Lang’s multiple-systems view of emotion, the verbal-cognitive component counts as the conscious expression of emotion, while the behavioral and physiological components would count as unconscious expressions of emotion.

14. What is unusual about learned avoidance behaviors?
- They are easily forgotten.
 - They are highly resistant to extinction. ***
 - They fail to generalize to similar stimuli.
 - Only humans can learn them.

Chapter 15. Avoidance behaviors don’t extinguish because, by virtue of successful avoidance, the organism never learns that the CS is no longer associated with the shock US. Escape behavior does extinguish, because escape responses are initiated *after* the shock comes on, not before, giving the organism the opportunity to experience the changed contingency. Because it doesn’t extinguish, avoidance learning is often thought to be the source of obsessive-compulsive disorders – or, at least, the compulsive part.

15. Physiologically, what do most addictive drugs have in common?
- They decrease the reuptake of serotonin.
 - They attach to receptors on the presynaptic neuron.
 - They increase the release of dopamine. ***
 - They increase blood flow to the brain.

Chapter 15. Addictive drugs work through the reward circuit of the brain, and the reward circuit is loaded with dopamine receptors. Activation by dopamine generates feelings of pleasure. But pleasure is only part of the addictive cycle. The other parts are tolerance, in which it takes ever greater doses of the drug to achieve the pleasurable high, and withdrawal, a highly unpleasant state that occurs as the drug wears off. The general view is that addiction is not so much a matter of achieving the high as it is avoiding withdrawal.

16. On average, what is special about a first episode of depression, compared to later episodes?
- a. The first episode is more often a response to an intense precipitating event. ***
 - b. The first episode is usually the briefest.
 - c. The first episode is the least likely to respond well to therapy.
 - d. The first episode has the most gradual onset.

Chapter 15. Remember the diathesis-stress theory of the etiology of mental illness. It turns out that stress is most important in triggering the initial acute episode of depression. Once depression has been set in motion, as it were, patients can experience a recurrence of the illness even in the absence of further stressors.

17. The neurodevelopmental hypothesis of schizophrenia emphasizes the importance of events in which time of life?
- a. Prenatal development ***
 - b. The preschool era
 - c. Childhood between about ages 6 to 10
 - d. Adolescence

Chapter 15. We usually think of the stressors in the diathesis-stress model as psychosocial in nature, but they can also be biological. In the case of schizophrenia, one popular view is that prenatal events, occurring in the womb, such as a difficult pregnancy, maternal malnourishment, or even being born in the winter, can interact with a genetic predisposition to increase an individual's risk for schizophrenia. Post-natal events, in this view, are rather less important.

18. The personality disorders fit all the criteria for a psychopathology except:
- a. deviance from statistical norms.
 - b. deviance from social norms.
 - c. personal distress. ***
 - d. maladaptiveness.

Lecture 38. The thing about personality disorders is that their associated thoughts and behaviors seem "normal" to the patient – it's only *other people* who are bothered by them.

19. According to the most popular biochemical hypothesis, schizophrenia is caused by the:
- a. excessive activity of dopamine. ***
 - b. diminished activity of dopamine.
 - c. excessive activity of phenothiazine.
 - d. diminished activity of phenothiazine

Lecture 39. Dopamine, again. In addition to being important for the reward circuit in the brain, excessive dopaminergic activity, associated with the use of amphetamines and cocaine, can lead to symptoms, like hallucinations and delusions, which resemble those observed in schizophrenia. Similar observations have been made in animal models of psychosis. Also, many antipsychotic drugs, such as the phenothiazines, appear to act on dopamine receptors. But it's not a lack of phenothiazine, in this theory, that causes schizophrenia; it's an excess of dopamine.

20. In the diathesis-stress model, an allele of the _____ gene acts as a diathesis for _____.

- a. MAO-A; schizophrenia
- b. 5-HTT; depression ***
- c. COMT; psychosis
- d. MET-22; adolescent conduct disorder

Lecture 40. The MAO-A gene, in combination with maltreatment in childhood, increases the risk for adolescent conduct disorder. The COMT gene, in combination with adolescent marijuana use, increases the risk for psychosis in young adults. The MET gene on Chromosome 22 gene has been implicated in autistic spectrum disorder.

21. In the treatment of a mental illness such as depression:

- a. positive response occurs when the patient is no longer relapsing.
- b. the probability of recurrence is roughly half the probability of relapse.
- c. continuation treatment is advisable after remission. ***
- d. no maintenance treatment is recommended after full recovery.

Lecture 41. Depression offers a good example of the varied courses that mental illness can take. After a person displays enough symptoms, severe enough to warrant a formal diagnosis, the symptoms may remit spontaneously, or remission may occur in response to psychotherapy or pharmacotherapy, alone or in combination. But even after remission takes place, the patient remains at risk for relapse or recovery. For that reason, it's advised to continue treatment for a time after remission has occurred.

22. According to the "Open Systems" model of eating disorders:

- a. conscientiousness predicts a negative outcome of treatment, while openness predicts positive outcome.
- b. patients who are more susceptible to social influence are also more likely to profit from group therapy.
- c. a child's symptoms help maintain the family organization which triggered them in the first place. ***
- d. eating-disordered children are best treated in inpatient centers, where they can be isolated from the toxic effects of their parents and siblings.

Lecture 42. The Open Systems model is an excellent example of how we should view any instance of mental illness in social context. In this case, childhood or adolescent eating disorder (anorexia, bulimia, etc.) are viewed not as a problem with the individual alone ("No man is an island", as they say), but as a problem with the family. In part, the patient's illness may be a response to his or her family situation; on the other hand, the family may organize itself around the patient's illness, in such a manner as to perpetuate it. For this reason, successful intervention has to occur at the level of the family, and perhaps other significant outsiders, as well as the individual who is the "designated patient".

23. Socrates said:

- a. "Know thyself."
- b. The unexamined life is not worth living." ***
- c. "I think, therefore I am."
- d. "Where do we come from? What are we? Where are we going?"

Lecture 43. Socrates said it, in his *Apology*, right before he took poison as punishment for prompting the youth of Athens to ask too many questions. "Know thyself" is attributed to one of the "Seven Sages" of ancient Greece. Descartes said "I think, therefore I am", and began the philosophical shift from metaphysics to epistemology that laid the foundation for scientific psychology. "Where do we come from..." is the title of a famous painting by Paul Gauguin, from his "Tahiti" period.

Cumulative Portion

24. The term *monism* refers to which belief?

- a. All animal life on Earth evolved from a single ancestor.
- b. Every behavior has a cause.
- c. Mental activity is the same thing as brain activity. ***
- d. Heredity and environment are equally important for behavioral development.

Chapter 1. Descartes's dualism held that there were two types of things: material things and mind, which is composed of an immaterial substance. Monism says that there is only one type of thing, and basically argues that "immaterial" mental activity is just the activity of the material brain. Most psychologists are materialists, in the sense that they acknowledge that "mind is what the brain does", but that doesn't prevent psychology, as a science, from focusing on the psychological as opposed to the biophysical level of analysis.

