Psy/Soc Practice

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Contents

The Human Nervous System

1. Which of the following is not part of the forebrain?

A. thalamus
B. cerebrum
C. corpus callosum
D. substantia nigra

2. Terminal buttons are at the ends of...

A. dendrites
B. axons
C. the axon hillock
D. nodes of Ranvier

3. Damage to the posterior section of the superior temporal gyrus in the dominant cerebral hemisphere is associated with

A. Wernicke's aphasia
B. Parkinson's disease
C. Broca's aphasia
D. apraxia of speech

4. Damage to Broca's area would likely result in which of the following?

A. expressive aphasia
B. echolalia
C. palilalia
D. echopraxia

5. A brain tumor patient has lost motor function in his left leg. However, he still maintains sensation in that part. Which of the following is the most likely site of the tumor?

A. right frontal lobe
B. left parietal lobe
C. occipital lobe
D. right temporal lobe

6. All of the following brain structures are part of the limbic system except the

A. hippocampus
B. amygdala
C. hypothalamus
D. reticular formation

7. Which of the following is the chief inhibotory neurotransmitter in the CNS?

A. acetylcholine
B. serotonin
C. GABA
D. dopamine

8. Which of the following is the most likely consquence of the bilateral lesion of the amygdalae in monkey?

A. reduction of fear
B. uncontrolled appetite
C. loss of vision
D. impaired motor function

9. A typical split-brain patient

A. finds it difficult to speak about objects in certain portions of their field of vision
B. suffers from abnormal difficulty in solving abstract problems
C. experiences a permanent loss of muscle coordination
D. cannot decipher the meaning of speech if sound stimuli only reach the right ear

10. The area of the brain most responsible for encoding memory is the

A. hypothalamus
B. occipital lobe
C. medulla oblongata
D. hippocampus

11. During nerve impulse transmission, at the peak of an action potential

A. potassium channels open
B. the influx of potassium ions decreases
C. sodium channels close
D. the rate of efflux of sodium ions is maximized

12. The region of the cerebral cortex involved in the planning, control, and execution of voluntary movements is located in the

A. frontal lobe
B. parietal lobe
C. temporal lobe
D. occipital lobe

13. The part of the parietal lobe that lies next to the motor cortex is the

A. primary auditory cortex
B. central sulcus
C. somatosensory cortex
D. Wernicke's area

14. A stroke patient has difficulty remembering to shave the left side of his face. Of the following, which is the most likely site of damage?

A. right frontal lobe
B. right parietal lobe
C. hippocampus
D. right amygdala

15. Which part of the cerebral cortex plays a central role in hearing, understanding language, and memory?

A. frontal lobe
B. parietal lobe
C. temporal lobe
D. occipital lobe

16. Choose the two brain structures is most closely associated with Parkinson's disease?

A. substantia nigra and basal ganglia
B. hippocampus and frontal lobe
C. thalamus and primary motor cortex
D. precentral gyrus and reticular formation

17. On the way to the cerebral cortex, the vast majority of sensory information passes through the

A. basal ganglia
B. basal forebrain
C. thalamus
D. reticular activating system

18. A construction worker notices a tool on the ground which had been misplaced earlier. Cognition of the tool occurs as sensory information reaches the cortex. The brain structure that contributes to the decision about how to respond and sends information to the motor cortex is the

A. cerebellum
B. basal ganglia
C. pons
D. precentral gyrus

19. Which of the following is the main excitatory neurotransmitter in the CNS?

A. glutamate
B. norepinephrine
C. GABA
D. anandamide

20. All of the following are monoamine neurotransmitters except

A. acetylcholine
B. norepinephrine
C. dopamine
D. serotonin

21. Dopamine is <u>not</u> synthesized within the central nervous system by cells of the

A. ventral tegmental area
B. hypothalamus
C. substantia nigra
D. adrenal medulla

22. The equilibrium potential across a typical nerve cell membrane is the same as the resting potential for which ion?

A. sodium
B. potassium
C. chloride
D. calcium

23. For a neuron with a resting membrane potential of –70mV, a typical threshold potential would be approximately

A. –90mV
B. –55mV
C. –10mV
D. +20mV

24. At the peak of an action potential

A. the membrane hyperpolarizes
B. sodium ion channels open, allowing the exit of sodium ions from the cell
C. sodium channels close
D. sodium ion channels open, allowing the entry of sodium ions into the cell

25. Which of the following would cause an EPSP?

A. an increase in the post-synaptic membrane permeability for sodium ions
B. an increase in the post-synaptic membrane permeability for chloride ions
C. an increase in the post-synaptic membrane permeability for potassium ions
D. a decrease in the post-synaptic membrane permeability for calcium ions

26. In the brains of patients suffering from Alzheimer's disease

A. damage affects dopamine production in the substantia nigra of the basal ganglia
B. loss of function and deterioration occurs with cholinergic neurons
C. a decrease in the number of astrocytes occurs due to the destruction of nearby neurons
D. white matter is demyelinated affecting the conduction of signals

27. Which of the following is the neurotransmitter in both sympathetic and parasympathetic ganglia?

A. norepinephrine
B. acetylcholine
C. dopamine
D. glutamate

28. Which of the following is most associated with anterograde axonal transport?

A. dynein
B. reuptake
C. kinesin
D. myosin

29. Nicotinic and muscarinic receptors respond to which of the following neurotransmitters?

A. acetylcholine
B. dopamine
C. norepinephrine
D. GABA

30. Which type of CNS glial cell is most similar in function to Schwann cells?

A. epindymal cells
B. astrocytes
C. microglia
D. oligodendroglia

31. Among the following which is the most likely result of a lesion to the occipital lobe

A. scotoma
B. expressive aphasia
C. receptive aphasia
D. paresthesia of the left hand

32. A brain trauma patient suffers from integrative agnosia, meaning the lack of integrating perceptual wholes within knowledge. This symptom is most likely caused by lesions to the

A. extrastriate cortex
B. somatosensory cortex
C. superior temporal gyrus
D. cingulate cortex

33. Phagocytic glial cells are called

A. astrocytes
B. microglia
C. oligodendroglia
D. ependymal cells

34. Which of the following is the anatomical basis of spatial summation of multiple EPSPs?

A. divergence
B. convergence
C. facilitation
D. presynaptic inhibition

35. Which of the following must be true regarding presynaptic inhibition?

A. at least three neurons are involved
B. an ISPS is produced
C. increased chloride conductance in the terminal of the excitatory axon
D. modulation of voltage-gated Ca^{2+} channels

36. Morphine is an agonist of the brain neurotransmitter

A. serotonin
B. glutamate
C. anandamine
D. endorphin

37. Extension of the big toe when the sole of the foot is stimulated is known as

A. the Moro reflex
B. the Galant reflex
C. the Babinski sign
D. the rooting reflex

38. Compared to the right hemisphere, in the vast majority of people, the left hemisphere of the brain is more closely associated with

A. pattern recognition
B. language processing
C. facial recognition
D. motion perception

39. If identical twins are more alike in a psychological characterstic than are fraternal twins then this characteristic is genetically influenced. Which of the following assumptions underlies this proposition?

A. that fraternal twins are less alike genetically than ordinary singlet brothers and sisters
B. that epigenetic factors affecting development are more important than sequence homologies
C. that genetic influences on the psychological trait are more powerful than environmental influences
D. that environmental influences on the characteristics are the same in fraternal and identical twins

40. The embryonic structure from which the cerebrum develops prenatally is the

A. telencephalon
B. diencephalon
C. mesencephalon
D. rhombencephalon

41. Which of the following structures does <u>not</u> develop prenatally from the prosencephalon?

A. cerebrum
B. amygdala
C. thalamus
D. medulla

42. Research has shown which of the following changes in the brain to be associated with a history of child abuse or trauma?

I. Increased limbic system sensitivity
II. Decreased hiccocampal volume
III. Decreased frontal lobe activity
IV. Attenuated sympathetic activation

A. I only
B. II only
C. I and IV
D. I, II, and III

43. Release of norepinephrine by the locus coeruleus, dopamine by the substantia nigra, serotonin by the dorsal raphe, and acetylcholine by the pedunculopontine nucleus are all examples of

A. synaptic activation
B. presynaptic inhibition
C. neuromodulation
D. second messanger systems

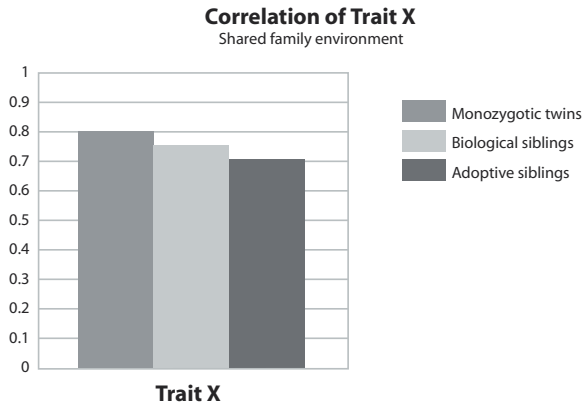
44. Which of the following does not derive from ectoderm during embryonic development?

A. notochord
B. neural tube
C. alar plate
D. neural crest

45. Of the following structures which is most functionally distinguished as a mediator of signals between the sensory cortex, association areas, and the motor cortex?

A. corpus callosum
B. reticular activating system
C. basal ganglia
D. amygdala

46. The chart below illustrates a pattern of correlation for trait X among adolescent siblings in a shared family environment. The general population of adolescent children shows 45% correlation for trait X.



Trait X shows

A. low shared environmental variance and low heritability
B. low shared environmental variance and high heritability
C. high shared environmental variance and low heritability
D. high shared environmental variance and high heritability

47. At birth, the neurons in the motor cortices of an infant have connections to the superior colliculus. In early childhood in normal development, however, the motor cortex severs these connections. This is an example of

A. neurulation
B. synaptic pruning
C. use-it-or-lose-it
D. activity dependent plasticity

48. Syntaxin and synaptobrevin are anchored in respective membranes by their C-terminal domains, whereas SNAP-25 is tethered to the plasma membrane via several cysteine-linked palmitoyl chains. The formation described in the previous statement is

A. a nicotinic acetylcholine receptor
B. a $GABA_A$ receptor
C. excitatory amino acid transporter 2 (EAAT2)
D. a SNARE complex

49. The role played by synaptotagmin in nerve impulse transmission is as

A. a Ca^{2+} sensor
B. a component of the core SNARE complex
C. a connexon specialized for electrical synapses
D. a neurotransmitter transporter

50. A stroke patient remains hospitalized in a coma. Of the following structures it is most likely the cerebral infarction affected her

A. reticular formation
B. amygdala
C. hippocampus
D. hypothalamus

Answer Key
The Human Nervous System

1. **D—**The substantia nigra is located in the midbrain. The substantia nigra, along with four other nuclei, is part of the basal ganglia. It is the largest nucleus in the midbrain.

2. **B—**Terminal buttons are structures on the end of the axon that are rich in synaptic vesicles.

3. **A—**Damage caused to Wernicke's area, located in the temporal lobe in the dominant cerebral hemisphere, results in receptive, fluent aphasia. This means that the person with aphasia will be able to fluently connect words, but the phrases will lack meaning.

4. **A—**Broca's aphasia is another term for expressive aphasia.

5. **A—**The motor cortex is the region of the cerebral cortex involved in the planning, control, and execution of voluntary movements. It is in an area of the frontal lobe located in the dorsal precentral gyrus immediately anterior to the central sulcus. The motor cortex located on the right side of the brain controls movement on the left side of the body.

6. **D—**The reticular formation is a set of interconnected nuclei that are located throughout the brainstem which play a crucial role in maintaining behavioral arousal and consciousness. It is not part of the limbic system.

7. **C—**GABA is the chief inhibitory neurotransmitter in the central nervous system.

8. **A—**The amygdalae perform a primary role in the processing of memory, decision-making, and emotional reactions. Bilateral lesion of amygdala in monkey demonstrated that there is massive reduction of fear and aggression. The monkeys also become more friendly sexually and non-sexually towards other monkeys.

9. **A—**Because left brain structures typically control speech, split brain patients have difficulty speaking about visual information processed in their right hemisphere. The portion of the visible field affected are the inputs reaching the left portion of each eye.

10. **D—**The hippocampi are elongated ridges on the floor of each lateral ventricle of the brain. They are a center for memory, spatial cognition, and conflict processing functions in the brain.

11. **C—**The sodium channels close at the peak of the action potential. Potassium ions continue to leave the cell. The efflux of potassium ions subsequently decreases the membrane potential or hyperpolarizes the cell.

12. **A—**The motor cortex is the region of the cerebral cortex involved in the planning, control, and execution of voluntary movements. It's location is an area of the frontal lobe located in the dorsal precentral gyrus immediately anterior to the central sulcus.

13. **C—**The primary motor cortex in the frontal lobe is separated from the primary somatosensory cortex in the parietal lobe by the central sulcus.

14. **B—**Damage to the right parietal lobe can result in contralateral leglect, a lack of attention to the left half of the body.

15. **C—**The temporal lobe plays a central role in hearing, understanding language, and autobiographical memory. The auditory cortex is located in the top of the temporal lobe. The language area of the temporal lobe is called Wernicke's area, though a portion of the parietal lobe is also included in Wernicke's area. The lower part of the temporal lobe is critical to encoding autobiographical memory.

16. A—Parkinson's disease is characterized, in part, by the death of dopaminergic neurons in the substantia nigra. The major projection from the substantia nigra is to nuclei of the basal ganglia. The basal ganglia receive inputs from multiple cortical areas, and then project to the motor cortex via the thalamus. The basal ganglia integrate these multiple inputs to modulate the output of the motor cortex. The loss of dopaminergic input from the substantia nigra alters the balance of the output from the basal ganglia to the motor cortex, which underlies the symptoms of Parkinson's.

17. C—Every sensory system (with the exception of the olfactory system) includes a thalamic nucleus that receives sensory signals and sends them to the associated primary cortical area.

18. B—Current theories implicate the basal ganglia primarily in action selection; that is, in helping determine the decision of which of several possible behaviors to execute at any given time. In more specific terms, the basal ganglia's primary function is likely to control and regulate activities of the motor and premotor cortical areas so that voluntary movements can be performed smoothly.

19. A—Glutamate is the main excitatory neurotransmitter in the central nervous system. Chemical receptors for glutamate fall into three major classes: AMPA receptors, NMDA receptors, and metabotropic glutamate receptors. AMPA receptors are ionotropic receptors specialized for fast excitation: in many synapses they produce excitatory electrical responses in their targets a fraction of a millisecond after being stimulated. NMDA receptors are also ionotropic, but they differ from AMPA receptors in being permeable, when activated, to calcium. Their properties make them particularly important for learning and memory. Metabotropic receptors act through second messenger systems to create slow, sustained effects on their targets.

20. A—Monoamine neurotransmitters are neurotransmitters and neuromodulators that contain one amino group that is connected to an aromatic ring by a two-carbon chain (-CH2-CH2-). All monoamines are derived from aromatic amino acids like phenylalanine, tyrosine, tryptophan, or the thyroid hormones. Acetylcholine, however, is an ester of acetic acid and choline.

21. D—Of the four major dopaminergic pathways, the mesolimbic pathway transmits dopamine from the ventral tegmental area (VTA) to the nucleus accumbens (reward and aversion related cognition). The mesocortical pathway transmits dopamine from the VTA to the prefrontal cortex (executive functions). The nigrostriatal pathway transmits dopamine from the substantia nigra pars compacta (SNc) to the caudate nucleus and putamen (motor function, reward cognition, associative learning). The tuberoinfundibular pathway transmits dopamine from the hypothalamus (arcuate nucleus aka "infundibular nucleus") to the pituitary gland (influencing the secretion of certain hormones including prolactin). Although the adrenal medulla also produces dopamine, a precursor to epinephrine and norepinephrine, the adrenal glands are not part of the CNS.

22. C—The equilibrium potential for an ion is the membrane potential where there would be no net movement across the membrane even with open diffusion channels. In this state, the Nernst potential due to the concentration gradient is equal but opposite to the electrical voltage. Because membranes have chloride channels but not active transport pumps, equilibrium diffusion potential of chloride ion across a typical nerve cell membrane exactly opposes the resting potential of the neuron (approximately -70 mV).

23. B—The threshold potential is the critical level to which a membrane potential must be depolarized to initiate an action potential.

Most often, the threshold potential is a membrane potential value between –50 and –55 mV,

24. C—If a graded potential increases past a critical threshold, typically 15 mV higher than the resting value, a runaway condition occurs and the cell fires, producing an action potential. As the membrane potential is increased, sodium ion channels open, allowing the entry of sodium ions into the cell. This is followed by the opening of potassium ion channels that permit the exit of potassium ions from the cell. The sodium channels close at the peak of the action potential, while potassium continues to leave the cell. The efflux of potassium ions decreases the membrane potential hyperpolarizing the cell.

25. A—An EPSP (excitatory postsynaptic potential) is depolarizing not hyperpolarizing. An EPSP brings the membrane potential closer towards threshold potential. An increase in the membrane permeability of sodium is typically the cause of an EPSP. On the contrary, an increase in the permeability of the postsynaptic membrane for potassium or chloride produces an IPSP (inhibitory postsynaptic potential).

26. B—In the Alzheimer's disease process, cholinergic neurons projecting from lower brain areas up to higher brain areas are selectively lost.

27. B—Efferent nerve pathways in both the sympathetic and parasympathetic nervous system consist of two neuron chains. The ganglion is the site of synapses between the two segments, the pre- and post-ganglionic fibers. In both the sympathetic and parasympathetic nervous systems, acetylcholine is the neurotransmitter in the ganglia. Acetylcholine is also the neurotransmitter at the effector organ in the parasympathetic nervous system, but norepinephrine is the neurotransmitter at the effector organ within the sympathetic nervous system.

28. C—In axonal transport kinesin and dynein are motor proteins that move cargoes. Kinesin moves in the anterograde direction (forwards from the soma to the axon tip). Dynein moves in the retrograde (towards the soma) direction.

29. A—Nicotinic and muscarinic receptors are two main classes of acetylcholine receptor, named for chemicals that can selectively activate each type of receptor without activating the other.

30. D—Performing a similar function to Schwann cells in the PNS, oligodendroglia are cells that coat axons in the central nervous system (CNS) with myelin, producing the myelin sheath. Astrocytes form the blood-brain barrier. They regulate the external chemical environment of neurons by removing excess potassium ions, and recycling neurotransmitters released during synaptic transmission. Ependymal cells line the spinal cord and the ventricular system of the brain. These cells are involved in the creation and secretion of cerebrospinal fluid (CSF). Microglia are specialized macrophages that protect neurons of the central nervous system.

31. A—A scotoma is an area of partial alteration in the field of vision consisting of a partially diminished or entirely degenerated visual acuity that is surrounded by a field of normal – or relatively well-preserved – vision. A scotoma may be the result of a lesion within the primary visual cortex, which is located in the occipital lobe.

32. A—The part of the visual cortex that receives the sensory inputs from the thalamus is the primary visual cortex, also known as visual area one (V1), and the striate cortex. The extrastriate areas consist of visual areas two (V2), three (V3), four (V4), and five (V5). Cells of the V2 cortex have been demonstrated to play a very important role in the storage of object recognition memory as well as the conversion of short-term object memories into long-term memories.

33. B—Located throughout the brain and spinal cord, microglia account for 10–15% of all cells found within the brain. As the resident macrophage cells, they act as the first and main form of active immune defense in the central nervous system (CNS).

34. B—One type of convergence occurs when multiple synaptic terminals from a single pre-synaptic neuron communicate with a single post-synaptic neuron. Another type of convergence occurs from multiple sources allowing different tracts to excite a single neuron thus allowing spatial summation (as opposed to temporal summation) of information from different sensory organs. The summation of multiple EPSPs leads to excitation of the post-synaptic neuron.

35. A—In presynaptic inhibition, a minimum of three neurons must be involved. The first synapses upon a second. A third neuron regulates the synapse between the first two by its own synapse upon the excitatory terminal of the first, an axo-axonic synapse interacting with the primary connection. The effect may be to open chloride channels or modulate calcium channels.

36. D—An agonist functions in the same manner as the naturally occurring neurotransmitter. Morphine, with a similar chemical structure, is an agonist of the brain neurotransmitter endorphin.

37. C—All choices are primitive reflexes. Primitive reflexes are reflex actions originating in the central nervous system that are exhibited by normal infants, but not neurologically intact adults, in response to particular stimuli. Babinski sign is also known as the plantar reflex.

38. B—Much of the language function is processed in several association areas, and there are two well-identified areas that are considered vital for human communication: Wernicke's area and Broca's area. These areas are usually located in the dominant hemisphere (the left hemisphere in 97% of people) and are considered the most important areas for language processing.

39. D—This is the equal environments assumption.

40. A—The dorsal telencephalon, or pallium, develops into the cerebral cortex.

41. D—All are forebrain (prosencephalon) structures except the medulla, which is a hindbrain (rhombencephalon) structure.

42. D—In addition to these changes, underdevelopment of the left brain, a smaller corpus collosum, and neuro-endocrine alterations have also been associated with a history of child abuse or trauma.

43. C—Neuromodulation is the physiological process by which a given neuron uses one or more chemicals to regulate diverse populations of neurons. This is in contrast to classical synaptic transmission, in which one presynaptic neuron directly influences a single postsynaptic partner. Neuromodulators secreted by a small group of neurons diffuse through large areas of the nervous system, affecting multiple neurons. Major neuromodulators in the central nervous system include dopamine, serotonin, acetylcholine, histamine, and norepinephrine.