25. Who compared his own insights and theories to those of Copernicus and Darwin?

- a. John Watson
- b. Sigmund Freud ***
- c. Alfred Binet
- d. William James

Chapter 1. Freud made this claim: that Copernicus taught us that we were not the center of the universe, Darwin taught us that we were just animals, and Freud told us that we were irrational, and driven by unconscious, primitive, sexual and aggressive impulses. Copernicus and Darwin got it right, but poor Freud got it wrong, just like everything else about his theory. More recently, certain social psychologists have tried to displace Freud, claiming that conscious will is an illusion, and that our experience, thought and action are driven by unconscious automatic processes. They're wrong too – but to understand why, you'll have to look at the Lecture Supplements for my "Consciousness" course. URL: <https://www.ocf.berkeley.edu/~jfkilstrom/ConsciousnessWeb/index.htm>.

26. Why was psychology considered to be an “impossible science”?

- a. human behavior is too complex to be reduced to biological and physical processes.
- b. the important questions in psychology, such as the nature of personality and mental illness, cannot be brought into the laboratory for study.
- c. the mind is not a material substance, and so cannot be measured. ***
- d. all psychology is “folk psychology”, and thus inherently unscientific.

Lecture 1. Descartes’s dualism assumed that mind was composed of an immaterial substance, lacking extension in space. Therefore, it couldn’t be measured the way physical objects and processes are. And because science is based on measurement, psychology couldn’t be a science, and was subject only to philosophical inquiry. This was Kant’s argument, and the psychophysicists proved him wrong by showing that experiences could be measured after all. Wundt thought that scientific psychology was limited to the study of immediate sensory-perceptual experience, and that “higher” mental processes, not to mention personality and mental illness, couldn’t be studied in the laboratory. But he never claimed that psychology as a whole was an impossible science. Some psychologists thought that human behavior was too complex, and therefore they focused on ostensibly simpler animal behavior, but again none of them thought that psychology was impossible. And some philosophers (and, sadly, some psychologists) think that the psychological level of analysis is little more than the “folk psychology” that your grandmother could have taught you, and think that truly scientific psychology should be done at the neurophysiological level of analysis; but again, this is a debate about how scientific psychology should proceed -- not about whether scientific psychology is even possible.

27. How do the synapses responsible for taste and smell differ from those for vision and hearing?

- a. The synapses for taste and smell have effects that are expressed more widely in the brain.
- b. The synapses for taste and smell have inhibitory effects; vision and taste are excitatory.
- c. The synapses for taste and smell react more slowly and their effects last longer. ***
- d. The synapses for taste and smell occur only in the spinal cord and not in the brain.

Chapter 3. Which is why it takes a little longer to smell and taste things than to see or hear them, and why tastes and smells last longer than sights and sounds, after the stimuli have disappeared. The larger point, however, is that all synapses (and the neurotransmitters that cross them), and not all neurons, are alike.

28. The prefrontal cortex is known to be highly important for which of the following?

- a. Shifting attention by controlling activity of other brain areas ***
- b. Recognizing faces by controlling eye movements
- c. Regulating hunger and satiety by controlling secretion of hormones
- d. Controlling wake/sleep cycles by controlling body temperature

Chapter 3. The prefrontal cortex is involved in lots of executive functions, including the control of attention: disengaging from the current focus of attention, shifting attention, and engaging the new focus. Facial recognition appears to be performed by the fusiform gyrus in the temporal lobe; hunger and satiety are functions of the hypothalamus; and the wake/sleep cycle is controlled by the pons.

29. Compared to the sympathetic nervous system, the parasympathetic nervous system.

- a. mediates the first response to stressful events and other emergencies.
- b. acts discretely, on one organ or system at a time. ***
- c. has rapid onset and slow offset.
- d. has slow onset and rapid offset.

Lecture 2. The sympathetic nervous system mediates emotional arousal, like the “flight or fight” reflex’ it acts quickly, as a unit, and depletes bodily resources (like stored blood sugar). The parasympathetic nervous system dampens emotional arousal, acts on one organ at a time, as needed, to restore bodily resources.

30. In the “locked-in syndrome”, the primary locus of brain damage is the:

- a. reticular formation.
- b. thalamus.
- c. hypothalamus.
- d. pons. ***

Lecture 3. Patients with the locked-in syndrome are conscious, so there is no damage to either the reticular formation (also known as the reticular activating system) or the thalamus. There is, however, damage to the pons, a part of the brainstem which mediates motor signals from the cortex intended for the skeletal musculature – which is how these patients get “locked in”. The hypothalamus is important for many homeostatic motives like hunger and thirst.

31. A patient’s speech is slow and labored, but comprehensible, and she has no problem understanding speech. Her brain damage is probably localized in the _____ lobe.

- a. frontal ***
- b. temporal
- c. parietal
- d. occipital

Lecture 4. This is a description of Broca’s aphasia, which is caused by damage to Broca’s area in the frontal lobe. The contrast is to Wernicke’s aphasia, in which patients have difficulties both producing and comprehending understandable speech, and which is caused by damage to Wernicke’s area in the temporal lobe.

32. In terms of localization of function, which function *does not* belong with the others?

- a. Sequential analysis.
- b. Mathematical computation
- c. Speech and language.
- d. Pattern recognition. ***

Lecture 5. The right hemisphere is specialized for pattern recognition; the left hemisphere is specialized for the other three functions.

33. Someone claims that ESP shows up only when the vibrations are right and that there is no way to know whether the vibrations are right except to see whether ESP shows up. Why is this proposal not scientifically acceptable?

- a. It is not falsifiable. ***
- b. It has too many independent variables.
- c. It has too many dependent variables.
- d. It has no demand characteristics.

Chapter 2. If there's no way to know when "the vibrations" are right, then there is no way to set the conditions under which the hypothesis can be tested. There is always "bad vibrations" to explain away any negative result. Therefore, the hypothesis is unfalsifiable.

34. Which of the following is a common problem with survey research?

- a. Not enough people agree to answer the survey questions.
- b. Many people express unconsidered or ill-informed opinions. ***
- c. Most surveys have too many independent variables.
- d. Most surveys have too many dependent variables.

Chapter 2. Sampling is a problem with survey research, especially these days, when cell-phone numbers aren't listed in the telephone directories that survey researchers often draw on. But the bigger problem is that survey subjects don't usually take time to consider their responses to survey questions, and survey researchers don't always take, or have, time to probe deeply for their considered opinions.

35. An individual has a z-score of 1.95 on a certain test. That means that she:

- a. scores lower than average.
- b. scores higher than about 95% of the population. ***
- c. has a score corresponding to about 400 on the Scholastic Aptitude Test (SAT).
- d. no conclusions can be drawn without information about the standard deviation of the mean.

Lecture 6. Remember the "Rule of 68, 95, and 99". A Z-score of 1.95 represents not quite 2 standard deviations above the mean. In a normal distribution 50% score below the mean. And 95% score within 2 standard deviations of the mean. So, you add 50% plus 95%/2 = 97.5%, which is higher than 95%. The SAT is scored to have a mean of 500 and a standard deviation of 100, so a score of 400 is 1 SD *below* the mean.

36. What is the main difference between classical conditioning and operant conditioning?
- In operant conditioning, the animal receives rewards instead of punishments.
 - In operant conditioning, the animal's behavior controls the outcome.
 - In operant conditioning, the animal associates one stimulus with another stimulus. ***
 - In operant conditioning, the animal receives reinforcement on every trial, not just some.

Chapter 6. In classical conditioning, the organism learns to anticipate the unconditioned stimulus, depending on its contingent relationship with the conditioned stimulus. In operant or instrumental conditioning, the animal's voluntary (i.e., not reflexive) behavior occurs in response to the presence of cues signaling the likelihood of reinforcement.