44. A—The notochord is derived from mesoderm. Formed during gastrulation, the notochord induces the formation of the neural plate (neurulation) within nearby ectoderm. A postembryonic vestige of the notochord is found in the nucleus pulposus of the intervertebral discs.

45. C—The basal ganglia consist of multiple subcortical nuclei, of varied origin situated at the base of the forebrain. Currently, popular theories implicate the basal ganglia primarily in action selection; that is, it helps

determine the decision of which of several possible behaviors to execute at any given time. In more specific terms, the basal ganglia's primary function is likely to control and regulate activities of the motor and premotor cortical areas so that voluntary movements can be performed smoothly. Experimental studies show that the basal ganglia exert an inhibitory influence on a number of motor systems, and that a release of this inhibition permits a motor system to become active. The "behavior switching" that takes place within the basal ganglia is influenced by signals from many parts of the brain, including the prefrontal cortex, which plays a key role in executive functions.

46. C—There is high sibling correlation but little heritability. In judging the influence of genes of environment on trait X, environmental variance is much higher than heritability.

47. B—Synaptic pruning or axon pruning is the process of synapse elimination that occurs between early childhood and the onset of puberty. The purpose of this type of synaptic pruning (regulatory pruning) is to remove unnecessary neuronal structures from the brain; as the human brain develops, the need to understand more complex structures becomes much more pertinent, and simpler associations formed at childhood are replaced by complex structures. The pruning that is associated with learning is known as small-scale axon terminal arbor pruning. Axons extend short axon terminal arbors toward neurons within a target area. Certain terminal arbors are pruned by competition. The selection of the pruned terminal arbors follow the "use it or lose it" principle seen in synaptic plasticity. This means synapses that are frequently used have strong connections while the rarely used synapses are eliminated.

48. D—The primary role of SNARE proteins is to mediate vesicle fusion, that is, the fusion of vesicles with their target membrane bound compartments. The best studied SNAREs are those that mediate docking of synaptic vesicles with the presynaptic membrane in neurons.

49. A—Synaptotagmin is a Ca^{2+} sensor in the membrane of the pre-synaptic axon terminal.

50. A—The reticular activating system is a set of connected nuclei in the brains of vertebrates that is responsible for regulating wakefulness and sleep-wake transitions. Its most influential component is the reticular formation. The two most common causes of prolonged coma are diffuse axonal injury following traumatic brain injury or a brainstem lesion involving the reticular activating system.

Sensation and Perception

1. Most refraction of light entering the eye takes place at the boundary between the

A. air and cornea
B. cornea and aqueous humor
C. aqueous humor and lens
D. lens and vitreous humor

2. All sensory impulses on the way to the cortex pass through the thalamus except impulses from sensory receptors involved in

A. vision
B. hearing
C. olfaction
D. proprioception

3. A weight-lifter performing a squat exercise experiences a sudden relaxation of a thigh muscle (rectus femoris) to prevent tearing. The efferent impulses governing the response originate from which CNS structure?

A. cerebellum
B. precentral gyrus
C. medulla
D. spinal cord

4. A cereal manufacturer conducts a marketing study and discovers that the smallest reduction in weight that a customer barely perceives in the same box is reduction from 12 oz. to 11.4 oz. What is the smallest amount which the customer could notice removed from the 24 oz. box?

A. 0.60 oz
B. 0.83 oz
C. 1.20 oz
D. 2.40 oz

5. The sound of a politician's voice is emanating from a public address system on the side of the lectern, but an audience member perceives the sound coming from the speaker. This is an example of

A. visual capture
B. perceptual constancy
C. the binding problem
D. selective attention

6. We perceive the panda figure below as being whole even though it is not complete.

This is an example of the perceptual principle of

A. bottom-up processing
B. figure-ground
C. closure
D. similarity

7. For the figure below:

Reading 'THE CAT' despite the ambiguous lettering is an example of

A. good continuation
B. top-down processing
C. change blindness
D. phi phenomenon

8. Turning a coin in your hand while examining it visually edgewise, the proximal stimulus changes but the object maintains perceptual identification as a coin. This illustrates

A. good continuation
B. perceptual constancy
C. the principle of Prägnanz
D. feature detection

9. A municipal transit authority performed a study to determine whether a chime announcing the impending arrival of a train would be detected by travelers within a noisy subway station. The expert categorized those cases in which the subject correctly noted that the chime was absent as

A. misses
B. hits
C. correct rejections
D. false alarms

10. If you stare at a red triangle on a page and then turn away to a blank piece of paper, you will see an image of a green triangle on the page. This is best explained by which of the following theories?

A. Young-Helmholtz theory
B. trichromatic theory
C. place theory
D. opponent process theory

11. In the processing of visual information, an integrated image of an object is not formed until the information is processed by the

A. occipital lobe
B. somatosensory cortex
C. lateral geniculate nucleus
D. superior colliculus

12. Which of the following best explains why particular smells may be powerful triggers for memory recall?

A. Thalamic input from olfaction routes through the hippocampus.
B. The olfactory bulb is one of the few structures undergoing continuing neurogenesis in adults.
C. The connectivity of vomernasal sensorglomery neurons to mitral cells is precise.
D. The olfactory bulb is part of the limbic system.

13. Which of the following best explains how individuals with red-green color blindness can still see yellow?

A. trichromatic theory
B. opponent process theory
C. signal detection theory
D. synesthesia

14. The Barany chair is a device used for aerospace physiology training. The subject is placed in the chair, blindfolded, then spun about the vertical axis while keeping his head upright or tilted forward or to the side. The subject is then asked to perform tasks such as attempting to point at a stationary object without blindfold after the chair is stopped. The chair is used to demonstrate effects which may occur in flight maneuvers on

A. CSF pressure
B. cerebellar peduncles
C. the vestibular system
D. the lateral geniculate nucleus

15. A synonym for the physiological blind spot located on the retina of the eye is the

A. optic disc
B. fovea centralis
C. macula lutea
D. sclera

16. In beta movement, an object is perceived as moving when, in fact, a series of stationary images is being presented. At faster alternation rates, and if the distance between the stimuli is just right, an illusory "object" the same colour as the background is seen moving between the two stimuli and alternately occluding them. This is called

A. synesthesia
B. the phi phenomenon
C. good continuation
D. Prägnanz

17. Which structure marks the boundary between the middle and inner ear?

A. tympanic membrane
B. cochlea
C. oval window
D. malleus

18. A subject was found 50% of the time to correctly detect an 800 Hz tone with a RMS sound pressure of 20 μPa. For this study participant, this particular level of stimulus

A. represents the absolute threshold of hearing for a tone of that frequency
B. is below the minimum threshold of hearing for a tone of that frequency
C. represents the difference threshold of hearing for a tone of that frequency
D. is above the minimum threshold of hearing for a tone of that frequency

19. A person relaxing on their hammock experiences the sound of a leaf blower in a neighboring yard with a loudness of 85dB. When another landscaper joins to work alongside the first, the new loudness experienced will be approximately

A. 88dB
B. 90dB
C. 95dB
D. 99dB

20. Given that neurons possess a maximum firing rate of approximately 500 Hz, which of the following provides the best explanation for the human ability to perceive sonic frequencies in the 500 Hz to 1000 Hz range?

A. place theory
B. frequency theory
C. volley theory
D. signal detection theory

21. Proprioceptors are <u>not</u> located in the

A. striated muscle
B. tendons
C. joints
D. inner ear

22. Which of the following are a type of proprioceptor?

I. Muscle spindles
II. Golgi tendon organs
III. Pacinian corpuscles
IV. Ruffini corpuscles

A. I and II
B. III and IV
C. I, II, and III
D. I, II, III and IV

23. Which of the following stimuli is most likely to trigger activation of nociceptors in the skin?

A. application of a warm compress
B. a light touch with a feather
C. an incision breaking the skin
D. vibration of a cellular phone

24. Sensory receptors comprised of free nerve endings responding to stimulus with an increase or decrease in firing rate best describes which of the following?

A. thermoreceptors
B. hair cells
C. hair follicle receptors
D. nociceptors

25. Which sensory receptors hyperpolarize to initiate signal transduction in response to a stimulus rather than depolarize?

A. nociceptors
B. rods and cones
C. Pacinian corpuscles
D. Merkel cells

26. Which of the following reflects the correct order of signal amplication and transduction in the retina?

A. rhodopsin, transducin, phosphodiesterase, cGMP, 5' GMP
B. transducin, rhodopsin, phosphodiesterase, 5' GMP, cGMP
C. rhodopsin, transducin, phosphodiesterase, 5' GMP, cGMP
D. rhodopsin, phosphodiesterase, transducin, 5' GMP, cGMP

27. Transducin is a

A. tyrosine kinase
B. G-protein coupled receptor
C. heterotrimeric G-protein
D. guanylate cyclase

28. Which types of mechanoreceptor found in the skin is most responsible for sensitivity to light touch?

A. Pacinian corpuscles
B. Ruffini's corpuscles and Merkel cells
C. Pacinian corpuscles and free nerve endings
D. Merkel cells and Meissner's corpuscles

29. Between the retina and the sclera is

A. the choroid
B. vitreous humour
C. aqueous humour
D. the ciliary body

30. Visual impairment is often associated with albinism in humans primarily due to

A. decreased retinal production
B. lack of iris pigment epithelium melanosomes
C. absence of melanin in the choroid
D. degeneration of the macula

31. Which of the following is a cause of myopia?

A. decreased accomodation in aging
B. flattened cornea
C. axial length of the eyeball is too great
D. decreased converging power of the lens

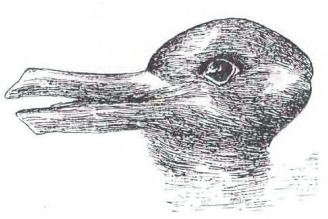
32. The organ of Corti

A. rests upon the tectorial membrane
B. is between the tympanic duct and vestibular duct
C. is filled with perilymph
D. comprises the cochlea of the inner ear and the vestibule

33. All of the following are special senses except

A. balance
B. hearing
C. smell
D. proprioception

34. A classic example of a multistable object is shown below:



In this figure, the rabbit and the duck are each a different

A. proximal stimulus
B. distal stimulus
C. figure-ground
D. percept

35. A person whose prescription for eyeglasses call for -2.25 diopter lenses suffers from

A. emmetropia
B. myopia
C. presbyopia
D. hyperopia

36. The posterior chamber of the eyeball is filled with

A. aqueous humour
B. vitreous humour
C. endolymph
D. perilymph

37. When they are <u>not</u> being stimulated by light, rod and cone cells

A. hyperpolarize and produce a graded potential
B. produce action potentials in ganglionic cells
C. depolarize and release neurotransmitter
D. promote glutamate release by a bipolar cell at its synapse with a ganglionic cell

38. The first site for the neuronal processing of input from the inner ear arriving through the vestibulocochlear nerve is the

A. cochlear nucleus
B. inferior colliculi
C. left posterior superior temporal gyrus
D. medial geniculate nucleus

39. How many neurons are employed by the spinothalamic tract to convey touch sensation information from a Merkel cell to the somatosensory cortex?

A. 1
B. 2
C. 3
D. 4

40. Gibson and Walk's 1959 visual cliff study involving infant perception demonstrated that

A. depth perception is at least partly an inborn trait
B. depth perception is learned and subject to classical conditioning
C. depth perception is learned and subject to operant conditioning
D. depth perception in infants relies solely on monocular cues

41. A patient suffering from PTSD perceives a coat rack in the corner as a human figure immediately upon entering their therapist's office. They have experienced a(n)

A. phobia
B. delusion
C. hallucination
D. illusion

42. Which of the following is a binocular cue for depth perception?

A. motion parallax
B. accomodation
C. linear perspective
D. convergence

43. Which of the following occurs with vibrational displacements of a stereocilia bundle of a cochlear hair cell?

A. depolarization through influx of K^+ leading to an action potential
B. hyperpolarization through influx of Cl^-
C. alternating depolarization and hyperpolarization involving flow of K^+
D. signaling from a G-protein coupled receptor system leading to neurotransmitter release

44. To adapt the eye for short-range focus

A. Release of tension of the zonular fibers suspending the lens causes the lens to become more spherical.
B. Contraction of the ciliary muscle causes the lens to become more flat.
C. Relaxation of the ciliary muscle causes the lens to become more spherical.
D. Increase of tension of the zonular fibers causes the lens to become more spherical.

45. The modulation of nociceptive projection neurons by nonnociceptive afferent neurons and descending interneurons is the underlying basis of

A. volley theory
B. lateral inhibition
C. gate control theory
D. phantom pain

46. In signal detection theory there are hits, misses, false alarms, and correct rejections. Which of the following affects the relative frequency of false alarms and misses?

A. response bias
B. just noticeable difference
C. signal intensity
D. signal-to-noise ratio

47. An experimental subject watches a video in which the syllables "ba-ba" are spoken over the lip movements of "ga-ga". The subject reports hearing the syllables "da-da". This demonstrates

A. perceptual constancy
B. top-down processing
C. multimodal processing
D. the principle of Prägnanz

48. Stimulation of which brain structure improves performance and reaction time in visual change blindness experiments?

A. superior colliculus
B. lateral postcentral gyrus
C. reticular formation
D. hypothalamus

49. A patient recovering from carbon monoxide poisoning suffers from associative agnosia. The patient can copy or match simple figures and displays knowledge of shape. However they cannot name common objects. Which of the following brain structures is the most likely site of damage?

A. left occipito-temporal region
B. lateral geniculate nucleus
C. striate cortex
D. optic nerve

50. The taste buds on the tongue sit on raised protrusions of the tongue surface called

A. microvilli
B. papillae
C. taste pores
D. lingual epithelial cells

Answer Key
Sensation and Perception

1. **A—**Most of that refraction in the eye takes place at the air–cornea boundary, since the transition from the air into the cornea is the largest change in index of refraction. About 80% of the refraction occurs at the air–cornea boundary.

2. **C—**Olfactory impulses do not pass through the thalamus but project directly to the frontal lobe and the limbic system.

3. **D—**During a somatic reflex such as this, nerve signals travel from stretch receptors along afferent nerve fibers to the posterior horn of the spinal cord. (For a reflex governing a thigh muscle, the connections involved will be in the spinal cord. For certain impulses, the reflex arc occurs in the brainstem). The gray matter of the spinal cord comprises the integrating center where these interneurons are located. Efferent nerve fibers carry motor nerve signals to muscles.

4. **C—**Weber's law states that the change in a stimulus that will be just noticeable is a constant ratio of the original stimulus.

5. **A—**Visual capture is the dominance of vision over other sense modalities in creating a percept. In this process, the visual senses influence the other parts of the somatosensory system, to result in a perceived environment that is not congruent with the actual stimuli. Through this phenomenon, the visual system is able to disregard what other information a different sensory system is conveying and provide a logical explanation for whatever output the environment provides.

6. **C—**The gestalt principle of closure states that individuals perceive objects such as shapes, letters, pictures, etc. as being whole when they are not complete.

7. **B—** Top-down processing involves perception that is an active and constructive process. Additionally, top-down processing is an approach not directly given by stimulus input, but is the result of stimulus, internal hypotheses, and expectation interactions. When a stimulus is presented where clarity is uncertain, perception becomes a top-down approach.

8. **B—** The proximal stimulus is the pattern of energy actually falling the retina which changes as the viewing angle changes. However, your perception of the coin remains constant. The constancy of the perceptual response despite changes in the proximal stimulus is called perceptual constancy.

9. **C—** In signal detection theory, a trial in whichstimuli was absent and the observer categorized it as absent is coded as a correct rejection.

10. **D—**Young–Helmholtz theory is a theory of trichromatic color vision whose initial postulate, later validated, includes the existence of three types of photoreceptors in the eye, each of which is sensitive to a particular range of visible light (yellowish green, cyanish-green, and blue). Young-Helmholtz theory is also known as trichromatic theory. (When there are two equivalent answers in a multiple choice question, neither can be right!) Opponent-process theory suggests that color perception is controlled by the activity of three opponent systems. The theory postulates three independent receptor types which all have opposing pairs: white and black, blue and yellow, and red and green. These three pairs produce combinations of colors through the opponent process. Furthermore, according to this theory, for each of these three pairs, three types of chemicals in the retina occur, in which two types of chemical reactions exist. These reactions would yield

one member of the pair in their building up phase, or anabolic process, whereas they would yield the other member while in a destructive phase, or a catabolic process. The colors in each pair oppose each other. Red-green receptors cannot send messages about both colors at the same time. This theory also explains negative afterimages; once a stimulus of a certain color is presented, the opponent color is perceived after the stimulus is removed because the anabolic and catabolic processes are reversed.

11. A—With the exception of olfactory information, all sensory information reaches the cortex by way of the thalamus. In the case of the visual system, the thalamic nucleus is the lateral geniculate nucleus. The primary visual cortex within the occipital lobe is characterized by a unique layered appearance in Nissl stained tissue, which is why it is known as the striate cortex. The extrastriate cortex includes all of the occipital lobe areas surrounding the primary visual cortex. Information from the "color", "shape/form", "location" and "motion" detecting neurons in the striate cortex are sent to different areas of the extrastriate cortex for processing of many of the characteristics associated with higher order visual perception. In addition to the striate cortex and extrastriate cortex involved in visual processing, there is also the visual association cortex. The visual association cortex includes much of the posterior temporal lobes and adjacent areas of the parietal lobe. (Most of the caudal half of the brain is involved in visual processing). In other words, taking the visual association cortex into account, "occipital lobe" is not a complete answer, but it is the best answer of the choices.

12. D—The olfactory bulb receives sensory input from axons from olfactory receptor neurons of the olfactory epithelium. The olfactory bulb is part of the limbic system, sending olfactory information to be further processed in the amygdala, the orbitofrontal cortex (OFC) and the hippocampus where it plays a role in emotion, memory and learning.

13. B—If the trichromatic theory were the only way to explain color processing, then red-green colorblind people would also be unable to see yellow (as red/green cones work simultaneously to create yellow). However, ganglion cells contribute to our color experience. Activation of a ganglion cell exciting blue and inhibits the opposing color yellow. When the ganglion cell does not receive blue information, blue is inhibited and yellow is excited.

14. C—The vestibular system consists of the otolith organs and the semicircular canals. Illusions in aviation, such as described in the question, are caused when the brain cannot reconcile the vestibular and visual inputs. The three semicircular canals, recognizing accelerations in pitch, yaw, and roll, are stimulated by angular accelerations. The otolith organs, the saccule and utricle, are stimulated by linear accelerations. Stimulation of the semicircular canals occurs when movement of the endolymph inside the canals causes movement of the crista ampullaris and the hair cells within them. Stimulation of the otolith organs occurs when gravitational forces or linear accelerations cause movement of the otolith membrane, the otoliths, and the hair cells of the macula.

15. A—The blind spot is the place in the visual field that corresponds to the lack of light-detecting photoreceptor cells on the optic disc of the retina where the optic nerve passes through the optic disc. Because there are no cells to detect light on the optic disc, the corresponding part of the field of vision is invisible.

16. B—In the phi phenomenon, motion is described as having direction but to not be bound to an object. This observation led ear-

ly researchers to suggest that the perception of motion is a primary sense.

17. C—The oval window is a membrane-covered opening that leads from the middle ear to the vestibule of the inner ear. Vibrations that contact the tympanic membrane travel through the three ossicles and into the inner ear. The oval window is the intersection of the middle ear with the inner ear and is directly contacted by the stapes.

18. A—In signal detection theory, absolute threshold is defined as the level at which a stimulus will be detected a specified percentage (usually 50%) of the time.

19. A—Intensity measures the actual energy flux produced by a sound source in watts per square meter. The loudness scale is related to intensity, but it is based on how humans perceive sound, and is proportional to the logarithm of intensity.

$$\beta = 10 \log \left(\frac{I}{I_0}\right)$$

If I_1 is the original intensity, doubling the number of amplifiers will produce a new intensity of $2I_1$. The decibel level with this new intensity will be:

$$\beta_2 = 10 \log \left(\frac{2I_1}{I_0}\right) = 10\left[\log \left(\frac{I_1}{I_0}\right) + \log 2\right]$$

Doubling the intensity results in the addition of 10 log (2) decibels, or about 3 decibels.

(If you don't remember that the common logarithm of 2 is about 0.3, then ask yourself, to what power do I need to raise 10 to get 2? Well, 2 is a bit less than the cube root of 10, so the logarithm of 2 is a bit less than one third.)

20. C—Volley theory states that groups of neurons of the auditory system respond to a sound by firing action potentials slightly out of phase with one another so that when combined, a greater frequency of sound can be encoded and sent to the brain to be analyzed. The theory is a supplement to the frequency theory of hearing. It was later discovered that this only occurs in response to sounds that are about 500 Hz to 5000 Hz.

21. D—Although contributing to movement sense, the hair cells of the semicircular canals and the otolith organs of the vestibule are not proprioceptors. The brain integrates information from proprioception and from the vestibular system into its overall sense of body position, movement, and acceleration.

22. D—Muscle spindles in striated muscle, Golgi tendon organs, and Pacinian and Ruffini's corpuscles, found in joint capsules, are all proprioceptors.

23. C—Nociceptors are pain receptors. Mechanical nociceptors respond to excess pressure or mechanical deformation such as incisions that break the skin surface.

24. A—A thermoreceptor is a non-specialised sensory receptor, or more accurately the receptive portion of a sensory neuron, that codes absolute and relative changes in temperature, primarily within the innocuous range. The adequate stimulus for a warm receptor is warming, which results in an increase in their action potential discharge rate. Cooling results in a decrease in warm receptor discharge rate. For cold receptors their firing rate increases during cooling and decreases during warming.