37. According to the social learning perspective, what increases self-efficacy?
- Threats of punishment
 - Strictly enforced deadlines
 - Role models similar to yourself ***
 - High rewards for highly successful performances

Chapter 6. Self-efficacy is a concept that comes out of social learning theory, which emphasizes vicarious (observational) learning, by modeling (example) or by formal teaching (precept), without the direct experience of rewards or other reinforcement. And when it comes to observational learning, we learn more from models who are similar to ourselves on various dimensions.

38. Instincts (fixed action patterns) show that:

- the evolution of behavior is limited to simple reflex-like responses.
- imprinting can occur even late in development.
- releasing stimuli are not required for adaptive behavior to occur.
- evolved behavioral patterns do not enable individuals to adjust to changing environmental circumstances. ***

Lecture 7. Instincts are innate responses to releasing stimuli that often take the form of very complex patterns of behavior. They are universal within a species, and they are very adaptive for individuals who are living in the environmental niche in which the behavior evolved, but because evolution takes place over very long periods of time, they're of no use to an individual who has to live in rapidly changing environmental circumstances. For that, organisms have to be able to learn – to change their individual behavior in response to environmental events.

39. What are the implications of savings in relearning?

- Classical conditioning is more efficient than instrumental conditioning.
- Classical conditioning is constrained by evolved stimulus-response connections.
- Extinction inhibits, but does not abolish, the conditioned response. ***
- responses conditioned under a variable-ratio schedule of reinforcement are difficult to extinguish completely.

Lecture 8. Conditioned responses disappear during extinction, but they're not abolished. Rather, the organism learns to inhibit the conditioned response. And if the contingencies change, so that the CS once again has the power to predict the US, the CR is re-acquired very rapidly, resulting in savings in relearning. And even in the absence of relearning, the inhibition can relax over time, resulting in spontaneous recovery. So, by virtue of extinction, the organism hasn't been put back in the state it was in before the acquisition trials took place. Rather, extinction trials help the organism learn when the CS predicts the US, or when the CR is reinforced, and when it does not.

40. Backwards conditioning procedures shows that the _____ assumption of stimulus-response (S-R) learning theory is false.

- a. arbitrariness
- b. empty organism
- c. association by contiguity ***
- d. law of exercise

Lecture 9. In backwards conditioning, the CS follows the US, rather than preceding it. Even though the interval between the two stimuli is held constant, conditioning only occurs when the CS comes first. That shows that associations are not formed on the basis of spatio-temporal contiguity, but rather because, in some sense, the CS predicts the US.

41. Studies of statistical learning in infants show that:

- a. a certain level of central nervous system maturation is required for complex learning to occur.
- b. learning can occur simply through observation, in the absence of reinforcement. ***
- c. successful observational learning requires an age- and gender-appropriate model.
- d. learning can occur by observation alone, but learning by response consequences is more efficient.

Lecture 10. In statistical learning, infants (and older organisms too, but the most remarkable demonstrations occur in infants) learn the contingent relations between different stimuli, such as various combinations of phonemes or other sounds, simply by experiencing their repeated presentation, without any reinforcement. In this sense, statistical learning is a special case of latent learning, and is especially important in social learning situations.

42. The opponent-process theory of color vision explains which of these observations?

- a. From a greater distance, blue dots look black, although other small dots keep their color.
- b. You can easily recognize an object's color even while wearing tinted glasses.
- c. After you stare at a bright color for a minute, you look away and see a different color. ***
- d. Color vision becomes weaker and weaker toward the periphery of the retina.

Chapter 4. Negative color after-images constitute the primary behavioral evidence in favor of the opponent-process theory. In fact, opponent-process theory was expressly devised as a way of explaining them, when the traditional trichromatic theory couldn't.

43. One reversible figure can be seen either as a vase or as two profiles looking toward each other. Which Gestalt principle does this observation illustrate?

- a. Proximity
- b. Similarity
- c. Continuation
- d. Figure and ground ***

Chapter 4. The Gestalt principle of figure and ground states that the perceptual system automatically organizes the stimulus field into an object and its background. In Rubin's vase, which is what this question is all about, a black (or white) vase reverses into a pair of white (or black) silhouettes. What happens when Rubin's vase reverses, then, is that figure becomes ground, and ground becomes figure.

44. The _____ is the most important feature distinguishing among the various modalities of sensation.

- a. proximal stimulus
- b. receptor organ
- c. afferent tract
- d. projection area ***

Lecture 11. When it comes to the modality of sensory experience, it doesn't matter how it starts out (as proximal stimuli falling on receptor organs), nor does it matter how it gets there (via afferent nerves); what matters where it ends up. Electrical stimulation of hair cells, or of the auditory nerve, or of the auditory cortex, will all result in the experience of sound, even if no mechanical vibrations stimulate the hair cells in the cochlea.

45. The principal problem with the trichromatic theory of color vision is:

- a. we can discriminate among too many different colors.
- b. negative afterimages occur in color as well as black and white. ***
- c. there are more than three types of cones on the retina.
- d. the visual cortex is not organized chromotopically.

Lecture 12. You can get every color in the Pantone catalog from an appropriate combination of red, blue, and green, and as it happens there are three cones on the retina responsive to the wavelengths corresponding to these colors, so the trichromatic theory is on the right track. Unfortunately, the trichromatic theory predicts that yellow will be seen as a blend of red and blue, while actual observers see it as a pure color. Most important, the experience of yellow occurs as a negative afterimage when the eye is stimulated with "blue" light, which is evidence that there is a fourth receptor system – not in the retina, because there are only three types of cones, but elsewhere (like in the lateral geniculate nucleus), forming the physiological basis for the opponent-process theory of color vision.

46. A problem with classical psychophysics is that:

- a. sensory detection depends on expectations and incentives. ***
- b. the relative threshold is higher than the absolute threshold.
- c. sensation is determined by the interplay of duplex opponent processes.
- d. sensation sometimes grows more quickly than stimulation.

Lecture 13. Classical psychophysics construes stimulus detection as a simple matter of physical intensity. If a stimulus is strong enough to cross the absolute threshold, it will be detected; if a new stimulus is strong enough to cross the relative threshold, a difference will be detected between it and a prior stimulus. But experiments based on signal-detection theory show that even super-threshold stimuli can be missed, and even subthreshold stimuli can be detected, depending how observers set their criteria for detection based on their expectations (e.g., base rates of catch trials) and motives (e.g., incentives for hits, false alarms, etc.).

47. Which cue to depth or distance does not belong with the others?

- a. Convergence. ***
- b. Elevation.
- c. Shadowing.
- d. Optic flow.

Lecture 14. The cues to depth or distance come in four categories representing the cells of a 2x2 table: monocular vs. binocular, and ocular vs. optical. Convergence is a binocular ocular cue for depth, because it reflects the turning inward of the eyes as the observer focuses on an object; All the other cues are monocular in nature, in that they are available to a "cyclopean" observer who has only one eye; and they're also optical, in that the cue information comes not from the eyes and their surrounding musculature, but rather from the image that falls on the retina.

48. Which phenomenon is the best example of "bottom-up" processing?

- a. Feature detection. ***
- b. Pattern recognition.
- c. Spelling-pattern codes.
- d. Word superiority.

Lecture 15. Bottom-up processing begins with the physical properties of the stimulus, including the context in which the stimulus is presented. Top-down processing begins with the subject's knowledge, expectations, and beliefs. In feature detection, the stimulus is analyzed for the presence of certain physical features, such as straight or curved lines, bars of light and dark, points of light or dark, and the like. Pattern recognition involves connecting patterns of elementary features with knowledge about familiar patterns stored in memory – like codes spelling patterns (e.g., "I before E except after C..."). The word-superiority effect, in which letters are better recognized if they occur in the context of familiar words, obviously involves top-down processing, based on the subject's knowledge of language.

49. Many visual illusions are a product of:

- a. size constancy.
- b. linear perspective ***
- c. visual orthography.
- d. Gestalt completion.

Lecture 16. Many of the classic visual illusions are created by perceptual (chiefly optical) cues to distance. For example, in the Ponzo illusion, converging lines make adjacent horizontal bars appear to differ in length, because the visual system unconsciously infers that they lie at differing distances from the observer.

50. Short-term memory has which of the following characteristics?

- a. It can hold only a small amount of information. ***
- b. It lasts less than a second.
- c. It is synonymous with implicit memory.
- d. It is stored in the muscles, not the brain.

Chapter 7. Remember “The magical number 7, plus or minus 2”. Items can be held in short-term memory as long as rehearsal is devoted to them.

51. After damage to the hippocampus, what type of amnesia did patient H.M. suffer?

- a. Retrograde amnesia for procedural memories
- b. Anterograde amnesia for procedural memories
- c. Anterograde amnesia for implicit memories
- d. Anterograde amnesia for declarative memories ***

Chapter 7. Hippocampal damage, such as that suffered by Patient H.M., produces an anterograde amnesia affecting the patient’s ability to remember events that occurred since the onset of the brain damage. These events represent episodic memory, which, along with semantic memory, are declarative memories. But amnesic patients can acquire and use new procedural knowledge, as when H.M. found it easier to solve various kinds of puzzles with repeated attempts.

52. A long retention interval:

- a. increases the primacy effect, but has no effect on the recency effect.
- b. increases the recency effect, but has no effect on the primacy effect.
- c. decreases the primacy effect, but has no effect on the recency effect.
- d. decreases the recency effect, but has no effect on the primacy effect. ***

Lecture 17. The primacy portion of the serial-position curve reflects retrieval from long-term memory, the recency portion reflects retrieval from short-term memory. So varying the retention interval, giving short-term memory more opportunity to decay, will affect recency effect but leave the primacy effect undisturbed.

53. Elaborative rehearsal:

- a. improves short-term memory, but not long-term memory.
- b. improves long-term memory, but not short-term memory. ***
- c. increases clustering, but not consolidation.
- d. increases consolidation, but not clustering.

Lecture 18. Elaboration (relating individual items to prior knowledge) and organization (relating individual items to each other) both improve long-term memory. The primacy effect occurs because items occurring early in a list have increased opportunity to undergo both types of processing. Short-term memory is enhanced by maintenance rehearsal, or rote repetition, as in the recency portion of the serial-position effect.

54. Forgetting from long-term memory is primarily a problem of:

- a. trace decay.
- b. displacement.
- c. consolidation.
- d. interference. ***

Lecture 19. Different kinds of memories are lost through different mechanisms. Items in the sensory register disappear very rapidly unless processed into short-term memory; they are also subject to displacement by newly arriving information. Items in short-term memory are primarily forgotten through displacement, though decay can also play a role. Consolidation essentially encodes information in short-term memory into long-term memory. Unless the consolidation process has been disrupted (e.g., by a concussive head injury), forgetting from long-term memory is chiefly caused by proactive or retroactive interference by other memories, as in the fan effect.

55. Long-term memory is best for:

- a. information subject to maintenance rehearsal.
- b. information that conforms to prior expectations.
- c. information which is schema-incongruent. ***
- d. information subject to serial reproduction.

Lecture 20. According to the schematic processing principle, items that are relevant to the subject's knowledge, expectations, and beliefs are remembered better than items that are irrelevant. Memory favors schema-congruent items because knowledge, expectations, and beliefs provide additional cue information at the time of retrieval. Memory also favors schema-incongruent items because surprising information, which violates the subject's knowledge, expectations, and beliefs, receive extra processing (more elaboration) at the time of encoding. However, schematic processing may also lead subjects to incorrectly remember schema-congruent information that was not, actually, presented to them. This doesn't happen with schema-incongruent items, so when you take account of both hits and false alarms, memory is best for schema-incongruent items.

56. Which of the following tends to be true of satisficers?
- a. They consider many possibilities before making a decision.
 - b. They often regret their decisions and wonder whether another one would have been better.
 - c. They choose fairly quickly but generally feel pleased with their choices. ***
 - d. They consistently choose the least expensive of the choices available.

Chapter 8. According to the principle of normative rationality, people make decisions and choices based on a principle of optimality – maximizing expected gains and minimizing expected losses. But Herbert Simon showed that individuals and organizations are more likely to follow a “satisficing” principle – making choices that entail acceptable, if not maximal, gains, and acceptable, if not minimal, losses. And he got a Nobel Prize for it, adding psychological considerations to economic theory, a process that culminated in the work of Kahneman and Tversky, among others.

57. “A boy was chased by a tall girl” and “A girl who chased a boy was tall” differ in what way, if any?
- a. They differ in their deep structure.
 - b. They differ in their surface structure. ***
 - c. They differ in both their deep structure and their surface structure.
 - d. They differ in neither their deep structure nor their surface structure.

Chapter 8. The two sentences mean the same thing, so in Chomsky’s terms they are identical with respect to deep structure, or their kernel of meaning. But they differ in terms of their voice (active or passive) and other aspects of surface structure.

58. If you had never played chess before, but you learned the game quickly and developed clever strategies, you would be displaying what?
- a. Fluid intelligence ***
 - b. Crystallized intelligence
 - c. The Flynn effect
 - d. Multiple intelligences

Chapter 9. In Cattell’s terms, crystallized intelligence is, essentially, “book-learnin’”. Fluid intelligence is raw ability, unshaped by teaching and other experiences, which can be applied to any number of different situations, including novel ones. The Flynn effect refers to the fact that the average IQ in various populations has increased over the past several decades since standardized intelligence tests, like the Wechsler Adult Intelligence Scale, were introduced.

59. Although the mean score on an IQ test is 100, what is the mode?
- a. About 120
 - b. About 95
 - c. About 84
 - d. About 105 ***

Chapter 9. IQ tests are standardized so as to yield a normal distribution of scores, in which the mean, median, and mode are identical. However, the mode, or most frequent score, is slightly higher than the mean, because very low intelligence is – let’s put it gently – maladaptive. As a result, there are fewer people with low IQs than would be expected, based on the normal distribution.

60. Biological taxonomies are good examples of categorization by:

- a. proper sets. ***
- b. prototypes.
- c. exemplars.
- d. disjunctive theories.

Lecture 21. Biological taxonomies are perfect examples of classification by proper sets. They are defined by packages of features that are singly necessary and jointly sufficient to identify an instance of a category, they have clear horizontal and vertical boundaries between adjacent categories; because they have an all-or-none quality (you're either in the category or you're not), every instance of a category is equally as good as every other instance. That's true logically, but it's not true psychologically, which is why theorists now prefer revisionist views of categorization, such as the prototype and exemplar view.