25. B—Activation of rods and cones is actually hyperpolarization. When they are not being stimulated, they depolarize and release glutamate continuously.

26. A—The rhodopsin or iodopsin in the disc membrane of the outer segment or a rod or

a code absorbs a photon, changing the configuration of a retinal cofactor inside the protein from the cis-form to the trans-form. This event triggers rhodopsin to activate transducin. This is the first amplification step – each photoactivated rhodopsin triggers activation of about 100 transducins. Each transducin then activates the enzyme cGMP-specific phosphodiesterase (PDE). PDE then catalyzes the hydrolysis of cGMP to 5' GMP. This is the second amplification step, where a single PDE hydrolyses about 1000 cGMP molecules. The net concentration of intracellular cGMP is reduced, resulting in the closure of cyclic nucleotide-gated Na+ ion channels located in the photoreceptor outer segment membrane. As a result, sodium ions can no longer enter the cell, and the photoreceptor outer segment membrane becomes hyperpolarized.

27. C—Rhodopsin is a G-protein coupled receptor. Transducin is the heterotrimeric G-protein associated with rhodopsin, having an α subunit which dissociates from the $\beta\gamma$ subunits in response to a conformational change in rhodopsin caused by the absorption of a photon by the rhodopsin moiety retinal. Activated transducin α-subunit activates cGMP phosphodiesterase.

28. D—Merkel cells and Meissner's corpuscles are both essential for light touch sensation. Pacinian corpuscles are responsible for sensitivity to vibration and pressure, responding only to sudden disturbances and are especially sensitive to vibration. Ruffini's corpuscles are sensitive to skin stretch, and contributes to the kinesthetic sense of and control of finger position and movement. Ruffini's corpuscles also act as thermoreceptors. Free nerve endings are nociceptors, detecting pain.

29. A—The choroid, also known as the choroidea or choroid coat, is the vascular layer of the eye, containing connective tissue, and lying between the retina and the sclera.

30. C—Melanin a dark colured pigment, helps the choroid limit uncontrolled reflection within the eye that would potentially result in the perception of confusing images. In albino humans, frequently melanin is absent and vision is low.

31. C—In myopia the eyeball is usually too long from front to back. This causes light rays to focus at a point in front of the retina, rather than directly on its surface. This makes distant objects blurry. Myopia can also be the result of a cornea that is too curved for the length of the eyeball or a lens that is too thick. For some people, their myopia may be caused by a combination of problems in the cornea, lens, and length of the eyeball.

32. B—The organ of Corti is located in the cochlea of the inner ear between the vestibular duct and the tympanic duct.

33. D—Special sense receptors are structurally more complex than general sense receptors and localized in special sense organs. General sense receptors are scattered throughout the body. Balance, provided by the vestibule, hearing and smell are special senses. Proprioception is a general sense. Proprioceptors include muscle spindles in striated muscles and tendons (Golgi tendon organ) and receptors in the fibrous capsules in joints.

34. D—The process of perception begins with an object in the real world, termed the distal stimulus or distal object. The proximal stimulus is generally defined as the pattern of energy impinging on the observer's sensory receptors.These neural signals are transmitted to the brain and processed. The resulting mental re-creation of the distal stimulus is the percept.

35. B—The refractive power of the eye in myopia (nearsightedness) is too great for the distance from the cornea to the retina. The

focussed image of far objects is located in front of the retina not upon it. Therefore, the prescription for myopia is a diverging lens. A diverging lens has a negative strength in diopters because it has a negative focal length. The strength of a lens in diopters is the reciprocal of the focal length (in meters).

36. A—The posterior chamber is a narrow space behind the peripheral part of the iris, and in front of the suspensory ligament of the lens and the ciliary processes. This name is easy to confuse with the vitreous chamber, which is even more posterior (on the other side of the lens).

37. C— Activation of a photoreceptor cell is a hyperpolarization (inhibition) of the cell. When they are not being stimulated, such as in the dark, rod cells and cone cells depolarize and release a neurotransmitter (glutamate) spontaneously.

38. A—The order of neuronal processing of necessary structures in the auditory pathway is: cochlear nucleus, inferior colliculus, medial geniculate nucleus (part of the thalamic relay system), and finally left posterior superior temporal gyrus (primary audtitory cortex). Some tracts route through the superior olivary complex of the pons on the way from the cochlear nucleus to the inferior colliculus.

39. C—The spinothalamic tract uses three neurons to convey sensory information from the periphery to conscious level at the cerebral cortex. Pseudounipolar neurons in the dorsal root ganglion have axons that lead from the skin into the dorsal spinal cord where they ascend or descend one or two vertebral levels then synapse with secondary neurons called tract cells. The axons of the tract cells cross over (decussate) to the other side of the spinal cord then travel up the length of the spinal cord into the brainstem, specifically the rostral ventromedial medulla. The neurons ultimately synapse with third-order neurons in several nuclei of the thalamus. From there, signals go to the primary somatosensory cortex.

40. A—Gibson and Walk hypothesized that depth perception is at least partly inherent as opposed to a completely learned process. To test this, they placed 36 infants, 6 to 14 months of age, on the shallow side of the visual cliff apparatus. Once the infant was placed on the opaque end of the platform, the caregivers (typically a parent) stood on the other side of the transparent plexiglas, calling out for them to come or holding some sort of enticing stimulus such as a toy so that the infant would be motivated to crawl across towards them. It was assumed if the child was reluctant to crawl to their caregiver, he or she was able to perceive depth, believing that the transparent space was an actual cliff. The researchers found that 27 of the infants crawled over to their mother on the "deep" side without any problems. A few of the infants crawled but were extremely hesitant. Some infants refused to crawl because they were confused about the perceived drop between them and their mothers. The infants knew the glass was solid by patting it, but still did not cross. In this experiment, all of the babies relied on their vision in order to navigate across the apparatus. This shows that when healthy infants are able to crawl, they can perceive depth.

41. D—An illusion refers to a misperception. This denotes an instance where the individual takes something for something else. This is in contrast to a hallucination. The key characteristic is that in hallucinations there are no external stimuli.

42. D—Because of stereopsis the two eyeballs focus on the same object. In doing so they converge. The convergence will stretch the extraocular muscles. As happens with the monocular accommodation cue, kinesthetic

sensations from these extraocular muscles also help in depth/distance perception.

43. C—Bending the stereocilia in a certain direction depolarizes the cell and results in increased afferent activity. Bending the stereocilia in the opposite direction hyperpolarizes the cell and results in a decrease in afferent activity.

44. A—In accomodation for near objects the ciliary muscle contracts, pulling itself forward and releasing the tension on the lens caused by the zonular fibers. This release of tension of the zonular fibers causes the lens to become more spherical, adapting to short range focus. Conversely, relaxation of the ciliary muscle causes the zonular fibers to become taut, flattening the lens, increasing the focal distance for long range focus.

45. C—Gate control theory explains how stimulus that activates only nonnociceptive nerves can inhibit pain, such as rubbing the area of a wound. The pain seems to be lessened when the area is rubbed because activation of nonnociceptive fibers inhibits the firing of nociceptive ones in the spinal cord lamina.

46. A—In developing signal detection theory, Green and Swets (1966) were not only interested in determining how we detect stimuli under uncertain conditions, they were also interested in response biases. Response bias in a signal detection trial is revealed in the tendency to make one type of guess over another when the subject is in doubt. In the experient, sometimes a sound is presented sometimes not. The frequency of false alarms and misses helps measure how biased a subject is for responding "yes" or "no" in general.

47. C—Speech perception is multimodal, which means that it involves information from more than one sensory modality, in particular, audition and vision.

48. A— About 90% of the axons in the optic nerve go to the lateral geniculate nucleus in the thalamus. Another population sends information to the superior colliculus in the midbrain, which assists in controlling eye movements as well as other motor responses. The general function of the superior colliculus is to direct behavioral responses toward specific points in body-centered space. The superior colliculus is also involved in generating spatially directed head turns, arm-reaching movements and shifts in attention that do not involve any overt movements. A study in 2004 (Cavenaugh, Wurzt) demonstrated that if the superior colliculus of a monkey's brain is electrically stimulated, there will be a significant decrease in reaction time to detect a visual change.

49. A— Visual agnosia is a deficit in perceiving objects. It is not due to a deficit in vision (acuity, visual field, and scanning), language, memory, or low intellect. While cortical blindness results from lesions to primary visual cortex (striate cortex), visual agnosia is often due to damage to more anterior cortex such as the posterior occipital and/or temporal lobes in the brain.

50. B— Taste buds contain the taste receptor cells, which are also known as gustatory cells. The taste receptors are located around the small structures known as papillae found on the upper surface of the tongue, soft palate, upper esophagus, the cheek and epiglottis.

Research Methods

1. Which of the following techniques would not allow visualization of changes in the brain while it processes information?

A. CT
B. fMRI
C. PET
D. EEG

2. With the new exam, AAMC reduced the emphasis of benchtop organic chemistry on the MCAT and increased the emphasis on the portion of organic chemistry most relevant in biochemistry. Concerns that achievement in synthetic organic chemistry are only weakly predictive of success in medical school most specifically argue against the old MCAT's

A. face validity
B. criterion validity
C. construct validity
D. content validity

3. Which of the following most directly improves the external validity as opposed to the internal validity of an experiment?

A. assignment of subjects to treatment and control groups by a random procedure
B. random selection of test subjects
C. controls for maturation of test subjects during the course of the experiment
D. retrospective pretesting

4. Random assignment in combination with double blind experimental procedure will help address concerns regarding

A. sampling error
B. pre-test effects
C. selection bias
D. reactivity

5. Which types of reactivity in experimental procedures may be the result of stereotyping?

I. Rosenthal effect
II. Pygmalian effect
III. Experimenter effect
IV. Hawthorne effect

A. I only
B. II, and III
C. I, II and III
D. I, II, III and IV

6. For which of the following hypotheses would testing by experimental procedure be nearly impossible?

A. Meditation prior to instruction lengthens attention span.
B. Trauma in early childhood leads to decreased frontal lobe function.
C. Increased consumption of root vegetables alleviates color blindness.
D. Dark clothing decreases the persuasiveness of a person's arguments.

7. The following set of four numbers {0,6,8,14} has a mean value of 7. What is the standard deviation of this distribution?

A. 3.0
B. 3.5
C. 5.0
D. 7.0

8. What is the median of this distribution?
8, 2, 5, 6, 8, 7

A. 5.0
B. 6.0
C. 6.5
D. 8.0

9. In addition to being one of the greatest centers of all time, Shaquille O'Neal was famous for his incredibly low free throw percentage, 52.7% in his career. Wilt Chamberlain had the same problem. If we were to graph the distribution of the free throw percentage of the ten greatest NBA players of all time the graph would be

A. Gaussian
B. normal
C. negatively skewed
D. positively skewed

10. Consider a researcher attempting to assess the effectiveness of an over-the-counter analgesic from population data in which drug usage was a patient's choice. Data show that gender differences influence a patient's choice of a particular analgesic as well as their chances of experiencing relief from symptoms. In this scenario, gender is a(n)

A. independent variable
B. dependent variable
C. confounding variable
D. control variable

11. Agnes, a volunteer at the animal shelter, hypothesizes that visitors are more likely to adopt a pet when they visit the shelter accompanied by children. She tests her hypothesis by observing visitors for two weeks and recording data. What research method is she using?

A. anecdotal evidence
B. naturalistic observation
C. statistical survey
D. field experiment

12. Which of the following is an example of a random sampling method?

I. Arranging a list of volunteers in alphabetical order and selecting every 3rd volunteer
II. Using a computer to randomly assign 1/3 of a group of volunteers each to a separate experimental condition
III. Pulling the names of twenty volunteers out of a hat to serve as experimental subjects
IV. Dividing a population into smaller groups based on shared characteristics and choosing a sample from each group using a random number generator

A. III only
B. III and IV
C. I, II and IV
D. I, II, III and IV

13. To test the effects of a potential molecular targetted therapy on seizure frequency in pediatric epilepsy patients, the Watkins lab first randomly selected a sample of 100 patients and then divided them into a control group and experimental group. However, the original sample was more racially homogeneous than the general population. This may affect the results by introducing a

A. bias
B. confounding variable
C. nonsampling error
D. stereotype threat

14. An increase in shark attacks has been observed to coincide with an increase in ice cream sales. This corresponds to

A. stochastic coincidence
B. shark attacks increasing ice cream consumption by an unknown mechanism
C. positive correlation between shark attacks and ice cream sales
D. a statistically insignificant artefact

15. Which of the following is <u>not</u> a right or practice typically ensured for human research subjects through the ethical guidelines enforced by Institutional Review Boards?

A. informed consent
B. confidentiality
C. lack of deception
D. post-study debriefing

16. A study is conducted whether people react positively or negatively to a series of images. They use a left-hand clicker for positive, and a right-hand clicker for negative. The tendency for left-handed people to be more inclined to click left and vice-versa is a(n)

A. positive correlation
B. negative correlation
C. confounding variable
D. extraneous variable

17. A study was conducted at an elementary school to measure whether playing music in the cafeteria during lunch would positively affect afternoon math class assignment productivity. Music was played on Mondays and Tuesdays. On Thursdays and Fridays music was not played. Total number of assignment questions completed were recorded. In this study, the day of the week was

A. the independent variable
B. the dependent variable
C. a confounding variable
D. an extraneous variable

18. When the observed result obtained by statistical sampling is different than the result specified by the null hypothesis, what is the likelihood of obtaining at least as extreme a result assuming the null hypothesis were actually true?

A. *p*-value
B. significance level
C. confidence level
D. confidence interval

19. Bill's score on the psychology & sociology section of the MCAT was one standard deviation above the mean. What was his approximate percentile score on that section?

A. 57%
B. 75%
C. 85%
D. 95%

20. Many premedical students expressed the belief that the old MCAT (pre-2015) placed too great an emphasis on certain scientific topics, including synthetic bench-top organic chemistry, given current medical school curriculum. The popularity of this opinion decisively argues that the old exam had a problem in terms of its

A. face validity
B. construct validity
C. content validity
D. concurrent validity

21. The Thematic Apperception Test (TAT) is a type of psychological test in which an individual views ambiguous scenes of people, and is asked to describe various aspects of the scene. For example, the subject may be asked to describe what led up to the scene, the emotions of the characters, and what might happen afterwards. The TAT is an example of a(n)

A. projective test
B. self-report test
C. interest test
D. direct observation test

22. In order to measure the degree of anger manifested in a subject's response to an experimental treatment, a social-psychology investigator defines the measurement of anger in terms of how loudly the subject speaks compared to his normal tone. Measuring anger in terms of objective empirical data is an example of

A. multi-dimensional scaling
B. psychophysical coding
C. subjective coding
D. operationalization

23. A large scale study of high school students sought to describe the relationship between television viewing habits and academic success in high school. The study found that self-reported weekly average viewing hours and SAT scores had a correlation coefficient of –0.35. From this we can conclude that

A. greater television viewing has a weak tendency to lower SAT scores in high school
B. parental restrictions on television viewing for high school students correlates with higher SAT scores
C. greater television viewing hours are associated with lower SAT scores
D. it is possible for a teenager to watch a great deal of television during their high school years and still score a perfect SAT score

24. Random selection of individuals from two demographically similar communities allowed researchers to compare drinking habits with or without a public health campaign. Which of the following choices best describes the study?

A. quasi-experiment
B. naturalistic observation
C. survey
D. controlled observation

25. The internal validity of a longitudinal study investigating the effects of aging on various attitudes towards the criminal justice system will have inevitable problems due to which of the following confounding variables?

A. time-of-testing
B. gender of study participants
C. demographic shifts of study participants during the study
D. personality traits of study participants

26. A study with a significance level of 5% found conclusions with a *p*-level of 0.04 that a measure of self-esteem was positively correlated (+0.60) with how often people initiate conversations. In other words.

A. There would be a 4% chance of finding this correlation even if there were no relationship between the two variables.
B. The findings were not significant.
C. The conclusions have a 95% chance of of being correct.
D. 60% (+/– 5%) of outgoing people have positive self-esteem.

27. In a balanced placebo design

A. half of participants receive the active drug and half receive the placebo with neither being told which they are receiving
B. half of the participants informed they are receiving the placebo are actually receiving the active drug
C. neither the researchers nor the participants are aware which participant is receiving the placebo or the active drug
D. groups receive different information of possible side effects of the active drug in a controlled way in order to measure harmful nocebo effects

28. Googling the principle investigator, a research subject in a social psychology experiment learns that the researcher often employs deception with subjects. The participant then reveals what they found to other participants in the waiting area. This presents a challenge to the internal validity of the study and may lead to significant

A. experimenter-expectancy effects
B. demand characteristics
C. confirmation bias
D. Rosenthal effects

29. Cancerous tissue often shows up at bright spots on PET scans because cancerous tissue

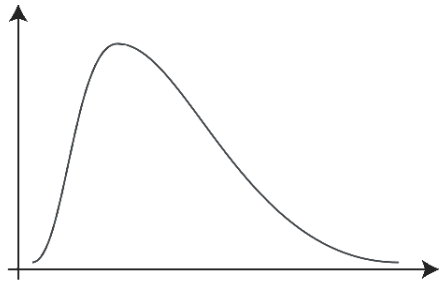
A. tends to have a higher radiographic density compared to normal tissue
B. accumulates the fluorescent antibody linked labels used in PET radiography
C. tends to have a higher metabolic rate than normal tissue
D. has a higher concentration of free radicals compared to normal tissue.

30. Which of the following is an advantage of MRI over CT for brain imaging?

I. More suited for soft tissue evaluation
II. MRI machines do not emit ionizing radiation
III. Higher resolution images
IV. CT requires contrast agents

A. I only
B. II only
C. I and II
D. I, II, III, and IV

31. A observational study was conducted in which data was collected. A graph of the data resembles the one shown below:



The data may be described as

A. positively skewed with a mean higher than the mode
B. positively skewed with a mean lower than the mode
C. negatively skewed with a mean higher than the mode
D. negatively skewed with a mean lower than the mode

32. In many states, school districts employ a screening based on standardized testing to govern invitations to participate in gifted enrichment programs. For example, one particular district invited elementary students possessing a measured IQ of at least 115. Which of the following is most likely to best describe the graph of the distribution of the IQ measurements of students invited to participate within this district?

A. a Gaussian distribution
B. negatively skewed
C. sigmoidal
D. positively skewed

33. Neurons do not have internal reserves of energy in the form of sugar and oxygen, so their firing causes a need for more energy to be brought in quickly. Through a process called the hemodynamic response, blood releases oxygen to them at a greater rate than to inactive neurons. This causes a change of the relative levels of oxyhemoglobin and deoxyhemoglobin. Detection of these relative levels serves as the basis for which of the following brain imaging methods?

A. PET
B. CT
C. MEG
D. fMRI

34. EEG is <u>not</u> a first-line method in medicine for the diagnosis of

A. brain tumor
B. sleep disorder
C. epiplepsy
D. coma

35. A survey given to two groups of native Californians show that for this particular population the mean estimate of the total annual number of murders to occur in Chicago exceeds their mean estimate of the number of murders to occur in the state of Illinois. These paradoxical results most likely occurred due to

A. base rate fallacy
B. the availability heuristic
C. illusory correlation
D. the Hawthorne effect

36. Researcher Jane Goodall pioneered the study of chimpanzees in their natural habitat. The major disadvantage for research findings in this type of study is

A. it is difficult to generalize the findings
B. they have low internal validity
C. correlation doesn't imply causation
D. experimenter expectancy effects

37 Analyses were performed to determine the relationship between MCAT composite scores and USMLE Step 1 from five graduating classes (2011–2015) at the University of Minnesota Medical School (N=1,065). The multiple linear regression analyses were both significant ($p<0.001$). The three MCAT component scores together explained 17.7% of the variance in Step 1 scores. What is the value of the correlation between composite MCAT scores and USMLE Step 1 scores?

A. +0.10
B. +0.18
C. +0.31
D. +0.42

38. Which of the following is a method for research design that minimizes the Hawthorne effect?

A. double blind procedure
B. covert observation
C. random selection
D. random assignment

39. Which of followng measures of central tendency is most sensitive to extreme outliers?

A. mean
B. mode
C. median
D. standard deviation

40. A researcher sets out to test the hypothesis that meditation practice over time increases scores on a set of specific measures of cognitive performance. She randomly selects fifty first year graduate students from the subject pool and randomly assigns half of them to an experimental group to receive weekly meditation training given by her and half to receive no training. She measures both groups' cognitive performance at the start of the study and again after a two month period. On the basis of her findings, she concludes that "meditation increases cognitive performance." What is wrong with this study?

I. Risk of experimenter-expectancy effect
II. Lack of an independent variable
III. No controls for placebo effect
IV. Risk of Rosenthal effect

A. III only
B. I and II
C. I, III and IV
D. I, II, III and IV

41. Which of the following functional brain scanning methods combine good spatial resolution with excellent temporal resolution?

A. EEG
B. PET
C. fMRI
D. MEG

42. A cumulative final exam in physics only included material from the final two weeks of the semester. The exam did not reflect the overall learning goals and objectives of the course. The exam has low

A. internal validity
B. face validity
C. criterion validity
D. content validity

43. A bathroom scale consistently measures ten pounds heavy. The measurements of this scale are

I. reliable
II. unreliable
III. valid
IV. not valid

A. I only
B. II only
C. I and III
D. I and IV

44. When the null hypothesis is true and you reject it, you make a type I error. When the null hypothesis is false and you fail to reject it, you make a type II error. Which of the following decreases the chance of making a type I error while increasing the chance of making a type II error?