61. Tom W. is a college student of high intelligence, although lacking in true creativity. He has a need for order and clarity, and for neat and tidy systems in which every detail finds its appropriate place. His writing is rather dull and mechanical, occasionally enlivened by somewhat corny puns and by flashes of imagination of the sci-fi type. He has a strong drive for competence. He seems to feel little sympathy for other people and does not enjoy interacting with others. Self-centered, he nonetheless has a deep moral sense. When asked, most subjects believe that Tom is more likely to be an engineering major rather than a social-science major, even though there are relatively few of the former, compared to the latter. This error illustrates the _____ heuristic.

- a. representativeness ***
- b. availability
- c. simulation
- d. anchoring and adjustment

Lecture 22. This is a classic example of the representativeness heuristic – one used by Kahneman and Tversky themselves in their research. Tom W. is described in a way that is similar to the common stereotype of the engineering major. In making their judgments, people ignore base rates – that a random college student is more likely to major in social science than in engineering.

62. Prospect theory assumes that:

- a. people overemphasize low and high risks.
- b. tend to overestimate losses, compared to gains. ***
- c. tend to engage in risky shifts.
- d. undervalue sunk costs.

Lecture 23. Actually, people underestimate low risks, and overestimate high risks, and they don't ignore sunk costs the way they should. But, as Kahneman and Tversky put it, "losses loom larger than gains".

63. Which theorist does not belong with the others?

- a. Thurstone.
- b. Spearman. ***
- c. Guilford.
- d. Gardner.

Lecture 24. Spearman's theory of *g* postulates that intelligence is a single, unitary ability: the *g* stands for general intelligence. All the other theorists, in various ways, assume that there are many different kinds of intelligence, which may not be correlated with each other. Thurstone talked of seven "primary mental abilities" derived from factor analysis. Gardner claimed a different list of seven "multiple intelligences", revealed by neuropsychological and other evidence. Guilford's "structure of intellect" theory, also based on factor analysis, is summarized by a cube containing 120 different cells, each representing an ability that was, hypothetically at least, independent of all the others.

64. At Thanksgiving dinner, Uncle Jamie asks his nephew Ross, "Can you pass the salt?", to which Ross replies "Yes", and continues eating his turkey leg. This conversation appears to violate the _____ principle.

- a. prosodic
- b. cooperative ***
- c. phonological
- d. Whorffian

Lecture 25. This is a classic example of language pragmatics, where the listener has to go beyond the meaning of the words to infer the speaker's intention. Speakers and listeners must actively cooperate with each other in order to be understood. The speaker should say "Please pass the salt", but, failing that, the listener should understand that the speaker doesn't doubt the listener's ability to do so.

65. Which of these would the drive theory of motivation find difficult to explain?

- a. You drink more water on a hot day than on a cold day.
- b. You sometimes seek excitement and new experiences. ***
- c. You often rest after you finish a meal.
- d. On a cold day, you do whatever you can think of to get warm.

Chapter 11. The drive theory of motivation is based on the concept of homeostasis, and involves the organism striving to maintain optimal levels of something --- blood sugar in the case of hunger, cell fluids in the case of thirst, body temperature in the case of thermoregulation. In all these cases, departure from normal levels leads to "excitement", and the return to normal levels leads to "calm". But sometimes we actively seek excitement and new experiences, and drive-reduction theory can't really explain that. Excdpt

66. For most jobs, the quality of the work (as opposed to the quantity) depends mainly on what?
- Satisfaction with the pay
 - Being young
 - Extrinsic motivation
 - Intrinsic motivation ***

Chapter 11. Quantity of work depends on pay, an extrinsic motive in which the desire to engage in some activity depends on reward. Quality of work, and satisfaction derived from work (as opposed to satisfaction derived from pay), depends on intrinsic motivation – the person’s desire to perform the job, without (or, at least, independent of) the promise or prospect of reward.

67. According to Schachter and Singer’s theory, what does your sympathetic nervous system arousal determine?
- Which emotion you feel
 - The action that your emotion stimulates
 - The appraisal related to your emotion
 - The intensity of your emotion ***

Chapter 12. In the Schachter-Singer theory, all emotions have in common an undifferentiated state of autonomic arousal. The amount of arousal determines the intensity, or quantity, of the emotion. What determines the quality of emotion, however, is the person’s perception of the context in which autonomic arousal occurs. If you’re aroused and the people around you are happy, you feel happy as well; if you’re aroused and the people around you are sad, you feel sad instead.

68. What is one explanation for why reports of life satisfaction have failed to increase in the United States in recent decades?
- Average wealth per person has not increased.
 - Only the rich people are getting richer. ***
 - Average wealth does not correlate with life satisfaction.
 - Life satisfaction changes too slowly to measure.

Chapter 12. It’s not true that money doesn’t buy happiness: there is a positive correlation between wealth and happiness – although at some point an increase in wealth doesn’t entail a commensurate increase in happiness. But, as in the present economy, the rich get richer while the poor, working-class, and middle-class get poorer, or stagnate at best – when the overall gains in the economy aren’t shared – then people engage in social comparison, see that other people are doing a lot better than they are, and become dissatisfied with their life situation.

69. According to the James-Lange theory:
- there are two primary dimensions of affect, pleasant-unpleasant and calm-excitement.
 - the perception of physical response to a stimulus is experienced as an emotion. ***
 - all emotions have physiological arousal in common; they differ only in intensity.
 - all emotions have physiological arousal in common; they differ only in the context in which arousal takes place.

Lecture 26. The James-Lange theory has been summarized as “You run from the bear, *then* you feel afraid”. In other words, emotion is the result of the perception of the organism’s behavioral response, whether muscular or glandular, to the stimulus.

70. Intrinsic motivation is most likely to be undermined when rewards:

- a. are unexpected.
- b. are perceived as controlling behavior. ***
- c. are small enough to induce cognitive dissonance.
- d. are large enough to induce cognitive dissonance.

Lecture 27. Intrinsic motivation is the desire to engage in some activity without the promise or prospect of rewards. Rewards that are perceived as controlling tend to undermine intrinsic motivation, but rewards that provide information about performance tend to enhance it.

71. Which of the following would cause you to make an internal attribution for your friend's happiness?

- a. Most people are happy right now.
- b. Your friend is happier now than you have seen in months.
- c. You know that your friend is happier around you than around anyone else.
- d. Your friend is happy most of the time. ***

Chapter 13. According to the "covariation calculus for causal attribution" proposed by Kelly, people explain behavior in terms of external (environmental, situational) factors when it varies depending on the context, as in options B and C. They explain behavior in terms of internal (personal, trait-like) factors when it does not vary from one situation to another.

72. What type of fear message, if any, is most effective in persuading people?

- a. Nearly all fear messages are effective in persuasion.
- b. Fear messages are almost never effective in persuasion.
- c. Fear messages are most effective if they describe an extreme danger.
- d. Fear messages are most effective if they describe a moderate danger. ***

Chapter 13. Fear messages are not great tools for persuasion in the best of circumstances, but the most persuasive are also the most plausible – that is, if they describe a moderate danger – either moderate in magnitude or moderate in probability. Too extreme, and people think the communicator is a kind of "Chicken Little"; too mild, and they just don't care, or don't think it's likely to happen (at least to them). Remember from Kahneman and Tversky's Prospect Theory that people tend to think that low probabilities are even lower than they really are.

73. What does the learning approach to personality emphasize?

- a. Stability of personality from one situation to another
- b. Careful measurement of five major personality traits
- c. Vicarious reinforcement and punishment ***
- d. Attempts to gain access to unconscious thoughts and memories

Chapter 14. Nobody – well, almost nobody – thinks that personality development occurs by virtue of classical and instrumental conditioning via the direct experience of reinforcement. But the whole point of the social learning theory of personality, as promoted by Bandura and others, is that the learning involved is observational in nature, based on modeling, imitation, and the vicarious experience of rewards and punishments.