A. lowering significance level
B. increasing sample size
C. double blind research design
D. random assignment

45. Which of the following is the most effective method to find conclusions within a group of similar studies least contaminated with publication bias?

A. restrict focus to the largest studies
B. use meta-analysis to derive a pooled estimate
C. select studies with a similar significance level
D. include journal articles where the null hypothesis was confirmed

46. Linear regression analysis was conducted on a large sample of randomly selected ratings data from ratemyprofessor.com. Analysis concluded that 'clarity' was significantly correlated with 'hotness'. This is a likely result of

A. the leniency effect
B. the error of central tendency
C. the halo effect
D. an illusory correlation

47. Randomly selected participants in a weight loss study were given a choice to participate in either a mediterranean style calorie restricted program or an Atkins style carbohydrate restricted plan. At the end of six months, the average weight loss of the two groups was compared. This study is a

A. quasi-experiment
B. case study
C. cohort study
D. case-control study

48. Melanie's cumulative MCAT score is in the 97th percentile. What is her approximate *z* score?

A. –3.0
B. +2.0
C. +2.5
D. +3.0

49. Double-blind procedures control for which of the following?

I. Experimenter expectancy
II. Demand characteristics
III. Placebo effect
IV. Hawthorne effect

A. III only
B. I and II
C. I, II and IV
D. I, II, III and IV

50. A study on social anxiety included a post-study questionaire in which participants indicated the extent to which they believe that they were aware of the researchers' hypotheses during the research. Significant correlations between the questionaire results and study data indicate that

A. experimenter expectancy may have impacted internal validity
B. an experimental observer shared knowledge with participants about the research hypotheses
C. demand characteristics may be related to research results
D. some participants tried to 'beat' the experiment to attain evaluation scores they view as socially desireable

Answer Key
Research Methods

1. **A—**fMRI, EEG and PET allow for visualization of neural changes that correspond to neural processes. CT provides detailed structural information.

2. **B—**The criterion validity is the extent to which a measure is related to an outcome. The other forms of validity reflected in the answer choices are related but not as directly given the phrasing of the question. The face validity is the extent to which a test is subjectively viewed as coverin the concept it purports to measure. Content validity refers to the extent to which a measure respresents all facets of a construct. Construct validity is the degree to which a test measures what it claims, or purports, to be measuring.

3. **B—**Random selection is a process of gathering a representative sample for a particular study. Random sampling is important for external validity, enabling generalization of findings to the whole population without actually testing the whole population.

4. **D—**Random assignment in combination with double blind experimental procedure is designed to improve the internal validity of an experiment, minimizing systematic error (or 'bias'). Reactivity is a phenomenon that occurs when individuals alter their performance or behavior due to the awareness that they are being observed. An experimenter effect can occur, for example, when the experimenters subtly communicate their expectations to the participants, who alter their behavior to conform to these expectations. Internal validity contrasts with external validity, the degree results may be generalized to other contexts. Sampling error, in which the experimental subjects chosen are not representative of the target population, presents problems for an experiment's external validity. Sampling error may result from selection bias.

5. **C—**Reactivity is a phenomenon that occurs when individuals alter their performance or behavior due to the awareness that they are being observed. The Pygmalion effect (or Rosenthal effect) is the phenomenon whereby higher expectations lead to an increase in performance. An experimenter effect occurs when the experimenters subtly communicate their expectations to the participants, who alter their behavior to conform to these expectations. Both experimenter effects and Pygmalion effects can be caused by bias and stereotyping. The Hawthorne effect is a type of reactivity in which individuals modify an aspect of their behavior in response to their awareness of being observed.

6. **B—**The effect of childhood trauma on frontal lobe activity is impossible to test experimentally because it is essentially impossible to create an experimental procedure involving manipulation of the independent variable, childhood trauma.

7. **C—**The standard deviation is the square root of the variance. The variance is found by taking the average of the squared differences between each value and the mean, ie. (49 + 1 + 1 + 49) divided by 4. In other words, the variance is 25. Taking the square root of the variance, the standard deviation is 5. A large standard deviation indicates that the data points can spread far from the mean and a small standard deviation indicates that they are clustered closely around the mean.

8. **C—**The median is the value separating the higher half of a data sample, a population, or a probability distribution, from the lower half. In simple terms, it may be thought of as the "middle" value of a data set. Putting our numbers in order: 2,5,6,7,8,8 we see there is no middle value. In such cases, take the average of the two middle values.

9. **C—**With outliers on the negative end of the distribution, the skew will be negative. Negative skew indicates that the tail on the left side of the probability density function is longer or fatter than the right side.

10. **C—**A confounding variable is a variable in a statistical model that correlates with both the dependent variable and an independent variable, in a way that "explains away" some or all of the correlation between these two variables.

11. **B—**Naturalistic observation involves two main differences that set it apart from other forms of data gathering. In the context of a naturalistic observation the environment is in no way being manipulated by the observer nor was it created by the observer.

12. **B—**Arranging a list of volunteers in alphabetical order and selecting every 3rd volunteer is NOT random sampling. In random sampling you would get a different result each sampling trial but in this case each trial would produce the same result. Using a computer to randomly assign 1/3 of a group of volunteers each to a separate experimental condition is NOT random sampling. This is random assignment. Sampling is a method to select experimental subjects from a population. Assignment arranges experimental subjects into groups to receive different experimental conditions. Pulling the names of twenty volunteers out of a hat to serve as experimental subjects IS random sampling. Dividing a population into smaller groups based on shared characteristics and choosing a sample from each group using a random number generator IS a type of random sampling. This type of sampling is known as stratified random sampling.

13. **A—**Sampling bias is a bias in which a sample is collected in such a way that some members of the intended population are less likely to be included than others. It results in a biased sample, a non-random sample of a population. This would not be considered to introduce a confounding variable. In the context of an experimental procedure, a confounding variable is anything that differs between the control and experimental group besides the independent variable.

14. **C—**Positive correlation means an increase in one variable is associated with an increase in another. However, correlation does not suggest causation. In this case, both increases are the result of an exceptionally warm summer.

15. **C—**Research studies may involve deception. Social psychology research often does. However, after research is completed, participants must be debriefed and any deceptions used should be revealed.

16. **D—**A confounding variable is a variable in a statistical model that correlates with both the dependent variable and an independent variable. The handedness of the subject is not a confounding variable. Although it correlates with the dependent variable it does not correlate with the independent variable. Such a variable which may effect results but which is not a confounding variable is termed an extraneous variable. An extraneous variable becomes a confounding variable when the extraneous variable changes systematically along with the independent variable that you are studying.

17. **C—**An extraneous variable becomes a confounding variable when the extraneous variable changes systematically along with the independent variable that you are studying. In this case the confounding variable (day of the week) changes systematically with the independent variable (whether or not music is played). This is a threat to the internal validity of the study, making it difficult to determine whether the dependent variable (in-class productivity) changes in response to the independent variable or the confound.

18. **A—***P*-values are the probability of obtaining an effect at least as extreme as the one in your sample data, assuming the truth of the null hypothesis. The significance level, is the probability of rejecting the null hypothesis when it is true. This distinction is hard to understand. The significance level is something you assign at the beginning of the study. Picture the graph of a distribution around the null hypothesis value. On the right and left are the tails of the graph, shade 2.5% on each end, together 5%. If you assign a significance level of 5%, then you are accepting the 5% chance that your data may land in either of those tails and you wind up in the position of publishing evidence that the null hypothesis is not true when it actually is. Bad luck! In any experiment based on statistical sampling you have to decide on some percentage chance that your data could rule out the null hypothesis just by the accident of producing a sample in one of those tails. The *p*-value is assigned after data collection and analysis. This is how you judge your data versus the significance level. The *p*-value is the chance that a trial will produce data at least as extreme as the experimental value assuming the null hypothesis to be true. You compare the *p*-value of your data to the significance level you assigned earlier to judge whether your experimental results are statistically significant. If the *p*-value is less than the significance level, the results are statistically significant.

19. **C—**The 68–95–99.7 rule is a shorthand used to remember the percentage of values that lie within a band around the mean in a normal distribution. 68.27%, 95.45% and 99.73% of the values lie within one, two and three standard deviations of the mean. In other words, approximately 70% of values like within one standard deviation of the mean. Therefore, 15% of values are above the first standard deviation.

20. **A—**Face validity refers to the transparency or relevance of a test as it appears to test participants.

21 **A—**A projective test is a personality test designed to let a person respond to ambiguous stimuli, presumably revealing hidden emotions and internal conflicts projected by the person into the test. This is sometimes contrasted with a so-called "objective test" or "self-report test" in which responses are analyzed according to a presumed universal standard (for example, a multiple choice exam), and are limited to the content of the test.

22. **D—**Operationalization is a key concept in psychology research, referring to a process of defining the measurement of a phenomenon that is not directly measurable, though its existence is indicated by other phenomena. Operationalization is thus the process of defining a fuzzy concept so as to make it clearly distinguishable, measurable, and understandable in terms of empirical observations.

23. **C—**A correlationship coefficient of –0.35 shows a weak inverse association between viewing hours and SAT scores. Regarding choice 'A', correlation does not imply causation. Regarding choice 'B', the variables relayed in the question-stem did not include mention of parental policies. Regarding choice 'D', an observational study based on inferential statistics can't be used to make a prescriptive claim regarding an individual case.

24. **A—**In a true experiment, subjects are randomly assigned to the treatment conditions (levels of the independent variable). The only differences in the groups would be due to chance. Quasi-experiments are sometimes called natural experiments because membership in the treatment level is determined by conditions beyond the control of the ex-

perimenter (subjects are already in the box). An experiment may seem to be a true experiment, but if the subjects have NOT been randomly assigned to the treatment condition, the experiment is a quasi-experiment. A common type of quasi-experiment is to compare pre- versus post- events or behavior.

25. A—A longitudinal study is a quasi-experimental research design that involves repeated observations of the same variables over long periods of time, often many decades. This study is designed to investigate the relationship between aging and attitudes towards the criminal justice. However, changes in such attitudes over time could have something to do with these people getting older, but it could instead be that the social and political climate changed over time. In other words, age is confounded with time-of-testing. While it would be possible to control for the other possible confounds in the study time-of-testing is an inevitable confound of longitudinal studies.

26. A—To understand the meaning of *p*-level, imagine the situation where the null hypothesis is correct. The null hypothesis proposes that there may be no correlation between the dependent and independent variable. Assuming the null hypothesis to be correct, what is the percent probability for the correlation observed in the experiment to have occured simply by random chance? That's the *p*-level. The significance level is different. It's a standard to judge *p*-level and judge significance ot the findings. The significance level is assigned by the researchers, typically by custom, either 5% or 1%, before the experiment. If the *p*-level comes in lower than the significance level, the results are significant.

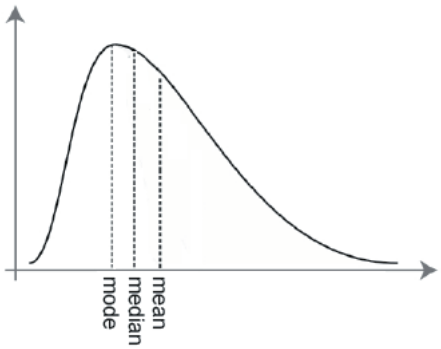
27. B—In a balanced placebo design, half of the participants are told they are receiving the active drug and half are told they are receiving the placebo - but only half of the participants in each group actually receive the drug or placebo as told, permitting independent and combined assessment of drug and placebo effects.

28. B—Demand characteristics refers to an experimental artifact where participants form an interpretation of the experiment's purpose and subconsciously change their behavior to fit that interpretation. The observer-expectancy effect (also called the experimenter-expectancy effect, expectancy bias, observer effect, or experimenter effect) is a form of reactivity in which a researcher's cognitive bias causes them to subconsciously influence the participants of an experiment. Confirmation bias can lead to the experimenter interpreting results incorrectly because of the tendency to look for information that conforms to their hypothesis, and overlook information that argues against it. The Pygmalion effect, or Rosenthal effect, is the phenomenon whereby higher expectations lead to an increase in performance.

29. C—Positron emission tomography (PET) is used to observe metabolic processes in the body. The system detects pairs of gamma rays emitted indirectly by a positron-emitting radionuclide (tracer), which is introduced into the body on a biologically active molecule. Most often, the biologically active molecule chosen for PET is fludeoxyglucose (FDG), an analogue of glucose. The concentrations of tracer imaged will indicate tissue metabolic activity as it corresponds to the regional glucose uptake. Use of this tracer to explore the possibility of cancer metastasis (i.e., spreading to other sites) is the most common type of PET scan in standard medical care (90% of current scans).

30. C—MRI is more suited for soft tissue investigation and it does not emit ionizing radiation. CT is higher resolution. especially in imaging bone structures. Contrast agents may be employed in both MRI and CT.

31. A—The data is right skewed (positively skewed). Positive skew indicates that the tail on the right side is longer or fatter than the left side. Compared to a normal distribution, which is symmetric, a greater number of outliers are on the right side of the graph.



32. D—Given that the sample will be derived from the portion of the normal distributtion of IQ scores for the general student population. There will be many more students in the 120 to 130 range than in the 140 to 150 range. In this case, the mean of the distribution will be to the right of the peak of the graph (the mode). The graph will be positively skewed.

33. D—Hemoglobin has different magnetic properties in its oxygenated and deoxygenated forms.This leads to magnetic signal variation which can be detected using an MRI scanner and is the basis for fMRI (functional magnetic resonance imaging).

34. A—Electroencephalography (EEG) is an electrophysiological monitoring method to record electrical activity of the brain. It is typically noninvasive, with the electrodes placed along the scalp, although invasive electrodes are sometimes used in specific applications. EEG measures voltage fluctuations resulting from ionic current within the neurons of the brain. EEG is most often used to diagnose epilepsy, which causes abnormalities in EEG readings. It is also used to diagnose sleep disorders, coma, encephalopathies, and brain death. The use of EEG for diagnosis of tumors, stroke and other focal brain disorders has been superseded by high-resolution anatomical imaging techniques such as magnetic resonance imaging (MRI) and computed tomography (CT).

35. B—A heuristic is a mental shortcut that helps us to streamline our thinking. Using the availability heuristic, we estimate the likelihood of an occurence based on the ease with which it comes to mind. People tend to heavily weigh their judgments toward more recent information, making new opinions biased toward that latest news. Additionally, the availability of consequences associated with an action is positively related to perceptions of the magnitude of the consequences of that action. In other words, the easier it is to recall the consequences of something the greater those consequences are often perceived to be.

36. B—The major advantage of naturalistic observation is high external validity: the extent to which findings can be generalized to real-world settings. The disadvantage is low internal validity. In naturalistic designs there is no control over manipulation of key variables so it is difficult to draw cause-and-effect inferences.

37. D—To determine what percentage of the variance of one variable is accounted for by variance in another variable, you square the value of the correlation. In this case, we are working backwards. We are given the percentage of how much the variance in Step 1 scores is accounted for by variance in MCAT scores. We need to take the square root of that value to find the value of the correlation.

38. B—The Hawthorne effect occurs when participants' knowledge that they're being studied affects their behavior.

39. A—The mean is the arithmetic average of all scores. The median is the middle score. The

mode is the most frequent score. Of these three measures of central tendency, the mean is the most sensitive to extreme outliers. A truncated mean involves the calculation of the mean after discarding given parts of a probability distribution or sample at the high and low end.

40. C—There is a risk of experimenter-expectancy and Rosenthal effect. There are also no controls for the placebo effect. The experimenter-expectancy effect is a form of reactivity in which a researcher's cognitive bias causes them to subconsciously influence the participants of an experiment. The Rosenthal effect is the phenomenon whereby higher expectations lead to an increase in performance. Lastly, she hasn't controlled for the placebo effect. The people receiving meditation training know they're receiving treatment, and the people in the control group know they're not. In psychological research of this type, a counselor can apply an attention placebo control condition in which the counselor provides attention but no formal therapy to subjects.

41. D—EEG has excellent temporal resolution but poor spatial resolution. PET and fMRI can only measure activity changes second by second. MEG, which detects electrical activity in the brain through measurement of tiny magnetic fields, combines good spatial resolution with excellent temporal resolution, measuring activity changes millisecond by millisecond.

42. D—Content validity reflects how much a measure represents every single element of a construct. An educational test with strong content validity will represent the subjects actually taught to students.

43. D—The scale provides consistent results. It is reliable. Validity refers to how well a test measures what it is supposed to measure. The scale gives consistently incorrect measurements. It does not provide valid measurements.

44. A—In lowering the significance level you are giving yourself a higher standard for the *p*-value of results to be considered significant. This decreases the chance of making a type I error, which would involve claiming a significant correlation when in fact the null hypothesis is true and the data is just an outlier distribution. However, lowering the significance level would increase the chance of making a type II error, in which the null hypothesis is affirmed when in fact the true situation is that there is a reproducible difference between control and experimental groups.

45. A—The bias against publishing studies in which the null hypothesis was confirmed is more of a danger with small studies than large studies. Larger studies have smaller *p*-value and a greater chance of publication even when confirming the null hypothesis. With smaller studies the chance of type I error is greater and publication is favored for those studies making the error versus other small studies confirming the null hypothesis.

46. C— The halo effect is a cognitive bias in which an observer's overall impression of a person, company, brand, or product influences the observer's feelings and thoughts about that entity's character or properties.

47. A— The defining feature of a quasi-experiment is the lack of random assignment. This quasi-experiment not only lacks random assignment but also a control group.

48. B—In statistics, the 68–95–99.7 rule is a shorthand used to remember the percentage of values that lie within a band around the mean in a normal distribution with a width of two, four and six standard deviations, respectively. In other words, the width of four

standard deviations (two above and two below the mean), will include 95% of the values, with 2.5% of values remaining above and 2.5% remaining below. In other words, a score of 97% is right on the border between the second and third standard deviations above the mean. *Z* scores measure the distance of a score from the mean in units of standard deviations.

49. D—In double-blind experiments, neither the participants nor the researchers know which participants belong to the control group, nor the test group. Performing an experiment in double-blind fashion can greatly lessen the power of preconceived notions or physical cues to distort the results. Double-blind procedures reduce the impact of demand characteristics, experimenter expectancy, placebo effect, and Hawthorne effect.

50. C—Demand characteristics refers to an experimental artifact where participants form an interpretation of the experiment's purpose and subconsciously change their behavior to fit that interpretation. If the post-study questionaire correlates with study data, it points to a potential problem with demand characteristics as a source of bias.

Learning

1. Pavlov presented the sound of a tuning fork as a stimulus and then gave the dog food. After a few repetitions, the dogs started to salivate in response to the sound of the tuning fork. At this stage of training, the sound of the tuning fork is a(n)

A. unconditioned stimulus
B. conditioned response
C. neutral stimulus
D. conditioned stimulus

2. To encourage her son to complete his homework on time, his mother tells him he won't be required to help with the after dinner dishes. This is an example of

A. negative reinforcement
B. positive reinforcement
C. shaping
D. negative punishment

3. To treat bedwetting in a child, a pad is placed at night that sounds an alarm when wet. After several weeks a full bladder wakes the child without the need for the alarm. This is an example of learning occurring through

A. positive punishment
B. negative reinforcement
C. classical conditioning
D. negative punishment

4. Rats in the first experimental group were allowed to roam a maze for several hours with absolutely no reinforcement. Then they learned to navigate the maze for a food reward. Compared to a second group of rats experiencing the maze for the first time, the rats in the first group were able to learn to navigate the maze for a food reward much more quickly. The difference between the two groups is an example of

A. positive reinforcement
B. latent learning
C. insight learning
D. backward conditioning

5. Which of the following is <u>not</u> an example of learning through operant conditioning?

A. a pidgeon turning in a circle to get food
B. a dog runs to the kitchen at the sound of a can-opener
C. a child learns the habit of lying to avoid punishment
D. after receiving an expensive speeding ticket a driver no longer habitually speeds

6 In a famous experiment, Garcia and Koelling showed that certain associations between conditioned and unconditioned stimulus were easier to form than others. For example, a loud noise could be more readilly associated with a shock and fear response than water could be similarly associated. The experiment illustrated

A. higher-order conditioning
B. discrimination
C. biological preparedness
D. backward conditioning

7. Which of the following statements are true regarding reinforcement schedules in operant conditioning?

I. Continuous reinforcement works best when teaching a new behavior
II. Variable schedules are more resistant to extinction
III. Ratio schedules tend to yield higher rates of response than interval schedules
IV. Variable schedules tend to yield more consistent rates of responding than fixed schedules

A. II only
B. I and II
C. I, III and IV
D. I, II, III and IV

8. Which of the following is an example of a primary reinforcer?

A. applause after a musical performance
B. a trip to McDonalds for a child's good behavior
C. a salary increase for introducing efficiencies in the work-place
D. a good grade on an essay assignment

9. The form of classical conditioning procedure in which the CS is presented a short time before the US is known as

A. backward conditioning
B. simultaneous conditioning
C. temporal conditioning
D. forward conditioning

10. Driving across Wyoming parents ask their children to be patient and they will stop in the next town for an ice cream treat. One hundred and fifty miles later, a sign showing a giant ice cream cone comes into view. In this context the sign of the ice cream cone is a(n)

A. conditioned stimulus
B. unconditioned stimulus
C. discriminant stimulus
D. secondary reinforcer

11. Ignoring a child's whining, a parent is attempting to

A. punish behavior
B. condition behavior
C. reinforce behavior
D. extinguish behavior

12. High levels of the neurotransmitter dopamine in the ventral tegmental area of the brains of dogs have been shown to decrease latent inhibition. A study would likely find that compared to a general population of dogs who have also been conditioned to salivate in response to the sound of a bell, such dogs

A. after this prior conditioning, could be more easily conditioned to respond with fear the sound of a bell than other dogs
B. would more easily experience renewal of the salivation response following extinction of the response
C. would be less likely to exhibit the same salivation response after hearing the sound of a tuning fork
D. would be less successful in higher-order conditioning

13. If a bell that has been conditioned to prompt salivation in a dog is paired with a flashing light, the light could begin to prompt salivation on its own. This is called

A. operant conditioning
B. delay conditioning
C. second order conditioning
D. forward conditioning

14. A dormitory resident was told by the R.A. that they are not permitted to use the common kitchen for one week because of a mess left in the kitchen. This is an example of

A. negative punishment
B. negative reinforcement
C. positive punishment
D. positive reinforcement

15. A rat in a Skinner box presses a lever then receives a food pellet. Which of the following has occurred with regard to the behavior of pressing the lever?