74. What evidence (if true) would show importance of “shared environment” in personality development?
- a. A strong correlation between parents and their biological children
 - b. A strong correlation between parents and their adopted children ***
 - c. A strong correlation between monozygotic twins
 - d. A weak correlation between parents and their biological children

Chapter 14. If a trait is heritable, then children will resemble their biological parents, with whom they share 50% of their genes. But if a trait arises because of environmental influences, and in particular the shared environment within families), then children will resemble their adoptive parents. And if children resemble neither their biological nor their adoptive parents – well, that’s logically due to the influence of the nonshared environment. In this way, adoption studies complement twin studies in behavior genetics.

75. In an experiment, subjects high on Trait A showed, on average 15 units of anxiety in Situation Y and 8 units in Situation Z. Subjects high on Trait B showed, on average, 11 units of anxiety in Y and 4 units in Z. This pattern of results illustrates:
- a. the effect of personality but not of the situation.
 - b. the effect of both personality and the situation. ***
 - c. a person-by-situation interaction.
 - d. effects of both personality and the situation, plus a person-situation interaction.

Lecture 28. The solution to these sorts of problems is to sketch out the graph, so you can see whether there is a person-by-situation interaction or not. In this case the lines representing the values for A and B are parallel, so there’s no interaction. Averaging across the two situations, A shows generally higher levels of anxiety than B, so there’s an effect of personality. And averaging across the two persons, Y elicits generally more anxiety than Z, so there’s an effect of the situation as well.

76. Which of the Big Five personality traits shows the highest average Z-score?
- a. Neuroticism.
 - b. Extraversion.
 - c. Conscientiousness.
 - d. None of the above. ***

Lecture 29. Trick question. Most people are more extraverted, and conscientious, than they are neurotic. But Z scoring gives all variables a mean of 0 and a standard deviation of 1.

77. The “personality coefficient:

- a. varies from 0 (zero) to 1.
- b. varies from -1 to +1.
- c. is approximately .30. ***
- d. represents a heritability of approximately .50.

Lecture 30. All correlation coefficients vary from -1 through 0 to +1. The “personality coefficient” has to do with our ability to predict behavior in some specific situation, given knowledge of an individual’s personality traits. Walter Mischel famously claimed that the trait-behavior correlation rarely exceeded $r = .30$, meaning that personality accounted for only about 10% ($.30^2$) of variance in the behavior. The personality coefficient has nothing to do with heritability.

78. Bystanders are more likely to intervene in an emergency when:

- a. they are alone. ***
- b. they are with others.
- c. the situation is ambiguous.
- d. there are no models for helping in the environment.

Lecture 31. When there’s a group of bystanders, each individual tends to look to the others for cues as to how to respond. Because they’re all looking at each other for clarification (a situation known as pluralistic ignorance), nobody’s doing anything to help. Another factor is diffusion of responsibility: each individual assumes that someone else is going to help, so nobody helps. But when you’re alone, there’s nobody else to take responsibility, and nobody else to provide cues, so you’re more likely to do what you can to offer assistance.

79. In the Prisoner’s Dilemma, competitive players tend to elicit competitive responses even from cooperative partners. This is an example of:

- a. evocation
- b. selection
- c. behavioral manipulation. ***
- d. cognitive transformation.

Lecture 32. This is a phenomenon called the “behavioral assimilation of cooperators to competitors”. Competitive subjects behave in the Prisoner’s Dilemma in such a way as to elicit competitive behavior from initially cooperative partners. Interestingly, there isn’t much evidence for the behavioral assimilation of competitors to cooperators”. The primary way to get competitive people to cooperate is to behave competitively – a strategy known as “tit for tat”.

80. According to Piaget, which concept do children lack when they are in the preoperational stage?
- a. Object permanence.
 - b. Conservation. ***
 - c. Schemas.
 - d. Accommodation.

Chapter 5. In Piaget's theory, children employ and revise the schemas (schemata) through which they engage with the world through a cycle of assimilation and accommodation. In the course of development, they pass through several discrete stages, set apart by cognitive landmarks. The achievement of object permanence (i.e., memory) marks the transition from sensory-motor processing to pre-operational thought; conservation marks the transition from pre-operational to operational thought.

81. What do people do during a midlife transition?
- a. They increase their social activities.
 - b. They grieve about their physical deterioration.
 - c. They take a job with lower pay.
 - d. They reassess their goals. ***

Chapter 5. Erikson's theory of psychosocial development modified and extended Freud's theory of psychosexual development – which, really, only covered infancy through adolescence. In Erikson's view, adolescence is characterized by identity formation, and young adulthood by the quest for intimacy – not to mention career-building. In the midlife transition, which culminates in retirement (if you're lucky), you re-evaluate all that you've accomplished, or not accomplished, and maybe formulate new goals for the rest of your life.

82. A twin study of "suicidality" found that:

- a. there was a significant genetic contribution to suicidal ideation, but not to actual suicide attempts.
- b. there was a significant genetic contribution to suicide attempts, but not to suicidal ideation.
- c. there was a significant contribution from the shared environment to both suicidal attempts and ideation.
- d. there was a significant contribution from the nonshared environment to both attempts and ideation. ***

Lecture 33. Suicidal behavior can be classified into *thinking* about suicide and *attempting* suicide (also *completing* suicide). It turns out that there is a genetic contribution to both aspects of suicide; the contribution of the shared environment to suicidal ideation is negligible; and, as so often is the case with personality and social interaction, there is a huge contribution of the nonshared environment to both thoughts and actions concerning suicide.

83. In the famous experiment known as "Pygmalion in the Classroom", a random sample of children were identified as "intellectual late-bloomers". Teachers treated them differently from the other children in the class, and they subsequently showed greater gains in test scores over the school year. This experiment illustrates _____ effects in the nonshared environment.
- a. child-driven ***
 - b. parent-driven
 - c. relationship-driven
 - d. family context

Lecture 34. This is a little complicated, but the best answer is that the "Pygmalion" effect is child-driven. It's the identification of the child that causes the teachers to behave as they do. True, the identification is in the heads of the teachers, but "intellectual late-bloomer" is, ostensibly, something that the child is. The Pygmalion effect really illustrates the complexities of reciprocal determinism: the child gets a label, which shapes the teacher's expectations, which leads the teacher to behave in a particular way, which leads to a particular outcome for the child.

84. The androgen-insensitivity syndrome in males:

- a. genetic females are raised as boys, and behave in a typically “masculine” manner.
- b. genetic females are raised as girls, but behave in a typically “masculine” manner.
- c. genetic males are raised as girls, and behave in a typically “feminine” manner. ***
- d. genetic males are raised as boys, but behave in a typically “masculine” manner.

Lecture 35. The sex hormones shape bodies, but they also shape behavior. Normally, periodic baths of androgen masculinize the internal and external genitalia of the fetus. Androgen-insensitivity precludes these effects, so that a genetically male fetus is born with female, or at least ambiguous, genitalia. These children are usually raised as girls. The behavioral effects of androgen are evident in these children, who show lower levels of activity and aggression than hormonally normal genetic males.

85. The “false belief” task shows that:

- a. mental age exceeds chronological age by the time a child is 6 years old.
- b. children can engage in inductive reasoning by the time they are 6 years old.
- c. even pre-operational children can show one-to-one correspondence and other counting principles.
- d. by the time they are 4-5 years old, most children can impute mental states to other people. ***

Lecture 36. The “false belief” task, in which children demonstrate that they know what someone else is thinking, and also that they know that they believe something else, is the classic test of the “theory of mind”. Most normal children pass it by the time they are 4-5 years old; children on the autism spectrum often do poorly on this test.

86. What would suggest that a woman in a vegetative state was conscious?

- a. She turned toward the voices of familiar people but not unfamiliar people.
- b. Part of her brain responded to the instruction, “imagine playing tennis.” ***
- c. She occasionally smiled or frowned while music was playing.
- d. Painful stimuli caused an increase in her body temperature.

Chapter 10. Patients in the vegetative state sometimes display reflexive or other automatic reactions that give the appearance that they are conscious, but this evidence is ambiguous. The best evidence of consciousness is the person’s deliberate, discriminative response to a novel request.

87. Sunlight plays what role, if any, in circadian rhythms?

- a. Sunlight resets the rhythms. ***
- b. We learn from sunlight to set our rhythms at 24 hours instead of some other length.
- c. The brightness of sunlight increases the length of the circadian rhythm.
- d. Sunlight is irrelevant to circadian rhythms.

Chapter 10. The circadian rhythm is more or less synchronized with the day-night cycle of the environment. Special neurons in the retina (neither rods nor cones) transmit information about ambient light through the suprachiasmatic nucleus, which serves as the main clock for “body time” by regulating the release of melatonin by the pineal gland.

88. Automatic processes:

- a. are under conscious control.
- b. are activated regardless of the context. ***
- c. can be stopped once they have begun.
- d. consume attentional resources that might be devoted to other ongoing activities.

Lecture 37. Automatic processes generate reflex-like responses to specific stimuli, but the responses themselves are not reflexes. They're too complex, and they've usually been acquired through extensive practice (like riding a bicycle or operating a standard-shift car). They are inevitably evoked by particular stimuli (thus, B is correct) – and, once evoked, proceed incorrigibly to completion (thus, C is wrong). Because their execution consumes few or no cognitive resources, they create little or no interference with other ongoing cognitive activities (thus, D) is wrong. Automatic processes are unconscious in the strict sense that they occur independent of conscious intention, and outside of conscious awareness (thus A is wrong).

89. Can people with different symptoms get the same psychiatric diagnosis? Why or why not?

- a. No, because each diagnosis pertains to a single symptom.
- b. No, because the symptoms of any disorder make it impossible to have a different disorder.
- c. Yes, because psychiatrists have not established any rules for how to diagnose disorders.
- d. Yes, because several diagnoses depend on an “either–or” rule. ***

Chapter 15. The diagnostic categories aren't proper sets, with defining symptoms that are singly necessary and jointly sufficient to make a diagnosis. Rather, they're fuzzy sets, represented by prototypes, with characteristic symptoms that are only probabilistically associated with a syndrome.

90. Of the following, which therapy is LEAST concerned with people's emotions?

- a. Behavior therapy ***
- b. Cognitive therapy
- c. Psychoanalysis
- d. Humanistic therapy

Chapter 15. In general, behavior therapy, like behaviorism, isn't interested in internal mental states – whether cognitive, emotional, or motivational. Rather, as its name implies, it's interested primarily in behavior, and in changing behavior by applying the principles of learning. Cognitive-behavioral therapy also focuses on behavior, but seeks to change behavior by altering the patient's beliefs and expectations.

91. Which is *not* a problem with psychiatric diagnosis?

- a. It does not require the presence of defining symptoms.
- b. There are no standards to follow in making diagnostic judgments. ***
- c. There is considerable heterogeneity within diagnostic categories.
- d. There are no clear boundaries between syndromes.

Lecture 38. Psychiatric diagnosis is an act of categorization, and the diagnostic categories are categories like any other. The *Diagnostic and Statistical Manual* lists the symptoms that are characteristic of each category, as well as rules for how the information is to be combined, so there are definitely standards for making diagnostic judgments. The fact that these symptoms are not *defining* symptoms, only characteristic symptoms, is not a problem, though it does make for considerable heterogeneity within categories, and sometimes unclear boundaries between categories. But that's just the way most categories are structured – they're not *bugs*, they're *features*.

92. Studies of working memory comparing patients with schizophrenia with normal controls reveal:

- a. errors in schizophrenia are unrelated to set size.
- b. errors in schizophrenia are greatest with small search-set sizes.
- c. errors in schizophrenia are greatest with large search-set sizes. ***
- d. response latencies are unrelated to errors.

Lecture 39. Psychological deficits in schizophrenia are magnified by task difficulty. So, they're relatively small when patients have to search through relatively small sets, and are magnified when patients have to search through larger sets, which make greater demands on working memory.

93. The concordance rate in MZ twins is higher for _____ than for _____.

- a. schizophrenia; bipolar affective disorder
- b. schizophrenia; unipolar affective disorder
- c. bipolar affective disorder; schizophrenia ***
- d. unipolar affective disorder; bipolar affective disorder

Lecture 40. Not all major mental illnesses are equally heritable, suggesting that they do not have a common genetic underpinning. Judging by the difference between MZ and DZ concordance rates, bipolar disorder has a higher heritability than either schizophrenia or unipolar disorder. Even so, genes are not destiny, and the individual's genetic endowment leaves him or her only "at risk" for one disorder or another.

94. The "Dodo Bird verdict" is misleading because:

- a. many types of treatments have not been evaluated in clinical trials.
- b. it only considers the relative magnitude of treatment effects.
- c. it ignores the cost of the various treatments. ***
- d. it does not consider side effects, which occur in psychotherapy just as they do in pharmacotherapy.

Lecture 41. The Dodo Bird Verdict is that all forms of psychotherapy are equally effective. That's true, if you look only at whether they produce statistically significant differences between treated patients and controls. But it's not true if you look at the magnitude of the difference. And it's not true if you take account of the cost of treatment. On both accounts, cognitive-behavioral treatments are superior to all other forms of psychotherapy.

95. What does it mean to say that the stigma of mental illness is “concealable”?

- a. The stigma of mental illness becomes less apparent over time.
- b. Mentally ill people can often “pass” for “normal”. ***
- c. The origins of mental illness are not apparent to those who harbor prejudice against mental patients.
- d. The mentally ill tend to isolate themselves from society.

Lecture 42. Unlike the stigma associated with physical illness, which often affects visible body parts, the stigmata (that’s the plural) of mental illness are largely invisible, being mental in nature. For this reason, it’s not always obvious to others who is mentally ill, unless the illness results in particular behavioral signs. These may become more apparent over time, as observers become more familiar with the patient, or encounter the patient in more varied or more challenging situations.

96. Psychologically speaking, the key to the uniqueness of the individual lies in the:

- a. phyletic imprimatur.
- b. interaction among cognitive, emotional, and motivational processes.
- c. the interaction of the child with significant others.
- d. the effect of the non-shared environment. ***

Lecture 43. The major lesson from behavior genetics, and the nature-nurture debate in general, is that human uniqueness emerges from the individual’s interactions with his or her unique psychological environment, as they play out over time.

97-98. Read the following passage (adapted from Scientists ‘Inject’ Information into Monkeys’ Brains” by Carl Zimmer, *New York Times*, 12/20/2017), and then answer Questions 97-98.