A. positive reinforcement
B. forward conditioning
C. backward conditioning
D. simultaneous conditioning

16. A dog is rewarded for coming to attention before the trainer. Then it's rewarded for standing on its hind legs. Then, the dog is rewarded for hopping. Finally, it's rewarded for hopping in a circle. What type of conditioning does this type of training exemplify?

A. shaping
B. contiguity approach
C. secondary reinforcement
D. chaining

17. Pigeons were taught to peck for food when shown a picture of a tree. They learned to peck even when presented with images of trees they had never seen before. These results suggest the pigeons had undergone

A. vicarious learning
B. insight learning
C. observational learning
D. abstract learning

18. Researchers in New Zealand presented crows with a problem to secure a food reward. The crows had to get a short stick by pulling up a string, use that stick to winkle out a long stick from a toolbox, and then use the long stick to extract food from a hole. Several of the captive crows were able to manage the task successfully, demonstrated that crows are capable of

A. abstract learning
B. insight learning
C. observational learning
D. positive reinforcement

19. Stomach virus symptoms arrived for Bill an hour after he finished a burrito. For years afterwards, Bill could not eat a burrito without feeling nauseous. What occurred is a kind of

A. positive reinforcement
B. negative reinforcement
C. classical conditioning
D. secondary reinforcement

20. In a classical conditioning experiment involving the sea slug aplysia in which the animal was taught to retract its gill under a light touch, Kandel demonstrated that synapses were strengthened between sensory and motor neurons. This is known as

A. synaptic pruning
B. neurogenesis
C. long-term potentiation
D. stimulus generalization

21. Which reinforcement schedule produces a behavioral response that is most resistant to extinction?

A. variable ratio
B. fixed ratio
C. continuous
D. variable interval

22. Escape conditioning and avoidance conditioning are both forms of

A. classical conditioning
B. punishment
C. negative reinforcement
D. secondary reinforcement

23. Ronaldo almost fell from a balcony as a child and has suffered from acrophobia (an irrational fear of heights) for his entire life. He consistently avoids even moderate high places. This behavior pattern is

A. the result of classical conditioning
B. conditioned by negative reinforcement
C. will likely go away after a period of time if he avoids high places
D. results from spontaneous recovery

24. A pet parrot has a habit of squawking and chattering at the sound of the doorbell. The doorbell is replaced with a door-knocker. After six months, the doorbell is returned to operation and it is discovered that the sound of the bell no longer elicits the response. However, one day the distinctive pattern of squawking and chattering reappears, but now in response to the sound of the cell-phone vibrating on the counter-top. Which of the following best describes what happened?

A. disinhibition
B. spontaneous recovery
C. stimulus generalization
D. second-order conditioning

25. First year medical school students often report difficulty retaining and recalling the large amounts of material they are expected to learn at the required pace. However, by the third or fourth month, most have developed a repertoire of learning strategies that make the process manageable. This process of 'learning to learn' is described as

A. insight learning
B. abstract learning
C. learning sets
D. modelling

26. Which of the following is an example of positive punishment?

A. loudly reprimanding a child in the grocery store
B. taking a television from a child's room for one week
C. encouraging homework by removing chores from the schedule
D. throwing a child into a pool to teach swimming the old-fashioned way

27. A parent is employing Bandura's techniques for observational learning to help their child become more courteous. As a first step they might

A. provide positive reinforcement to encourage polite conversational styles
B. demonstrate the impolite forms of behavior they are interested in reducing
C. point out positive aspects in the behavior of the child's favorite fictional character
D. help the child remember episodes from the past where they acted with courtesy

28. Which of the following is a common factor in all forms of observational learning?

A. imitation
B. reinforcement
C. latent learning
D. modelling

29. The behaviorist law of equipotentiality held that all forms of associative learning involve the same underlying mechanisms, suggests that any two stimuli can be associated in the brain, regardless of their nature. Which of the following observed phenomena poses the most direct challenge to the law of equipotentiality?

A. avoidance
B. instinctive predispositions
C. social learning
D. play behavior

30. Fear conditiong is thought to depend on an area of the brain called the

A. amygdalla
B. substantia nigra
C. hypothalamus
D. reticular formation

31. Which of the following brain structures is <u>not</u> a link in the mesolimbic pathway?

A. ventral tegmental area
B. medial forebrain bundle
C. nucleus accumbus
D. hippocampus

32. The most direct challenge to Skinnerian behaviorism is presented by. . .

I. Observational learning
II. Overjustification
III. Latent learning
IV. Spontaneous recovery

A. I only
B. II and III
C. I, II and III
D. I, II, III and IV

33. Which of the following is the best description of sensitization in the sea slug Aplysia withdrawal reflex?

A. A habituated sea slug is given a strong, noxious stimulus and responds to the next weak stimulus to the siphon by a rapid, enhanced withdrawal of the gill.
B. A sea slug is touched 10 – 15 times in rapid sequence, and the gill-withdrawal response decreases.
C. A weak touch to the siphon (CS) is followed immediately by a sharp blow to the tail or head (US), which evokes a marked gill-withdrawal response. After a series of such trials, the gill-withdrawal response to the CS alone is substantially enhanced.
D. A sharp blow to the tail or head (US) is followed immediately by a weak touch to the siphon (CS) which evokes a marked gill-withdrawal response. After a series of such trials, the gill-withdrawal response to the CS alone is substantially enhanced.

34. Habituation and sensitization are both forms of

A. long-term potentiation
B. classical conditioning
C. non-associative learning
D. negative feedback

35. Rats were placed in a T-maze with one arm coloured white and the other black. One group of rats had 30 mins to explore this maze with no food present, and the rats were not removed as soon as they had reached the end of an arm. Food was then placed in one of the two arms. According to Skinnerian behaviorism, how would rats in the exploratory group be expected to perform in this experiment compared to a group that had not previously explored the maze?

A. The exploratory group would learn to go down the rewarded arm faster than the group that had not previously explored the maze.
B. The exploratory group would not accept "escape" or "avoidance" in this situation though such behavior would likely be effective.
C. No significant differences in behavior would be observed between the experimental and control groups.
D. The exploratory group would be expected to perform less well on this task than the control group.

36. When a novel stimulus such as Pavlov's bell is presented for the very first time, the dog shows a reflexive orienting response -- perhaps a startle response -- to that stimulus. With successive applications of the stimulus, the magnitude of the orienting response will progressively diminish. If this process of diminishing the orienting response is carried out prior to pairing the bell with the unconditioned stimulus

A. Conditioning will occur, but the CR will be acquired at a slower rate than if there had been no prior work to diminish the orienting response.
B. Conditioning will occur with the CR being acquired at faster rate than if there had been no prior work to diminish the orienting response.
C. Conditioning will occur with the learning curve exhibiting a hyperbolic shape instead of the sigmoidal shape typical of trials with no prior work to diminish the orienting response.
D. Conditioning will not occur.

37. If neuron A synapses onto neuron B, and the two repeatedly fire together, A comes to release more neurotransmitter into the synapse with B then it did before conditioning. This is called

A. long-term potentiation
B. neuromodulation
C. neurotransmission
D. presynaptic facilitation

38. According to B.F. Skinner, a proper analysis of an individual's personality will focus on

I. Traits
II. Dispositions and motives
III. Discriminative stimuli in their environment
IV. Reinforcement history

A. I and II
B. I and IV
C. III and IV
D. I, II, III and IV

39. Which of the following statements is consistent with Thorndike's empirical law of effect?

A. Reinforcement contingency is determined by the probability of the event given a particular response.
B. The value attached to any potentially reinforcing event is subjective.
C. The individual's cognitive expectations influence the degree of reinforcement.
D. Choice manifests itself in behavior.

40. As opposed to the contiguity model, according to the contingency model of classical conditioning

A. conditioning depends on how well the US predicts the CS
B. the CS eventuallly substitutes for the US
C. timing is critical for behavioral conditioning
D. conditioning depends on a thought process

41. According to Bandura, which of the following represents the best example of learning through percept?

A. improving tennis form by watching a professional tennis match
B. gaining the understanding of the function of a hormone in a physiology lecture course
C. internalizing parental habits of argumentativeness
D. learning by direct consequence not to touch a hot stove

42. According to Bandura's cognitive theory of learning, students in MCAT preparatory courses who take a practice test prior to content review may impede learning if the experience lowers which of the following?

A. social reinforcement
B. response consequences
C. learned helplessness
D. self-efficacy expectations

43. Analyzed within the Skinnerian framework, what aspect of gambling behavior makes the behavioral pattern so difficult to stop for many people?

A. habituation
B. vicarious imitation of successful models
C. the pattern of reinforcement
D. learned helplessness

44. A real estate sales agent paid on commission is rewarded on what type of schedule?

A. fixed interval
B. fixed ratio
C. variable interval
D. variable ratio

45. In a break from earlier theories, Bandura disagreed with the idea that

A. imitative behavior patterns are acquired primarilly through reinforcement
B. reinforcement values are defined subjectively
C. reinforcement is necessary for learning to occur
D. curiosity is an intrinsic motivation

46. The family dog associates the sound of the doorbell with a visitor at the door and barks every time they hear a doorbell, even if the doorbell is coming from the TV. Eventually, they learn that only the real doorbell means a visitor is present and no longer bark at the TV. This is an example of

A. second-order conditioning
B. negative reinforcement
C. stimulus discrimination
D. response extinction

47. It takes longer for a familiar stimulus to become a CS than it does for a novel stimulus, when the stimulus is subsequently paired with an effective US. This is due to

A. the blocking effect
B. latent inhibition
C. conditioned suppression
D. conditioned inhibition

48. After maintaining a strict calorie restricted diet for a week, you give into temptation and eat three donuts in the breakroom at work. Next, you're out to lunch and eat a double cheeseburger and fries. When you get home, you say 'what the heck? why not?' and so you eat a whole pizza and drink two liters of soda. Within the framework of classical and operant conditioning you just experienced

A. a positive reinforcement loop
B. an extinction burst
C. reinstatement
D. learned helplessness

49. Habituation is different from extinction in that

A. Habituation usually refers to a reduction of response to an unconditioned stimulus or an innate behavior.
B. Extinction is a form of learning in which an organism decreases or ceases to respond to a stimulus after repeated presentations.
C. Many anxiety disorders represent a failure to become habituated to aversive stimuli.
D. Habituation is a form of respondent fatigue.

50. Change in behavior or potential behavior that occurs as a result of experience must be the product of

A. reinforcement
B. conditioning
C. adaptation
D. learning

Answer Key
Learning

1. **D—**The sound of the tuning fork is a conditioned stimulus (CS) and salivation is the conditioned response (CR). Before conditioning, the sound of the tuning fork had been a neutral stimulus.

2. **A—**Negative reinforcement is the strengthening of behavior by the removal or avoidance of some aversive event.

3. **C—**The second best answer is 'positive punishment' here. Positive punishment is the addition of an aversive consequence after an undesired behavior to decrease future responses. However, the behavioral response being conditioned is not whether to urinate or not but whether to wake up or not. The best choice would still be classical conditioning which involves pairing a neutral stimulus (full bladder) with an unconditioned stimulus (alarm) to transform the neutral stimulus into a conditioned stimulus.

4. **B—**Edward Toleman used a similar experiment to reach the conclusion that the rats must have learned the maze during the first half of the experiment. Learning occurred without any conditioning, representing a break with the strict behaviorism of Skinner. Toleman believed their improvement in maze-running time was due to latent learning. He suggested they made a cognitive map of the maze during the first half of the experiment and displayed this knowledge once they were rewarded.

5. **B—**The dog has learned to associate a neutral stimulus (the can-opener) with an unconditioned stimulus (food). The can-opener is now a conditioned stimulus.

6. **C—**Preparedness is a concept developed to explain why certain associations are learned more readily than others.

7. **D—**All four statements are correct. Each is an important aspect of reinforcement schedules in operant conditioning, and each makes sense if you think about it. 1) Continuous reinforcement works best when teaching a new behavior. When first learning a behavior, a clear association between the behavior and the reward assists learning. 2) Variable schedules are more resistant to extinction. Once a subject becomes accustomed to a fixed schedule a break in the pattern quickly leads to extinction. 3) Ratio schedules tend to yield higher rates of response than interval schedules. This makes intuitive sense. If a rat gets a treat every five times they press a bar, they will press the bar more often. 4) Variable schedules tend to yield more consistent rates of responding than fixed schedules. If the subject doesn't know when the next treat is coming, it makes sense to keep emitting the response to ensure it's been emitted enough times to earn the reward.

8. **B—**Primary reinforcers are biological in nature. Food, drink, and physical pleasure are primary reinforcers. However, most human reinforcers are secondary, or conditioned. Examples include money, praise, grades in schools, and applause.

9. **D—**In most classical conditioning procedures the CS is presented first. This is forward conditioning.

10. **C—**A discriminant stimulus is any stimulus that signals the presence of reinforcement.

11. **D—**In operant conditioning, extinction occurs when reinforcement is no longer delivered to a previously reinforced behavior. The behavior gradually declines and disappears.

12. **A—**Latent inhibition in classical conditioning refers to the observation that a familiar stimulus takes longer to acquire meaning (as a signal or conditioned stimulus) than a new stimulus. Dogs which are low in latent inhibition would more easily associate a new

conditioned response to a previously conditioned stimulus.

13. C—Second-order conditioning or higher-order conditioning is a form of learning in which a stimulus is first made consequential for an organism through an initial step of learning, and then that stimulus is used as a basis for learning about some new stimulus.

14. A—The difference between reinforcement and punishment is that reinforcement is designed to increase the probability of a behavior and punishment is designed to reduce the probability of a behavior. Negative punishment occurs when a behavior (response) is followed by the removal of a stimulus, such as taking away kitchen privileges following an undesired behavior, to decrease the probability of the behavior.

15. A—In operant conditioning positive reinforcement occurs when a behavior is either rewarding in itself or the behavior is followed by another stimulus that is rewarding, increasing the frequency of that behavior. If a rat in a Skinner box gets food when it presses a lever, its rate of pressing will go up.

16. D—Chaining involves reinforcing individual responses occurring in a sequence to form a complex behavior. In shaping successive approximations are reinforced, moving through increasingly accurate approximations of a response desired by a trainer.

17. D—Abstract learning is a type of learning that involves understanding concepts rather than simply learning to exhibit a behavior in order to secure a reward.

18. B—Insight learning is a type of learning or problem solving that happens suddenly through understanding the relationships of various parts of a problem rather than through trial and error.

19. C—Conditioned taste aversion occurs when an animal associates the taste of a certain food with symptoms caused by a toxic, spoiled, or poisonous substance or by an illness. Generally, taste aversion is developed after ingestion of food that causes nausea, sickness, or vomiting. It is an example of classical conditioning or Pavlovian conditioning. Conditioned taste aversions can develop through association of a neutral stimulus (eating the food) and the unconditioned stimulus (illness) so that eating the food acts as a conditioned stimulus in the future.

20. C—Long-term potentiation is a persistent strengthening of synapses based on recent patterns of activity.

21. A—A variable ratio reinforcement schedule is the type which is most resistant to extinction, although original conditioning takes longer. Variable interval schedules are more resistant to extinction than fixed interval and fixed ratio schedules but not as resistant as a variable ratio schedule.

22. C—Negative reinforcement increases the probability of a behavior because it causes a decrease in an aversive stimulus.

23. B—Very often a phobia is the result of classical conditioning. However, the avoidance behavior results from operant conditioning. Regarding the phobia itself, the original fear of almost falling down is associated with being on a high place, leading to a fear of heights. In other words, the CS (heights) associated with the aversive UCS (almost falling down) leads to the CR (fear). The avoidance behavior, on the other hand, is the result of negative reinforcement in which a behavior pattern is promoted because it reduces an aversive stimulus.

24. A—Within the realm of classical conditioning, disinhibition is a fundamental process of associative learning characterized by the re-

currence of a conditioned response after extinction trials have eliminated said response elicited by the presentation of a novel stimulus. Disinhibition is the temporary increase in strength of an extinguished response due to an unrelated stimulus effect. This differs from spontaneous recovery, which is the temporary increase in strength of a conditioned response, which is likely to occur during extinction after the passage of time.

25. C—A learning set is a readiness or predisposition to learn developed from previous learning experiences. In the laboratory context an organism learns to solve each successive problem in fewer trials. New problems can be solved more quickly when the learner is allowed to practice similar problems. Learning set is the psychological concept encompassing the idea of 'learning to learn'.

26. A—Positive punishment works by presenting a negative consequence after an undesired behavior is exhibited, making the behavior less likely to happen in the future. Choice 'B' is an example of negative punishment. Choices 'C' and 'D' are both examples of negative reinforcement.

27. C—Bandura's social cognitive learning theory states that there are four stages involved in observational learning. This question is addressing the first step: attention. Learning is influenced by characteristics of the model, such as how much one likes or identifies with the model, and by characteristics of the observer, such as the observer's expectations or level of emotional arousal. The last three stages are retention, imitation, and motivation.

28. D—Observational learning is learning that occurs through observing the behavior of others. It is a form of social learning which takes various forms, based on various processes. Observational learning differs from imitative learning in that it does not require a duplication of the behavior exhibited by the model. For example, the learner may observe an unwanted behavior and the subsequent consequences, and thus learn to refrain from that behavior. Specific types of observational learning without imitation include stimulus enhancement, in which individuals become interested in an object from watching others interact with it, and goal emulation, in which individuals are enticed by the end result of an observed behavior and attempt the same outcome but with a different method.

29. B—In his seminal work on taste aversion, Garcia demonstrated that the particular stimulus used in classical conditioning does matter. In his experiment, Garcia showed that rats could learn to avoid flavored water if it were associated with radiation induced nausea but he could not form an association between a buzzer and nausea. This is due to the instinctive predisposition to associate nausea with drinking something poisonous.

30. A—Fear conditioning is thought to depend upon the amygdala of the brain. Ablation or deactivating of the amygdala can prevent both the learning and expression of fear.

31. D—The mesolimbic pathway is a collection of dopaminergic neurons that project from the ventral tegmental area to the nucleus accumbens. It is one of the component pathways of the medial forebrain bundle, which is a set of neural pathways that mediate brain stimulation reward.

32. B—Latent learning and over-justification both directly challenge the tenets of Skinnerian behaviorism. Latent learning is a form of learning that is not immediately expressed in an overt response; it occurs without reinforcement of the behavior or conditioned associations. The overjustification effect occurs when an expected external incentive such as money or prizes actually decreases a person's motivation to perform a task. Regarding choice I, observational learning,

many kinds of observational learning, such as mobbing behavior by birds, are explicable in terms of behaviorism. Choice IV, negative reinforcement, is a core concept of Skinnerian behaviorism.

33. A—Sensitization is an increase in behavior due to exposure to a noxious stimulus.

34. C—Sensitization and habituation are both forms of non-associative learning, learning that does not require linking or associating stimuli together. It is considered the simplest type of learning.

35. D—In the actual experiment conducted by John Seward in 1949, one of the classics demonstrating latent learning, the exploratory group learned to go down the rewarded arm much faster than the group that had not previously explored the maze. At the time of the experiment, interest in latent learning arose largely because the phenomenon seemed to conflict with the widely held view that reinforcement was necessary for learning to occur. The question asks which results would be predicted by Skinnerian behaviorism, in other words, the point of view prevalent in the years prior to this experiment. Skinnerian behaviorism would predict the exploritory group to respond more slowly, actually, than the second group to reward conditioning because of the principle of immediacy. If you answered choice 'C', that's not too bad. This one is subtle. The principle of immediacy in reinforcement holds that an immediate consequence is more effective than a delayed consequence in reinforcement. The exploritory group experienced a period of behavior with no reward, so they should respond more slowly to conditioning. In other words, Skinnerian behaviorism would predict the exploritory group to learn more slowly. But this is not what happened! The exploritory group learned faster as a result of latent learning, learning requiring no reinforcement.

36. A—The CR will be acquired at a slower rate than if there had been no prior trials to diminish the orientation response. What occurred in those trials diminishing the orientation response is called habituation. Habituating a stimulus makes it more difficult to associate the stimulus with an unconditioned stimulus. This is known as latent inhibition.