When you drive toward an intersection, the sight of the light turning red will (or should) make you step on the brake. This action happens thanks to a chain of events inside your head. Your eyes relay signals to the visual centers in the back of your brain. After those signals get processed, they travel along a pathway to another region, the premotor cortex, where the brain plans movements. Now, imagine that you had a device implanted in your brain that could shortcut the pathway and “inject” information straight into your premotor cortex. That may sound like an outtake from “The Matrix.” But now two neuroscientists at the University of Rochester say they have managed to introduce information directly into the **premotor cortex of monkeys**. In order to study the premotor cortex, Dr. Mazurek and his co-author, Dr. Marc H. Schieber, trained two rhesus monkeys to play a game. The monkeys sat in front of a panel equipped with a button, a sphere-shaped knob, a cylindrical knob, and a T-shaped handle. Each object was ringed by LED lights. If the lights around an object switched on, the monkeys had to reach out their hand to it to get a reward — in this case, a refreshing squirt of water. Each object required a particular action. If the button glowed, the monkeys had to push it. If the sphere glowed, they had to turn it. If the T-shaped handle or cylinder lit up, they had to pull it. After the monkeys learned how to play the game, Dr. Mazurek and Dr. Schieber placed 16 electrodes in each monkey’s premotor cortex. Each time a ring of lights switched on, the electrodes transmitted a short, faint burst of electricity. The patterns varied according to which object the researchers wanted the monkeys to manipulate. **As the monkeys played more rounds of the game, the rings of light dimmed.** At first, the dimming caused the monkeys to make mistakes. But then their performance improved. Eventually the lights went out completely, yet the monkeys were able to use only the signals from the electrodes in their brains to pick the right object and manipulate it for the reward. And they did just as well as with the lights. This hints that the sensory regions of the brain, which process information from the environment, can be bypassed altogether. The brain can devise a response by receiving information directly, via electrodes. “The stimulation must be producing some conscious perception,” said Paul Cheney, a neurophysiologist who was not involved in the new study. Dr. Schieber speculated that the monkeys “might

feel something on their skin. Or they might see something. Who knows what?” What makes the finding particularly intriguing is that the signals the scientists delivered into the monkey brains had no underlying connection to the knob, the button, the handle or the cylinder. Once the monkeys started using the signals to grab the right objects, the researchers shuffled them into new assignments. Now different electrodes fired for different objects — and the monkeys quickly learned the new rules. “This is not a prewired part of the brain for built-in movements, but a learning engine,” said Michael A. Graziano. Engineers are working on implantable arrays that might include as many as 1,000 electrodes. So it may be possible one day to transmit far more complex packages of information into the premotor cortex. Dr. Schieber speculated that someday scientists might be able to use such advanced electrodes to help people who suffer brain damage. Strokes, for instance, can destroy parts of the brain along the pathway from sensory regions to areas where the brain makes decisions and sends out commands to the body. Implanted electrodes might eavesdrop on neurons in healthy regions, such as the visual cortex, and then forward information into the premotor cortex. “When the computer says, ‘You’re seeing the red light,’ you could say, ‘Oh, I know what that means — I’m supposed to put my foot on the brake,’” said Dr. Schieber. “You take information from one good part of the brain and inject it into a downstream area that tells you what to do.”

97. The premotor cortex is located in the _____ lobe.

- a. frontal ***
- b. parietal
- c. occipital
- d. temporal

Comprehension 1a. This passage draws on knowledge acquired during the first half of the course, which emphasized cognitive processes and the biological bases of mind and behavior. The motor cortex is located in the frontal lobe, adjacent to the central fissure which separates the frontal and parietal lobe. The premotor cortex is, as its name implies, also in the frontal lobe, “in front” of the primary motor cortex.

98. The “Light-dimming” procedure used to establish the response to brain stimulation most closely resembles:

- a. generalization.
- b. sensory preconditioning
- c. shaping ***
- d. discrimination learning.

Comprehension 1b. Skinner and others showed that complex behaviors could be controlled by reinforcing simple components, and then additional components to the contingencies of reinforcement. Thus, for example, you can train a pigeon to turn in a circle by gradually reinforcing successively longer turns to the left or right. The same principle is being applied in this experiment. The animal is first exposed to a salient light, then the intensity of the light is diminished until all that is left is the brain stimulation itself. It’s not generalization, because the light and the brain stimulation are not on the same sensory continuum. It’s not sensory preconditioning, because the light and the brain stimulation are not paired before reinforcement is introduced. And it’s not discrimination learning, because the animal isn’t being trained to respond to the stimulation rather than the light. Rather, the light just becomes irrelevant.

99-100. Read the following passage (adapted from an article by Naoise Mac Giollabhui et al., which appeared in the *Journal of Abnormal Psychology*, 2018), and then answer Questions 97-98.

Attribution theory is concerned with how people explain the causes of events. One popular theory of motivation holds that causal attributions concerning success or failure vary along three dimensions: internal-external, stable-variable, and global-specific. Internal attributions are made to oneself; external attributions to other people or environmental events. Stable attributions are made to factors that are constant from time to time and place to place; variable attributions, to factors that vary. Global attributions are made about all sorts of events; specific attributions are made only about certain types of events. The hopelessness theory of depression posits that individuals with a **negative attributional style** – the tendency to make internal, stable, global attributions for negative events -- are more likely to **become hopeless when they experience negative life events (NLEs)** and that this state of hopelessness is a proximal cause of depression. There is strong evidence supporting the role of a negative attributional style in the origins of major depression; however, the cornerstone hypothesis of the theory, that hopelessness is a proximal cause of major depression, has gone largely untested. A new study by Mac Giollabhui and her colleagues tested the theory with a diverse sample of 249 adolescents, ages 12–13 years. The subjects were first assessed at baseline and at subsequent follow-up sessions over approximately 2.5 years. Employing self-report questionnaires and clinical interviews, the investigators assessed attributional style, NLEs, feelings of hopelessness, depressive symptoms, and depression diagnosis. Subjects who showed signs of depression at initial testing were excluded from further consideration. Statistical analysis indicated that subjects with a negative attributional style, and a high number of negative life events displayed more depressive symptoms, and were more likely to experience their first acute major depressive episode within the follow-up period. However, this was only the case for subjects who also showed high levels of hopelessness. Subjects with low levels of hopelessness had fewer symptoms, and were less likely to experience an episode of depression. The study demonstrates the validity of the hopelessness theory of depression and its clinical relevance in predicting depression in adolescence.

99. In the hopelessness theory of depression, “negative” attributional style serves as the:

- a. diathesis. ***
- b. stress.
- c. proximal cause.
- d. mediating variable.

Comprehension 2a. This question draws on knowledge relating to the second half of the course, covering social psychology, personality, development, and psychopathology. The idea that a negative attributional style might serve as a diathesis for certain forms of depression was discussed in the lectures on psychopathology and psychotherapy.

100. Negative attributional style, combined with negative life events, are not sufficient to cause depression because:

- a. some specific genetic disposition is also required for an acute episode of depression to occur.
- b. people can also become depressed for other reasons.
- c. not all individuals sharing this pattern become hopeless. ***
- d. some of the subjects in the sample were already depressed.

Comprehension 2b. Diatheses (the plural of *diathesis*) are rarely strong enough to be sufficient to cause an episode of mental illness. Rather, typically, some diathesis factor (like depressogenic attributional style) combines with a stress factor (like negative life events).