37. D—Presynaptic facilitation and long-term potentiation are two different mechanisms for neural plasticity. In presynaptic facilitation, the change occurs to the presynaptic neuron. However, long-term potentiation is more prevalent of the two. Long-term potentiation represents an increase in the sensitivity of a postsynaptic neuron as a result of repeated stimulation by a presynaptic neuron.

38. C—In Skinnerian behaviorism, stimulus control is the controlling principle underlying human behavior. Traits and motives or other cognitive constructs are not relevant but are themselves the result of conditioning. What determine individual behaviors are reinforcement history and stimuli.

39. A—The Law of Effect states that responses that lead to reward are strengthened, occurring more quickly and reliably, while responses that are unrewarded, or even punished, are weakened. This is a tenet of strict behaviorism. The break from the behaviorist view of social learning, in which reinforcement contingencies were defined objectively, was apparent in the Rotter's Social Learning and Clinical Psychology, which appeared in 1954. Rotter defines reinforcement contingencies subjectively, in terms of an individuals cognitive expectations.

40. D—In the Pavlovian framework, classical conditioning occurs according to the contiguity model. The CS is eventually substituted for the US. The contingency model is a cognitive framework. The CS signals to the organism that the US will follow. There is a thought process.

41. B—There are two basic forms of learning according to Bandura, learning by response consequences and learning by modeling. Learning by response consequences is similar to operant behaviorism of Skinner but with a cognitive component. Modeling involves learning through vicarious experience as well as imitation. Modeling also covers learning through precept -- deliberate teaching and learning often involving linguistic communication.

42. D—According to Bandura, in addition to expectations regarding the relationship of a particular behavior and an outcome, a person must have the expectancy that he or she can reliably produce the behavior in question. This is the concept of self-efficacy. An example of self-efficacy in the phenomenon of learned helplessness. Research subjects who have been exposed to unsolvable puzzles are hindered in solving subsequent puzzles they would normally be able to solve.

43. C—Gambling and lottery games are examples of a reward based on a variable ratio schedule. In operant conditioning, a variable-ratio schedule is a schedule of reinforcement where a response is reinforced after an unpredictable number of responses. This schedule creates a steady, high rate of responding. Comparing different reinforcement schedules, behaviors that have been conditioned with a variable ratio reinforcement schedule are the most difficult to extinguish.

44. D—In a reinforcement schedule, variable versus fixed refers to the predictability of the reinforcer. Variable reinforcers reward on an unpredictable schedule. Whether it is a variable ratio or variable interval schedule refers to whether the number of behaviors or the amount of time is varied, respectively. The sales agent can't predict the number of behaviors between rewards. Thus it is a variable ratio schedule.

45. A—Although Bandura's Bobo doll experiment is mainly known for demonstrating how effectively aggressive behavior can be transmitted through observational learning and imitation, as a theoretical breakthrough it's importance was to show that imitation occurred without reinforcement.

46. C—Stimulus discrimination occurs when one stimulus ("CS1") elicits one CR and another stimulus ("CS2") elicits either another CR or no CR at all. This can be brought about by, for example, pairing CS1 with an effective US and presenting CS2 with no US.

47. B—Latent inhibition refers to the observation that a familiar stimulus takes longer to acquire meaning (as a signal or conditioned stimulus) than a new stimulus.

48. B—While extinction, when implemented consistently over time, results in the eventual decrease of the undesired behavior, in the short-term the subject might exhibit what is called an extinction burst. An extinction burst will often occur when the extinction procedure has just begun. This usually consists of a sudden and temporary increase in the response's frequency.

49. A—Habituation usually refers to a reduction in innate behaviours, rather than behaviours developed during conditioning. Extinction refers to reduction of behaviors developed during conditioning.

50. D—It's good to have a clear, scientific definition of learning to encompass everything from classical conditioning to cognitive models of learning.

Memory

1. The Atkinson–Shiffrin model of memory asserts that human memory has three separate components:

A. sensory, short-term, long-term
B. iconic, echoic, explicit
C. semantic, explicit, implicit
D. central executive, phonological loop, visio-spatial sketch-pad

2. Which of the following is <u>not</u> an example of semantic memory?

A. knowledge of the techniques for framing a house
B. remembering the first time you went to a rock concert
C. recalling the date of the Magna Carta
D. all are examples of semantic memory

3. Tenesha's tennis coach asked her to call six fellow players to remind them of a change in the location of a match. Feeling confident that she would not forget any on the list, she did not write it down. Which of the players on the list are most likely to be forgotten?

A. the first two names on the list
B. the last two names on the list
C. the two names in the middle
D. the first and the last names on the list

4. People with extensive, bilateral hippocampal damage may experience

A. anterograde amnesia
B. retrograde amnesia
C. dissociative amnesia
D. source amnesia

5. Iconic memory and echoic memory are both types of

A. short-term memory
B. episodic memory
C. explicit memory
D. sensory memory

6. A study demonstrated that taking an exam in the same classroom in which the material was learned positively correlates with performance on the exam. Which of the following best describes this phenomenon?

A. cue regularity
B. spreading activation
C. state-dependent memory
D. encoding specificity

7. A memory researcher presented a group of subjects with a series of placards upon each of which was printed a word. The researcher asked different subgroups a different question about each word. After presentation, memory recall was tested. For the word '*dalmation*,' which of the following questions asked at the time of presentation would correlate to the best recall among subjects?

A. Is the word printed in italics?
B. How many letters are in the word?
C. Could you encounter this in a street?
D. Does the word rhyme with orange?

8. In George Sperling's partial report experiment observers were presented with a tachistoscopic visual stimulus for a brief period of time (50 ms) consisting of either a 3x3 or 3x4 array of alphanumeric characters such as:

P Y F G
V J S A
D H B U

A cue followed the offset of the stimulus and directed the subject to recall a specific line of letters from the initial display. The partial report condition required participants to identify a subset of the characters from the visual display using cued recall. Immediately after stimulus offset, participants could recall most letters (9 out of 12 letters).

This experiment is designed to test the capacity of which memory register?

A. sensory memory
B. echoic memory
C. short-term memory
D. iconic memory

9. Reciting poetry while riding a bicycle are two tasks that can be performed just as well separately as simultaneously. However, reciting poetry while writing an essay is much more difficult. Which statement below best reflects the implications of this distinction for the theoretical modeling of working memory?

A. Reciting poetry primarilly involves the left frontal lobe. Riding a bicycle involves the dorsal precentral gyrus.
B. There are at least two domain specific subsystems within working memory.
C. Stimuli relating to reciting poetry are processed in echoic memory while stimuli related to riding a bicycle are processed in iconic memory.
D. The central executive acts as supervisory system and controls the flow of information to and from its slave systems.

10. Rats with dorsal hippocampal, dorsomedial thalamic, and operated control lesions were administered a delayed alternation (DA) task in which recall was assessed over intervals ranging between 0 and 80 s, and a passive avoidance (PA) task, involving training-test delays of between 1 h and 21 days. On both tasks, hippocampal groups performed normally at relatively short intervals, but showed significant memory loss at longer intervals. Thalamic groups were generally impaired on the DA task, but performed as well as operated control groups at all intervals in the PA task. The data also indicated an exaggerated susceptibility to interference in the hippocampal groups and a loss of episodic and reference memory following hippocampal or thalamic lesions. Which of the following is reasonable to conclude from this experiment?

A. Previously learned information has a greater than normal negative influence on the recall of newly learned information following thalamic lesions.
B. Memory loss following thalamic damage is related to a deficit in working memory.
C. Hippocampal amnesia results from impairment of procedural memory.
D. Both hippocampal and thalamic groups displayed symptoms of anterograde amnesia.

11. Baddeley and Hitch demonstrated that a single module could not account for all kinds of temporary memory. Their thinking led to an influential model in which verbal-phonological and visual-spatial representations were held separately, and were managed and manipulated with the help of attention-related processes, termed the

A. working register
B. episodic buffer
C. central executive
D. rehearsal loop

12. As part of a study investigating the affect of pro-active interference on short-term memory capacity, a subject was given a seven digit number as part of a delayed recall trial. However, coincidentally, the number differed from the subject's own phone number by only two digits. The results from this particular trial will likely be confounded by contamination from

A. cross-interference
B. long-term memory
C. chunking
D. rehearsal

13. Christopher Darwin carried out an auditory experiment that was analogous to Sperling's method of partial report. Which of the following was among the experimental findings?

A. Echoic memory has a longer decay period than iconic memory.
B. Recall of auditory stimuli is more susceptible to pro-active interference than visual stimuli.
C. Deeper levels of analysis of auditory stimuli produce more elaborate, longer-lasting, and stronger memory traces than shallow levels of analysis.
D. The central executive governing short-term memory process is general across domains.

14. Researchers found that recognition of earlier portions of a list, but not the last few items, activated areas within the hippocampal system that is generally associated with long-term memory retrieval. Recall of earlier portions of a list is severely impaired in Korsakoff's amnesia while memory for the last few list items is spared. This is because:

A. A register for short-term memory storage exists that is separate from long-term memory.
B. Hippocampal activity underlies the recency effect.
C. The recency effect reflects a short amount of time between presentation and recall of the last few items.
D. The recency effect reflects the absence of interference between presentation and recall of the last few items.

15. Individuals scoring high on storage-and-processing tests of working memory notice their names in a channel to be ignored in dichotic listening

A. less often than low-span individuals
B. more often than low-span individuals
C. with the same frequency as low-span individuals
D. with a frequency depending on the phonological characteristics of the cue

16. Jeremy is trying to memorize dialogue from a play from an audio recording, but a particular section is garbled. He is experiencing a problem with which memory process?

A. chunking
B. storage
C. encoding
D. rehearsal

17. Which of the following is not a method of elaborative encoding?

A. method of loci
B. maintenance rehearsal
C. peg word method
D. link system

18. Which of the following components of memory stores a close replica of a visual stimulus?

A. visual store
B. visuospatial sketchpad
C. iconic memory
D. VSTM

19. The shape of the forgetting curve is

A. hyperbolic
B. exponential
C. sigmoidal
D. linear

20. A metallurgical engineer, Dion, moved to England from the United States to take a job as a supervisor of a metal fabrication facility. He had a difficult time for the first few months adjusting to saying 'aluminium' instead of the North American coinage, 'aluminum'. After six months Dion seemed to get the hang of it. Four years later, after moving back to the United States, he found he now had difficulty saying 'aluminum'! Dion's present difficulty saying 'aluminum' is caused by

A. retroactive interference
B. proactive interference
C. output interference
D. cue-dependent forgetting

21. The reorganization process in which memories from the hippocampal region are moved to the neo-cortex is known as

A. late phase long-term potentiation
B. synaptic consolidation
C. trace activation
D. systems consolidation

22. A researcher asked experimental subjects to commit a series of numbers to memory, and measured how long it took them to memorize them all. One week later, after the original list was forgotten, she measured how long it took to relearn the list. She found that the subjects were quicker the second time. This exemplifies the concept of

A. reconsolidation
B. encoding specificity
C. savings
D. context dependent memory

23. Which of the following demonstrates recall from declarative memory but not from semantic memory?

A. relating the ground rule double rule to others while watching a baseball game
B. describing an experience of surviving an earthquake
C. reciting twenty digits of the number pi
D. declarative and semantic memory are synonyms

24. A study presented participants with information that was unfamiliar to their cultural backgrounds and expectations and then monitored how they recalled these different items of information. The study demonstrated that the cultural backgrounds of the participants did affect how they recalled the information over time. What were they using to provide a framework for understanding the material?

A. confirmation bias
B. reconsolidation
C. prejudice
D. schemata

25. Every time Miriam hears a particular song she remembers riding in the back-seat of the car singing along with her brother. This then conjures up memories of the time when her family had lived in Hawaii and she thinks about Waikiki and hiking up Diamond Head. This demonstrates which concept?

A. spreading activation
B. state-dependent memory
C. recognition memory
D. long-term potentiation

26. Subir got a new phone number six months ago. He is not happy because he keeps writing down his old phone number when filling out documents. His problem demonstrates

A. proactive interference
B. retroactive interference
C. blocking
D. latent inhibition

27. Jonah told a joke to his friends. He thought he had just made the joke up. In fact, he had heard the joke two months earlier on a televised comedy special. This exemplifies:

A. source amnesia
B. source confusion
C. cryptomnesia
D. egocentric bias

28. A patient could remember things like his name, his home town, and the date of his anniversary. However, he could not form any new lasting memories. Among which of the following is the most likely site of a lesion?

A. bilateral medial temporal lobe
B. hypothalamus
C. precentral gyrus
D. corpus callosum

29. Which of the following best describes the role of the amygdala in the formation of declarative long-term memories?

A. providing cognitive control over memory storage processes
B. modulation of memory consolidation
C. fear conditioning
D. neuronal replay of spatio-temporal sequences in concert with the neocortex

30. An episodic memory associated with a much higher than normal amygdala activation during encoding is a good candidate to become a(n)

A. autobiographical memoy
B. flashbulb memory
C. repressed memory
D. explicit memory

31. Suppose experimental subjects were given the following surnames in a randomly ordered list to memorize and one week later presented with a long list of surnames spoken aloud. During listening, which of the following names is it reasonable to suspect would be most easily recalled as having been on the original list?

Wright	von Restorff
Sanderson	Jordanson
Davison	Murphy
Miller	Barton

A. Sanders
B. Murphy
C. Barton
D. von Restorff

32. You and your friend witness an argument after school. Later you talk about the "huge fight" that occurred and you both unknowingly distort the narrative with exaggerated fabrications. Now you can recall specific details of a huge fight. Which of the following best characterizes the dynamic underlying these incorrect recollections?

A. the misinformation effect
B. cryptomnesia
C. suggestibility
D. fabricated memory

33. As Dylan gets into his car he repeats a list of the half dozen items he needs to pick up at the store. He is keeping the list in his

A. echoic memory
B. episodic memory
C. long-term memory
D. short-term memory

34. Which of the following statements directly distinguishes Baddeley's model as as a model for *working* memory and not merely a model for *short-term* memory?

I. The visuo-spatial sketchpad functions alongside the phonological loop without either affecting the efficacy of the other.
II. The central executive can be thought of as a supervisory system that controls cognitive processes and intervenes when they go astray.
III. The phonological loop consists of a short-term phonological store and an articulatory rehearsal component.
IV. Forgetting from working memory occurs through interference by new memory items not spontaneous decay.

A. II only
B. I and II
C. I, II, and III
D. I, II, III and IV

35. Mary has an excellent memory of everything that occurred up until an automobile accident at age 47. Since the accident she has been unable to form new memories. Mary suffers from

A. anterograde amnesia
B. retrograde amnesia
C. lacunar amnesia
D. source amnesia

36. Bill delayed reviewing kidney function until the day before the MCAT. In order to master this material he wound up pulling an all-nighter. This is known as

A. priming
B. elaborative rehearsal
C. massed practice
D. distributed practice

37. Which of the following best describes the mechanism by which an implicit long-term memory could affect conscious thought process?

A. recognition
B. recall
C. conditioning
D. priming

38. People suffering from Korsakoff's syndrome are likely to experience the most difficulty with forming new _____ memories.

A. working
B. episodic
C. declarative
D. semantic

39. In the cognitivist reconstructive theory of memory recall which of the following influences the act of remembering?

I. Perception
II. Imagination
III. Semantic Memory
IV. Beliefs

A. I only
B. I and III
C. I, III, and IV
D. I, II, III and IV

40. At which stage of memory process does interference appear to have it's greatest affect on forgetfulness?

A. encoding
B. storage
C. consolidation
D. retrieval

41. 150 participants were shown a film of a traffic accident then filled out a questionnaire concerning the video. The participants were split into three equal groups: Group A participants were asked "About how fast were the cars going when they hit each other?" Group B participants were asked "About how fast were the cars going when they smashed each other?" Group C participants, the control group, were not asked this question. A week later, all were asked whether of not there had been any broken glass in the video. A statistically significant number of participants in group B answered that they remembered seeing broken glass in the video, though there was none. Which phenomenon best describes the causal basis for the difference among groups in their responses?

A. retroactive interference
B. confabulation
C. priming
D. suggestibility

42. Given a list or series of words or numbers, studies have shown that we can recall the first and last numbers more easily than the middle numbers. This is called the

A. primacy effect
B. recency effect
C. serial position effect
D. spacing effect

43. Primacy effect is impaired for immediate and delayed recall in dementia of the Alzheimer type. By contrast, immediate recall, recency effect and possibly also long-term recency effect are preserved. To which of the following do these results correspond?

A. inactive central executive
B. decay of echoic memory
C. impaired long-term memory consolidation
D. retroactive interference

44. Remembering prom night when you hear an old song on the radio is an example of

A. spreading activation
B. recognition
C. encoding specificity
D. cued recall

45. Which of the following memory concepts best explains the effectiveness of the method of loci as a mnemonic device?

I. Spatial memory
II. Levels of processing
III. Elaborative rehearsal
IV. Visual encoding

A. IV only
B. I and IV
C. I, III, and IV
D. I, II, III and IV

46. A study used fMRI to measure the brain activity of subjects while they made semantic decisions. The participants then took a memory test after a short period of time. When the subjects showed high confidence and correctly retained the information, the fMRI measured increased activity in the

A. left prefrontal cortex
B. posterior parietal cortex
C. striate cortex
D. lateral postcentral gyrus

47. The illusory truth effect is the tendency to believe information to be correct after repeated exposure. The effect occurs even in the absence of conscious recollection. The illusory truth effect can best be distinguished as a process of

A. semantic processing
B. subliminal persuasion
C. spreading activation
D. implicit memory

48. An experiment was conducted in which two groups of people, one composed of amnesic patients with heavily impaired long-term memory, and the other composed by healthy subjects, were asked several times to solve a complex problem-solving game requiring a certain number of steps to complete. The first group showed the same improvements over time as the second group, even if some participants claimed that they didn't even remember having seen the puzzle before. These findings strongly suggest that

A. encoding specificity depends on implicit memory functions
B. working memory is sufficient to complete many cognitive tasks
C. central executive interactions governing the episodic buffer do not require long-term memory consolidation
D. procedural memory is independent from declarative memory

49. Participants in an experiment were provided a list of names in the first session. In the second session, participants were given one of the two kinds of tasks. In the 'exclusion task', participants were told that none of the names they read in session one belonged to famous people and they should respond "no" when judging fame in the second session. In the 'inclusion task' condition, participants were informed that the names from the first session were famous but obscure and they should respond "yes" for famous if they remember a name from the first session or otherwise know it to be famous. The probability of saying "yes" in the inclusion condition

A. equals the probability of a name being remembered consciously
B. must be less than the probability of saying "yes" in the exclusion condition
C. equals the probability of a name being remembered either consciously or unconsciously
D. is directly proportional to the strength of a subject's declarative memory

50. When Olivia came home from work, the smell of oven cleaner was strong in the house, but after several minutes in the home, Olivia found she could barely detect the smell. Olivia's habituation to the smell of the oven cleaner occurs through

A. sensitization
B. perceptual learning
C. implicit memory
D. odor identification

Answer Key
Memory

1. **A—**The model asserts that human memory has three separate components: A sensory register, where sensory information enters memory. A short-term store, also called working memory or short-term memory, which receives and holds input from both the sensory register and the long-term store. A long-term store, where information which has been rehearsed in the short-term store is held indefinitely.

2. **B—**Long-term memory is divided into implicit and explicit memory. Explicit memory is divided into semantic memory and episodic memory. Semantic memory involves facts and general knowledge. Episodic memory involves personally experienced events.

3. **C—**The *primacy effect* will help her remember the first two names (probably from greater rehearsal), and the *recency effect* will help her remember the last two which are more likely to still be in working memory. She's more likely to forget the names in the middle.

4. **A—**Anterograde amnesia is a loss of the ability to create new memories after the event that caused the amnesia, leading to a partial or complete inability to recall the recent past, while long-term memories from before the event remain intact.

5. **D—**Sensory information is stored in sensory memory just long enough to be transferred to short-term memory. Humans have five traditional senses: sight, The visual sensory store is known as iconic memory. Auditory information is stored in echoic memory.

6. **D—**The encoding specificity principle provides a framework for understanding how the conditions present while encoding information relate to memory and recall of that information.Recall is most effective when the conditions at the time of encoding match the conditions at the time of retrieval. These conditions may refer to the context in which the information was encoded, the physical location or surroundings, as well as the mental or physical state of the individual at the time of encoding.

7. **C—**The levels-of-processing effect describes memory recall of stimuli as a function of the depth of mental processing. Deeper levels of analysis produce more elaborate, longer-lasting, and stronger memory traces than shallow levels of analysis. Depth of processing falls on a shallow to deep continuum. Shallow processing (e.g., processing based on phonemic and orthographic components) leads to a fragile memory trace that is susceptible to rapid decay. Conversely, deep processing (e.g., semantic processing) results in a more durable memory trace.

8. **D—**Iconic memory is the visual sensory register. It is a fast-decaying (< 1 sec) store of visual information.

9. **B—**The implications of experimental findings with dual-task paradigms are crucial to understanding Baddeley's model of working memory, a three part working memory model (with the visio-spatial sketchpad and phonological loop under control of the central executive) as an alternative to the short-term store in Atkinson & Shiffrin's memory model. This model is later expanded upon by Baddeley and other co-workers to add a fourth component, episodic memory, and has become the dominant view in the field of working memory.

10. **B—**Thalamic groups were generally impaired on the DA task, in which recall was assessed over intervals ranging between 0 and 80 s. Working memory, a core executive function, is a cognitive system with a limited capacity

that is responsible for the transient holding, processing, and manipulation of information.

11. C—The central executive is a flexible system responsible for the control and regulation of cognitive processes. The functions of the central executive include binding information from a number of sources into coherent episodes, coordination of the slave systems, shifting between tasks or retrieval strategies, selective attention and inhibition. The central executive can be thought of as a supervisory system that controls cognitive processes and intervenes when they go astray.

12. B—Working memory can access both the short-term register and the long-term register. Contamination from long-term memory is a problem for short-term recall experiments. For example, short-term recall of IRSFBI-CIA is much easier because it combines the anagrams of prominent federal agencies.

13. A—Sperling's method of partial report demonstrated that an iconic memory (visual sensory memory) decays in less than 1000ms. An auditory analog to this experiment would have similar experimental goals for echoic memory. Choice 'A' is the only one addressing the purpose of such an experiment. Echoic memory traces have a longer decay period, approximately 4s, which makes sense given the requirements for verbal information to be presented to working memory in semantically meaningful units.

14. A—The lack of hippocampal activity and the observation of the recency effect in Korsakoff's syndrome point to there being a register for short-term memory storage which is separate from long-term memory.

15. A—Working memory tasks correlate with intelligence and aptitude measures much more highly than do simple, traditional, short-term memory tasks such as serial recall. Individuals scoring high on tests of working memory notice extraneous stimuli *less* often than other groups. They are apparently better able to make mental performance less vulnerable to distraction, but this comes at the expense of being a bit oblivious to things going on around them.

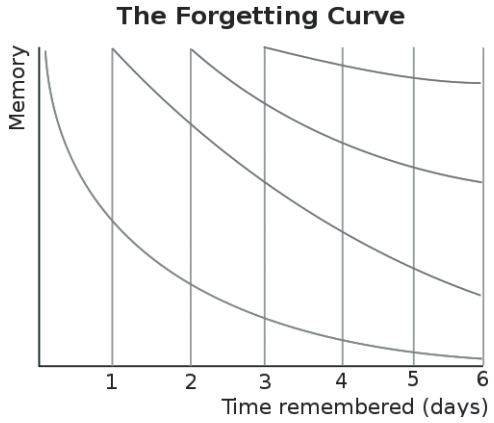
16. C—Memory has the ability to encode, store and recall information. Encoding allows the perceived item of use or interest to be converted into a construct that can be stored within the brain.

17. B—Elaborative encoding involves using a mnemonic device technique where connections can be made visually, spatially, semantically or acoustically. Multiple techniques, such as the method of loci, the link system, the peg word method, PAO (person, action, object), etc., are used to store information in long-term memory and make it easier to recall this information in the future. Maintenance rehearsal is a type of memory rehearsal that is useful in maintaining information in short term memory or working memory. However, it is not an effective way of having information processed and transferred into long term memory. This type of rehearsal usually involves repeating information without thinking about its meaning or connecting it to other information. This is why the information is not usually transferred to long term memory.

18. C—Iconic memory is the visual sensory memory register pertaining to the visual domain and a fast-decaying store of visual information. It is a component of the visual memory system which also includes visual short-term memory (VSTM) and long-term memory (LTM). The visuospatial sketchpad is a VSTM subcomponent within the theoretical model of working memory proposed by Alan Baddeley.

19. B— Forgetting or disremembering is the apparent loss or modification of information already encoded and stored in an individual's long term memory. As first described in

the 19th century by Ebbinghaus, fogetting is a process characterized by exponential decay. The sharpest decline occurs in the first twenty minutes and the decay is significant through the first hour. The curve levels off after about one day.



20. A—Retroactive interference is when new memories interfere with retrieval of older memories. Proactive interference occurs when old memories interfere with the retrieval of new memories.

21. D—Memory consolidation is a category of processes that stabilize a memory trace after its initial acquisition. Consolidation is distinguished into two specific processes, synaptic consolidation, which is synonymous with late-phase long-term potentiation and occurs within the first few hours after learning, and systems consolidation, where hippocampus-dependent memories become independent of the hippocampus over a period of weeks to years.

22. C—Relearning forgotten material is faster than learning the first time. This phenomenon was first described by Ebbinghaus, who termed the pheonomenon 'savings'.

23. B—Relating an event you personally witnessed is an example of episodic memory, which, like semantic memory, is a type of declarative memory. Declarative memory is the conscious, intentional recollection of factual information, previous experiences and concepts. Episodic memory stores specific personal experiences. Semantic memory stores factual information.

24. D—A schema (plural schemata or schemas) describes a pattern of thought or behavior that organizes categories of information and the relationships among them. It can also be described as a mental structure of preconceived ideas, a framework representing some aspect of the world, or a system of organizing and perceiving new information.

25. A—Spreading activation is how the brain moves through an entire network of ideas to retrieve specific information. The spreading activation theory presents the array of concepts within our memory as cognitive units, each consisting of a node and its associated elements or characteristics, all connected together by edges. A spreading activation network can be represented schematically, in a sort of web diagram with shorter lines between two nodes meaning the ideas are more closely related and will typically be associated more quickly to the original concept.

26. A—Proactive interference is the forgetting due to interference from the traces of events or learning that occurred prior to the materials to be remembered. Retroactive interference occurs when newly learned information interferes with and impedes the recall of previously learned information.

27. C—Cryptomnesia occurs when a forgotten memory returns without it being recognized as such by the subject, who believes it is something new and original.

28. A—To a large degree, anterograde amnesia remains a mysterious ailment because the precise mechanism of storing memories is not yet well understood, although it is known that the regions involved are certain sites in the medial temporal cortex, especially in the hippocampus and nearby subcortical regions.

29. B—The amygdala is involved in the modulation of memory consolidation, mediating the effects of emotional arousal on the strength of the memory for the event. It also plays a role in fear conditioning, choice 'C', but that involves the formation of implicit, not explicit (declarative) long-term memories. Choice 'D' is a hippocampal function, and choice 'A' is a frontal cortex function.

30. B—A flashbulb memory is a highly detailed, exceptionally vivid 'snapshot' of the moment and circumstances in which a piece of surprising and consequential (or emotionally arousing) news was heard. The role of the amygdala in memory is modulation of consolidation in long-term storage associated with increased arousal induced by the emotional event.

31. D—The von Restorff effect, also known as the "isolation effect", predicts that when multiple homogenous stimuli are presented, the stimulus that differs from the rest is more likely to be remembered.

32. C—Suggestibility is the process of memory distortion as the result of deliberate or inadvertent suggestion. Suggestibility can lead to fabricated memory.

33. D—Short-term memory is the capacity for holding a small amount of information in mind in an active, readily available state for a short period of time.

34. B—Regarding choice 'I", Baddeley re-defined the theory of short-term memory as a working memory to explain this phenomenon, that the visuo-spatial sketchpad does not inhibit the short term processes of the phonological loop. This is in contrast to the original theory of short-term memory, where it was understood that a person only has one store of immediate information processing which could only hold a total of 7 items plus or minus two items to be stored in a very short period of time, sometimes a matter of seconds. Regarding choice 'II", as a general principle, working memory is a theoretical framework referring to structures and processes used for temporarily storing and manipulating information. As such, working memory might also be referred to as working attention. Working memory and attention together play a major role in the processes of thinking. Short-term memory in general refers, in a theory-neutral manner, to the short-term storage of information, and it does not entail the manipulation or organization of material held in memory. In Baddeley's theoory, the concept of working attention is embodied in the central executive. Choice 'III' describes standard short-term memory processes of encoding and rehearsal. Choice 'IV' reflects a subject of much current debate. In Baddeley's original theory, forgetting was conceptualized as occuring through decay not through replacement or interference.

35. A—Anterograde amnesia is the inability to create new memories due to brain damage, while long-term memories from before the event remain intact. Retrograde amnesia is inability to recall memories before onset of amnesia.

36. C—Massed practice, consists of a few, longer training sessions. It is generally a less effective method of learning than distributed practice, where practice is broken up into a number of short sessions – over a longer period of time. Humans and animals learn items in a list more effectively when they are studied in several sessions spread out over a long period of time, rather than studied repeatedly in a short period of time, a phenomenon called the spacing effect.

37. D—Priming is an implicit memory effect in which exposure to one stimulus (i.e., perceptual pattern) influences the response to another stimulus.

38. B—Chronic alcoholism often leads to a thiamine (vitamin B1) deficiency in the brain, causing Korsakoff's syndrome, a neurological disorder which is generally preceded by an acute neurological condition known as Wernicke's encephalopathy (WE). The memory impairment that is pathognomonic (meaning specifically characteristic or indicative of a particular disease or condition) to Korsakoff's syndrome predominantly affects the episodic component of declarative memory, leaving non-declarative memory that is often procedural in nature relatively intact. The disproportionate severity in anterograde episodic memory processes in contrast to other cognitive processes is what differentiates Korsakoff syndrome from other conditions such as alcohol-related dementia.

39. D—Reconstructive memory is a theory of elaborate memory recall proposed within the field of cognitive psychology, in which the act of remembering is influenced by various other cognitive processes. People view their memories as being a coherent and truthful account of episodic memory and believe that their perspective is free from error during recall. However the reconstructive process of memory recall is subject to distortion by other intervening cognitive functions such as individual perceptions, social influences, and world knowledge, all of which can lead to errors during reconstruction.

40. D—The prevailing theory of interference based forgetting is that interference leads to forgetting when there is an inability of a retrieval cue to activate a memory code (the neural representation of stored information) because it overlaps with other memory codes.

41. C—Priming refers to an increased sensitivity to certain stimuli due to prior experience. Priming is believed to occur outside of conscious awareness, which makes it different from memory that relies on the direct retrieval of information and interfere with reconstructive memory. The subject of this experiment is proactive interference on the recall of eyewitness events. The difference between this group and the others was that they were primed with the word "smashed" in the questionnaire. By changing one word in the questionnaire, their memories were re-encoded with new details.

42. C—The serial position effect is the tendency of a person to recall the first and last items in a series best, and the middle items worst. When asked to recall a list of items in any order (free recall), people tend to begin recall with the end of the list, recalling those items best (the recency effect). Among earlier list items, the first few items are recalled more frequently than the middle items (the primacy effect).

43. C—The most widely accepted reason for the primacy effect is that the initial items presented are most effectively stored in long-term memory because of the greater amount of processing devoted to them. (The first list item can be rehearsed by itself; the second must be rehearsed along with the first, the third along with the first and second, and so on.) The primacy effect is reduced when items are presented quickly and is enhanced when presented slowly (factors that reduce and enhance processing of each item and thus permanent storage).

44. D—There are three main types of memory recall: free recall, serial recall, and cued recall. Retrieval cues are stimuli that help you retrieve a certain memory in cued recall.

45. B—The method of loci uses visualizations with the use of spatial memory, familiar information about one's environment, to quickly and efficiently recall information. In this technique the subject memorizes the layout of some building, or the arrangement of shops on a street, or any geographical entity

which is composed of a number of discrete loci. When desiring to remember a set of items the subject 'walks' through these loci in their imagination and commits an item to each one by forming an image between the item and any feature of that locus. Retrieval of items is achieved by 'walking' through the loci, allowing the latter to activate the desired items. The success of the method is based on utilizing the resistance to decay and ease of recall in visual and spatial memory as a tool to encode semantic information in long-term memory. Choices 'II' and 'III', levels of processing and elaborative rehearsal, are primarilly concerned with improving memory of semantic information by forming more durable memory traces through deeper semantic processing.

46. A—The left inferior prefrontal cortex is central to semantic memory. The hippocampus and the left posterior temporal areas (including Wernicke's area) are other areas involved in semantic memory.

47. D—The truth effect can consistently be observed even in the absence of explicit recollection. This nonreferential, implicit part of the truth effect that is thought to be driven by processing fluency (the metacognitive experience of ease during information processing). Explicit memory is not necessary for the effect, which is why it has been termed the illusory truth effect.

48. D—Previous attempts at the puzzle created memory traces in procedural memory of the same efficacy in both groups. This was not the case for declarative memory.

49. C—This is the process dissociation framework of L. L. Jacoby, a procedure to separate the contributions of different types of processes to performance of a task, employed in the false fame experiment. Theoretically, the probability of saying "yes" in the exclusion condition is the probability of the name being remembered only unconsciously. The probability of saying "yes" in the inclusion condition is the probability of a name being remembered either consciously or unconsciously. Comparison of these two yields an estimate of conscious influences, in this case distinguishing the performance of implicit and explicit memory.

50. C—Habituation is a decrease in response to a benign stimulus when the stimulus is presented repeatedly, a form of non-associative learning occuring subconsciously in implicit memory.

Consciousness and Cognition

1. The prefix 'pre-' in the word 'premedical' is a

A. phoneme
B. morpheme
C. syntactic unit
D. chereme

2. Noam Chomsky differed from B.F. Skinner in posulating that language acquisition occurs primarilly by means of

A. associative learning
B. cognitive social learning
C. a hard-wired process
D. imitation

3. Miriam learns that Lynne's cousin, Jordan, a nurse whom Miriam has never met, will be at a party they are planning to attend. When Miriam meets Jordan later that evening, she is surprised that Jordan is a man. This is an illustration of

A. representativeness heuristic
B. confirmation bias
C. availability heuristic
D. overconfidence effect

4. Which of the following is holophrastic speech typical of a two year old?

A. "Up!"
B. "I drinked it all!"
C. "Yumyum tumtum!"
D. "The faucet goes dwip dwip"

5. In the normal sleep cycle a person alternates between NREM sleep and

A. stage 1
B. stage 2
C. stage 3
D. paradoxical sleep

6. Slow wave sleep is another name for

A. stage 1
B. stage 2
C. stage 3
D. stages 1-3

7. The length of a normal sleep cycle is

A. 30 minutes
B. 90 minutes
C. 4 hours
D. 6 hours

8. Which statements below accurately describe night terrors?

I. They tend to happen during periods of arousal from delta sleep.
II. They are not a kind of dream.
III. They often occur in tandem with sleep paralysis.
IV. They result from disrupted REM sleep.

A. I only
B. I and II
C. I, II and III
D. III and IV

9. Tom Missenshot, a basketball player is listening to his coach give instructions during a tight game. He clearly hears someone within the crowd say to his neighbor, 'Tom Missenshot? What a bum!" This is an example of

A. cognitive inhibition
B. stimulus filtering
C. cocktail party effect
D. crossmodal attention

10. During REM sleep, the release of the CNS neurotransmitters norepinephrine, serotonin and histamine is

A. completely suppressed
B. reduced
C. maintained at constant levels
D. increased

11. Along with K-complexes, sleep spindles are defining characteristics of, and indicate the onset of

A. stage 1 sleep
B. stage 2 sleep
C. stage 3 sleep
D. REM sleep

12. Marcus believes that the control room of a submarine contains physical periscopes, control panels, viewing screens and an assortment of crew inclucing pilot and sonarmen. The construct manifesting this belief is a(n)

A. script
B. frame
C. schema
D. archetype

13. An assessment test composed entirely of nonverbal logic puzzles and mathematical problems may still be culturally biased due to

A. socio-economic bias
B. gender bias
C. stereotype threat
D. perceptual set

14. After seeing many news stories of home foreclosures, a person may overestimate the likelihood of winding up in foreclosure if they buy a house. This is an example of

A. base-rate fallacy
B. representativeness heuristic
C. gambler's fallacy
D. availability heuristic

15. After meeting four polite cosplayers at ComicCon, Daryl concludes that cosplayers must be a courteous group. Daryl drew this conclusion based on what kind of reasoning?

A. inductive reasoning
B. deductive reasoning
C. syllogistic reasoning
D. analogical reasoning

16. Jane has been working hard to gain acceptance into a prestigious law school. Of the following, which is most likely regarding Jane's predictions regarding her emotional state if she doesn't succeed?

I. She is likely to underestimate how negatively she will feel.
II. She will likely underestimate her ability to cope.
III. She is likely to overestimate how negatively she will feel.
IV. She will likely overestimate her ability to cope.

A. I and II
B. I and IV
C. II and III
D. III and IV

17. According to which model is a robin more representative of birds than a penguin?

A. prototype theory
B. classical taxonomy
C. representativeness heuristic
D. structuralism

18. In the past, when data indicated a decline in sales for a particular product line, Rudolph had recommended increasing advertising and discounting prices. This time, though, the problem was not direct competition from equivalent products. The product line was being technologically superseded. The more profitable course would have been to stop advertising and increase prices to maximize revenue from the existing customer base while the revenue lasted. His inclination to attempt to solve the problem using what had worked before is an example of ...

A. confirmation bias
B. functional fixedness
C. mental set
D. groupthink

19. Going out to dinner with her family, Marjorie understands the purpose of the tables, menus, food, and money at the restaurant, as well as the roles of the servers, chefs, and cashier. She expects a sequence of events to occur involving entering the restaurant, ordering, eating, paying and then exiting. This sequence of expected behaviors can be be described as a

A. prototype
B. mental set
C. schema
D. script

20. When Ornithal first met Bella, he imagined that she must be a school teacher because she liked children, had a no-nonsense attitude, and drove a practical car. His idea about her profession is best described as being arrived at by means of a

A. representativeness heuristic
B. availability heuristic
C. schema
D. mental set

21. As a method of problem solving, trial and error is a(n)

A. algorithm
B. heuristic
C. mental set
D. rule of thumb

22. Consider the following proposition:

The grass became wet numerous times when it rained, therefore: the grass always gets wet when it rains.

What type of reasoning is being employed?

A. inductive
B. deductive
C. by analogy
D. rule of thumb

23. A toddler looks up at his dad from the stroller and says 'Want juice!`". This is an example of which kind of speech?

A. holophrastic
B. telegraphic
C. babbling
D. over-regularization

24. Human beings can talk about things that aren't present. We can even talk about things that don't actually exist. What property of language does this reflect?

A. prevarication
B. generativity
C. displacement
D. arbitrariness

25. The most pervasive deficit in aphasias is

A. apraxia
B. alexia
C. dysgraphia
D. anomia

26. When August Kekulé realized that the structure of benzene was a closed ring, he was half-asleep in front of a fire. He saw molecules forming into snakes, one of which grabbed its tail in its mouth. The term for this state of consciousness is

A. hypnagogia
B. dissociative
C. NREM sleep
D. ideasthesia

27. In a single episode of *McGyver*, our hero 1) used a knife on a string to hook a towel, 2) constructed a flame thrower from a hose and a pipe, 3) constructed an arc welder from a jumper cable and two half dollars, and 4) melted a garden hose spread on a net to make an ant-repellent suit. Which obstacle to problem solving does McGyver consistently overcome?

A. focalism
B. fundamental attribution error
C. neglect of probability
D. functional fixedness

28. The sentence "Mary had a little lamb" may mean something different if Mary is walking to school with her lamb following behind or if Mary is actually sitting at a table in a restaurant having lambchops for dinner. This difference is best described as a matter of

A. pragmatics
B. syntax
C. morphology
D. semiotics

29. A group of police officers have breathalyzers displaying false drunkenness in 5% of the cases in which the driver is sober. However, the breathalyzers never fail to detect a truly drunk person. Suppose the police officers stop a driver at random, and force the driver to take a breathalyzer test. It indicates that the driver is drunk. If the police officer thinks there is a 95% chance the driver actually is drunk, their invalid reasoning can likely be ascribed to the following fallacy:

A. appeal to probability
B. conjunction fallacy
C. base-rate fallacy
D. prosecutor's fallcy

30. What is the name of the neural structure described below?

With projections to the thalamus and cerebral cortex that allow it to exert some control over which sensory signals reach the cerebrum and come to our conscious attention, this structure plays a central role in states of consciousness like alertness and sleep.

A. basal ganglia
B. pons
C. hypothalamus
D. reticular formation

31. On the EEG, the transition to stage 1 sleep is characterized by a decrease in alpha wave patterns and an increase in

A. alpha waves
B. beta waves
C. delta waves
D. theta waves

32. In which stage of sleep do night terrors, nocturnal enuresis, sleep walking, and somniloquy occur?

A. stage 1
B. stage 2
C. stage 3
D. REM

33. Complete the analogy. Cataplexy is to narcolepsy as active motor behavior is to _____

A. REM sleep behavior disorder
B. Night terrors
C. Sleep paralysis
D. NREM parasomnia

34. A specific variant of the human leukocyte antigen (HLA) complex in combination with a specific genetic mutation in the T-cell receptor alpha locus causes the immune system to attack and kill orexin producing neurons. Hence

A. sensitized phagocytic microglia will down-regulate serotonin production.
B. over expression of IL-1 leads to excessive tau phosphorylation.
C. narcolepsy may result from an auto-immune disorder with a genetic component.
D. neurons of the substantia nigra become dysfunctional and eventually die.

35. Which drug or class of drugs below is <u>not</u> a $GABA_A$ receptor positive allosteric modulator?

A. ethanol
B. valium
C. secobarbital
D. morphine

36. Complete the analogy. Substantia nigra is to dorsal striatum as _____ is to nucleus accumens.

A. ventral tegmental area
B. hypothalamus
C. ventral striatum
D. olfactory bulb

37. ΔFosB overexpression and accumulation of phosphorylated ΔFosB within neurons of the nucleus accumbus has been identified as playing a central, crucial role in the development and maintenance of pathological behavior and neural plasticity involved in both behavioral addictions and drug addictions.

ΔFosB is a

A. dopamine receptor agonist
B. tyrosine kinase
C. truncated product of the *fosB* gene
D. NMDA receptor co-agonist

38. Which of the following is better characterized as a bottom-up process?

A. endogenous attention
B. attentional control
C. executive attention
D. stimulus-driven attention

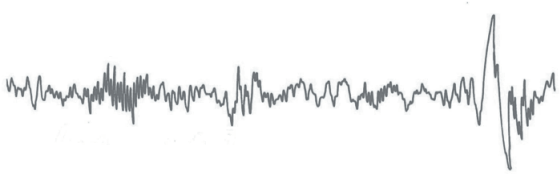
39. The substituted amphetamine, MDMA, is among which class of psychoactive drugs?

A. stimulants
B. hallucinogens
C. narcotics
D. entactogens

40. Barber, Spanos, and Chaves (1974) proposed a nonstate "cognitive-behavioural" theory of hypnosis, arguing that responses to hypnotic suggestions were mediated by a "positive cognitive set" consisting of positive expectations, attitudes, and motivation. Barber et al. noted that similar factors appeared to mediate the response both to hypnotism and to cognitive behavioural therapy, in particular, systematic desensitization. In other words

A. The hypnotic state is distinguished by a diminished emotional responsiveness.
B. The factors underlying hypnotic suggestibility resemble those underlying successful therapeutic treatment for phobias.
C. The hypnotist's object is to increase the receptability of specific messages much like the cognitive-behavioral therapist.
D. Subjects of hypnosis and desensitization therapy patients are both attempting to fulfill socially constructed roles.

41. Which stage of sleep is depicted in the EEG pattern below?



A. stage 1
B. stage 2
C. stage 3
D. REM

42. Axons from the optic tract carry the information to reset diurnal rhythms each day to the

A. lateral geniculate nucleus of the thalamus
B. superior colliculus of the midbrain
C. pretectum of the midbrain
D. suprachiasmatic nucleus of the hypothalamus

43. Concentrating on a math problem, which type of brain waves will appear on your electroencephalogram?

A. delta waves
B. beta waves
C. alpha waves
D. theta waves

44. Internal activation of the brain in REM sleep is associated with the inhibition of both external sensory input and motor output. Control of this input-output gate occurs by means of reciprocal inhibitory interactions between monoaminergic and cholinergic neurons of the

A. hypothalamus
B. reticular formation
C. medulla
D. pons

45. Chomsky's theory of generative grammar models the knowledge that underlies the human ability to speak and understand. One of the most important of Chomsky's ideas is that most of this knowledge is

A. socially constructed
B. subconscious
C. innate
D. behaviorally conditioned

46. A child watching a nature program sees a pack of hyenas prowling near a herd of zebras on the Serengeti and says 'Look at those dogs!' She is reasoning based on

A. a mental set
B. the availability heuristic
C. a prototype model
D. the representativeness heuristic

47. An auto mechanic, whenever confronted with the problem of a car that loses electrical power while driving, persists in always replacing the alternator as the first step even though recommended protocols suggest prior diagnostic tests. The mechanic has

A. belief perseverence
B. functional fixedness
C. a mental set
D. confirmation bias

48. All biological life forms that we know of depend on liquid water to exist. Therefore, if we discover a new biological life form it will probably depend on liquid water to exist. This conclusion is an example of _____.

A. inductive reasoning
B. deductive reasoning
C. an algorithm
D. formal logic

49. In a German language declarative sentence, the finite verb always stands in the second position, while other elements can be moved around to indicate emphases in meaning. Which aspect of German language does this rule govern?

A. prosody
B. grammar
C. syntax
D. morphology

50. An experiment was conducted in which speakers of two languages that categorize colors differently (English and Zuni) were asked to recognize colors. It was found that Zuñi speakers who classify green and blue together as a single color did have trouble recognizing and remembering nuances within the green/blue category. The results of this experiment would seem to suggest that

A. The structure of anyone's native language strongly influences or fully determines the worldview he will acquire as he learns the language.
B. Language and its structures limit and determine human knowledge or thought
C. Linguistic and non-linguistic events must be separately observed and described before they can be correlated.
D. The structure of a language affects its speakers' cognition.

Answer Key
Consciousness and Cognition

1. **B—**A morpheme is the smallest grammatical unit in a language. In other words, it is the smallest meaningful unit of a language.

2. **C—**Chomsky labeled whatever innate capacity the human has for language acquisition the language acquisition device (LAD). It is a hypothetical module of the human mind posited to account for children's innate predisposition for language acquisition. This is an example of the nativist theory of language. This theory asserts that humans are born with the instinct or "innate facility" for acquiring language.

3. **A—**A representativeness heuristic is a cognitive bias in which an individual categorizes a situation based on a pattern of previous experiences or beliefs about the scenario. While representativeness heuristics can be useful, they can also be limiting.

4. **A—**Holophrasis is the prelinguistic use of a single word to express a complex idea.

5. **D—**Non-rapid eye movement sleep, or NREM, is, collectively, sleep stages 1–3, previously known as stages 1–4. Rapid eye movement sleep (REM sleep, REMS), characterized by random movement of the eyes, low muscle tone throughout the body, and the propensity of the sleeper to dream vividly, is also known as paradoxical sleep because of physiological similarities to waking states, including rapid, low-voltage desynchronized brain waves.

6. **C—**Slow-wave sleep (SWS), often referred to as deep sleep, consists of stage three of non-rapid eye movement sleep. There is not a clear distinction between stages three and four. Stage three has 20-50 percent delta activity, whereas stage four has more than 50 percent.As of 2008, the American Academy of Sleep Medicine (AASM) has discontinued the use of stage four, such that the previous stages three and four now are combined as stage three.

7. **B—**A typical sleep cycle is approximately 90 minutes in duration. The whole period normally proceeds in the order: N1 –> N2 –> N3 –> N2 –> REM.

8. **B—**A night terror typically occurs with arousal from delta sleep (slow wave, N3). A night terror is not a dream. It is not a nightmare, in other words. Sleep paralysis, on the other hand, generally occurs in cases of interrupted REM sleep, where the muscles are paralyzed to prevent acting out dream content.

9. **C—**The cocktail party effect is the phenomenon of being able to focus one's auditory attention on a particular stimulus while filtering out a range of other stimuli, much the same way that a partygoer can focus on a single conversation in a noisy room. The term may also be used to describe a similar phenomenon that occurs when one may immediately detect words of importance originating from unattended stimuli, for instance hearing one's name in another conversation.

10. **A—**REM sleep is regulated by the pons region of the brainstem. Acetylcholine neurotransmitters activate this part of the brainstem. Inhibitory signals are sent from the pons to the spinal cord to bring about muscle paralysis. The release of neurotransmitters norepinephrine, serotonin and histamine is completely shut down.

11. **B—**A K-complex is an electroencephalography (EEG) waveform that occurs during stage 2 of NREM sleep. It is the largest event in healthy human EEG. They are more frequent in the first sleep cycles. K-complexes have two proposed functions: first, suppress-

ing cortical arousal in response to stimuli that the sleeping brain evaluates not to signal danger, and second, aiding sleep-based memory consolidation. A sleep spindle is a burst of oscillatory brain activity visible on an EEG that also occurs during stage 2 sleep.

12. **C—**A schema describes a pattern of thought or behavior that organizes categories of information and the relationships among them.

13 **C—**Stereotype threat is a situational predicament in which people are or feel themselves to be at risk of conforming to stereotypes about their social group. Since its introduction into the academic literature, stereotype threat has become one of the most widely studied topics in the field of social psychology. Stereotype threat has been shown to reduce the performance of individuals who belong to negatively stereotyped groups. If negative stereotypes are present regarding a specific group, group members are likely to become anxious about their performance, which may hinder their ability to perform at their maximum level.

14 **D—**The availability heuristic is a mental shortcut that relies on immediate examples that come to a given person's mind when evaluating a specific topic, concept, method or decision. The availability heuristic operates on the notion that if something can be recalled, it must be important, or at least more important than alternative solutions which are not as readily recalled. Subsequently, under the availability heuristic, people tend to heavily weigh their judgments toward more recent information, making new opinions biased toward that latest news.

15 **A—**Inductive reasoning involves starting from specifics to derive a general rule.

16 **C—**Research findings in the field of affective forecasting allow us to deduce that Jane is likely to overestimate the negative emotional impact and underestimate her ability to cope. Affective forecasts tend to be colored by impact bias, the tendency to overestimate the emotional impact of a future event, whether in terms of intensity or duration. Our affective forecasts also tend to be colored by immune neglect, which refers to forecasters' unawareness of their tendency to adapt to and cope with negative events.

17 **A—**Prototype theory is a mode of graded categorization in cognitive science, where some members of a category are more central than others. Instead of a definition based model - e.g. a bird may be defined as elements with the features [+feathers], [+beak] and [+ability to fly], prototype theory would consider a category like bird as consisting of different elements which have unequal status - e.g. a robin is more prototypical of a bird than, say a penguin. This leads to a graded notion of categories, which is a central notion in many models of cognitive science and cognitive semantics.

18 **C—**Mental sets represent a form of rigidity in which an individual behaves or believes in a certain way due to prior experience.

19 **D—**Behavioral scripts are a sequence of expected behaviors for a given situation. Scripts include default standards for the actors, props, setting, and sequence of events that are expected to occur in a particular situation

20 **A—**When people rely on representativeness to make judgments, they are likely to judge wrongly because the fact that something is more representative does not actually make it more likely. The representativeness heuristic is simply described as assessing similarity of objects and organizing them based around the category prototype.

21 **B—**A heuristic is any approach to problem solving, learning, or discovery that employs a practical method not guaranteed to be optimal or perfect, but sufficient for the imme-

diate goals. Trial and error is the most fundamental heuristic. An algorithm is different from a heuristic in that an algorithm will always produce a correct solution.

22 **A—**Inductive reasoning attempts to support a determination of the rule. It hypothesizes a rule after numerous examples are taken to be a conclusion that follows from a precondition in terms of such a rule.

23 **B—**Telegraphic speech, according to linguistics and psychology, is speech during the two-word stage of language acquisition in children, which is laconic and efficient.

24 **C—**Displacement is the capability of language to communicate about things that are not immediately present (spatially or temporally); i.e., things that are either not here or are not here now.

25 **D—**Anomia is a deficit of expressive language. It is the most pervasive deficit in the aphasias. Some level of anomia is seen in all of the aphasias.

26 **A—**Hypnagogia is the experience of the transitional state from wakefulness to sleep: the hypnagogic state of consciousness, during the onset of sleep. Mental phenomena that occur during this "threshold consciousness" phase include lucid thought, lucid dreaming, hallucinations, and sleep paralysis.

27 **D—**Functional fixedness is a cognitive bias that limits a person to using an object only in the way it is traditionally used.

28 **A—**Pragmatics is a subfield of linguistics and semiotics that studies the ways in which context contributes to meaning. Pragmatics explains how language users are able to overcome apparent ambiguity, since meaning relies on the manner, place, time etc. of an utterance.

29 **C—**This would be a common form of base-rate fallacy. The probability of a positive test result is determined not only by the accuracy of the test but by the characteristics of the sampled population. When the incidence, ie. the proportion of those who have a given condition, is lower than the test's false positive rate, even tests that have a very low chance of giving a false positive in an individual case will give more false than true positives overall. In other words, if less than 5% of drivers are actually drunk, more false breathalyzer results will be obtained from random selection than true ones. Where false positive tests are more probable than true positive tests this is known as the false positive paradox.

30 **D—**The reticular formation is a set of interconnected nuclei that are located throughout the brainstem. The reticular formation is not anatomically well defined because it includes neurons located in diverse parts of the brain. The neurons of the reticular formation all play a crucial role in maintaining behavioral arousal and consciousness.

31 **D—**Theta waves tend to appear in meditative, drowsy and sleeping states (stage 1 and stage 2) but not the deepest stages of sleep where delta waves predominate.

32 **C—**Night terrors, nocturnal enuresis, sleep walking, and somniloquy occur during stage 3 sleep.

33 **A—**A classic symptom of narcolepsy, cataplexy is an episodic loss of muscle function, ranging from slight weakness such as limpness at the neck or knees to a complete body collapse. Cataplexy is generally considered to be unique to narcolepsy and is analogous to sleep paralysis in that the usually protective paralysis mechanism occurring during sleep is inappropriately activated. The opposite of this situation (failure to activate this protective paralysis) occurs in rapid eye

movement behavior disorder. The major and arguably only abnormal feature of RBD is loss of muscle atonia (i.e., the loss of paralysis) during otherwise intact REM sleep (during which paralysis is not only normal but necessary). The loss of motor inhibition leads to a wide spectrum of behavioral release during sleep. This extends from simple limb twitches to more complex integrated movement, in which people appear to be unconsciously acting out their dreams.

34 **C—**Often those affected with narcolepsy have low levels of the neuropeptide orexin. Research suggests that this is often due to an autoimmune disorder. Choice 'C' has to do with Alzheimer's disease and choice 'D' with Parkinson's (The neurons of the substantia nigra are dopamine producing).

35 **D—**Ethanol, benzodiazepenes (like valium), and barbiturates are $GABA_A$ receptor positive allosteric modulators ($GABA_A$ PAMs). $GABA_A$ receptor positive allosteric modulators increase the activity of the $GABA_A$ receptor protein. Unlike $GABA_A$ receptor agonists, $GABA_A$ PAMs do not bind at the same active site as the γ-Aminobutyric acid (GABA) neurotransmitter molecule: they affect the receptor by binding at a different site on the protein. In contrast, opioids act on opioid receptors. The endogenous opioids are dynorphins, enkephalins, endorphins, endomorphins and nociceptin.

36 **A—**Dopaminergic pathways, sometimes called dopaminergic projections, are the sets of projection neurons in the brain that synthesize and release the neurotransmitter dopamine. Two of the most significant dopaminergic pathways are the nigrostriatal pathway and the mesolimbic pathway. The nigrostriatal pathway transmits dopamine from the substantia nigra to the caudate nucleus and putamen. The substantia nigra is located in the midbrain, while both the caudate nucleus and putamen are located in the dorsal striatum. The nigrostitial pathway is important in motor function and reward learning. Disorder in the nigrostitial pathway is implicated in Parkinson's disease. The mesolimbic pathway transmits dopamine from the ventral tegmental area to the nucleus accumbens. The mesolimbic pathway is important for pleasure and positive reinforcement. Disorder in the mesolimbic pathway is implicated in addiction.

37 **C—**This is a gene nomenclature question that is meant to also teach a bit about the molecular cell biology of the addiction process within neurons of the nucleus accumbus (The mesolimbic domaninergic pathway transmits dopamine from the ventral tegmental area to the nucleus accumbus). The molecular hallmark of the addiction process is the accumulation of phosphorylated ΔFosB within the nuclei of accumbal cells where it participates as a transcription factor (repressing *c-fos*). Regarding nomenclature, the question hinges on the meaning of the 'Δ' in the gene product signifier 'ΔFosB'. This symbol, 'Δ', under HGNC guidelines signifies 'deletion'. ΔFosB is a truncated splice variant of FosB. (Notice that when the gene itself is indicated in the nomenclature, the gene name is italicized and uncapitalized). You NEED to be comfortable with gene and gene product nomenclature for the new MCAT.

38 **D—**Stimulus-driven attention is bottom-up processing, also known as exogenous attention. Exogenous attention is driven by the properties of the objects themselves. Some processes, such as motion or a sudden loud noise, can attract our attention in a pre-conscious, or non-volitional way. We attend to them whether we want to or not. Exogenous attention is thought to involve parietal and temporal cortices, as well as the brainstem. The second aspect is called top-down processing, also known as goal-driven, endogenous attention, attentional control or executive attention. This aspect of our attentional

orienting is under the control of the person who is attending. It is mediated primarily by the frontal cortex and basal ganglia as one of the executive functions.

39 **D–**–Entactogens (or empathogens) are a class of psychoactive drugs that produce experiences of emotional communion, oneness, relatedness, emotional openness—that is, empathy or sympathy—as particularly observed and reported for experiences with 3,4-Methylenedioxymethamphetamine (MDMA).

40 **B–**–Systematic desensitization, also known as graduated exposure therapy is a type of behavior therapy used in the field of psychology to help effectively overcome phobias and other anxiety disorders.

41 **B–**–Because the EEG contains a sleep spindle and a K-complex, we know that this is stage 2 sleep.

42 **D–**–The axons in the optic tract terminate in four nuclei within the brain: 1) the lateral geniculate nucleus of the thalamus - for visual perception, 2) the superior colliculus of the midbrain - for control of eye movements, 3) the pretectum of the midbrain - for control of the pupillary light reflex; and 4) the suprachiasmatic nucleus of the hypothalamus - for control of diurnal rhythms and hormonal changes.

43 **B–**–Alpha brainwaves are dominant during quiet relaxation and in some meditative states. Beta brainwaves dominate when attention is directed towards difficult cognitive tasks and engaging stimuli in the outside world.

44 **D–**–REM sleep begins with signals from the pons to the cerebral cortex which lead to EEG patterns similar to wakefulness as well as signals to the spinal cord, causing temporary paralysis of the limb muscles.

45 **C–**–In Chomsky's view a baby possesses a large body of prior knowledge about the structure of language in general, and need only actually learn the idiosyncratic features of the language it is exposed to.

46 **C–**Prototype theory is a mode of graded categorization in cognitive science, where some members of a category are more central than others. For example, when asked to give an example of the concept furniture, chair is more frequently cited than, say, stool. Prototype theory was a radical departure from traditional necessary and sufficient conditions as in Aristotelian logic. Thus instead of a definition based model - e.g. a bird may be defined as elements with the features [+feathers], [+beak] and [+ability to fly], prototype theory would consider a category like bird as consisting of different elements which have unequal status - e.g. a robin is more prototypical of a bird than, say a penguin. This leads to a graded notion of categories, which is a central notion in many models of cognitive science and cognitive semantics.

47 **C–**–Mental sets represent a form of rigidity in which an individual behaves or believes in a certain way due to prior experience. In the field of psychology, mental sets are typically examined in the process of problem solving, with an emphasis on the process of breaking away from particular mental sets into formulation of insight.

48 **A–**–Inductive reasoning is reasoning in which the premises are viewed as supplying strong evidence for the truth of the conclu-

sion. It is the derivation of general principles from specific observations. While the conclusion of a deductive argument is certain, the truth of the conclusion of an inductive argument is probable, based upon the evidence given. In the specific example, we are infering a future probability, the general proposition, from specific past instances. Unlike deductive arguments, inductive reasoning allows for the possibility that the conclusion is false, even if all of the premises are true.

49 **C—**In linguistics, syntax is the set of rules, principles, and processes that govern the structure of sentences in a given language, specifically word order.

50 **D—**The best answer in this question reflects the tenets of linguistic relativism. Choices 'A' and 'B' are too strong, verging on linguistic determinism. Choice 'C' reflects a criticism of the experimental methadology. Note that the degree to which language influences thought is not at all settled. Taking the universalist point of view, for example, Steven Pinker argues in The Language Instinct that thought is independent of language, that language is itself meaningless in any fundamental way to human thought, and that human beings do not even think in "natural" language.

Motivation and Emotion

1. A professional tennis player is likely to play at his best when his level of arousal is

A. low
B. moderately low
C. moderately high
D. high

2. A study found that patients who had lesions to the ventromedial prefrontal cortex had impaired emotional experiences, but unaffected autonomic responses while patients with lesions to the right somatosensory cortex had impaired autonomic responses without affected emotional experiences. To which theory of emotion do these results pose the most direct challenge?

A. James-Lange theory
B. Cannon-Bard theory
C. Opponent-Process theory
D. Cognitive-Appraisal theory

3. When she was eight years old, Madelaine loved to play around on the family piano. Her parents were excited and supportive so they lavished praise on Madelaine. They arranged for a teacher and set up a treat jar to reward practice hours. After one year, however, they stopped giving so much praise and neglected rewarding with treats. Madelaine found herself no longer interested in playing piano. This pattern of behavior best illustrates

A. internal locus of control
B. drive reduction
C. the overjustification effect
D. approach-avoidance

4. According to drive reduction theory, which of the following is an example of a secondary drive?

A. social approval
B. need for warmth
C. hunger
D. thirst

5. The circumventricular organs, median preoptic nucleus, and tissue surrounding the anteroventral third ventricle in the lamina terminalis (AV3V region) provide the neuroanatomic focus for thirst, sodium appetite, and cardiovascular control, making extensive connections with the hypothalamus, limbic system, and brain stem. The AV3V region is well provided with receptors that respond to

A. cholecystokinin
B. insulin
C. angiotension II
D. acetylcholine

6 When a person undergoes great emotional stress over a long period of time, the general adaptation syndrome describes three successive physical stages: alarm, resistance, and _____.

A. adaptation
B. avoidance
C. exhaustion
D. reinforcement

7. Study participants, told they were being injected with a new drug to test eyesight, were actually injected with epinephrine or a placebo. The participants who received epinephrine were subdivided into 3 groups. Group 1 was told nothing about side effects. Group 2 was told that they they would probably feel numbness in their feet and an itching sensation over parts of their body. Group 3 was told that their hands would shake, their heart would pound, and their face may get warm and flushed. After the injections the participants were told to wait in pairs. They did not know that they had been paired with a confederate of the researchers. Interacting with the subjects, the confederate acted either euphoric or angry. Researchers observed the interactions through a two-way mirror.

The researchers observed that the participants in groups 1 and 2 tended to imitate the behaviors of the confederates while the participants in group 3 were uninfluended by the behavior of the confederates. Participants in the placebo group were not strongly influenced by the behavior of the confederates. Which of the following may be concluded from the results of this experiment?

I. A state of arousal with no immediate explanation will be labeled in terms of available cognitions.
II. A state of arousal with an appropriate explanation is not likely to be labeled in terms of the alternative available cognitions.
III. Emotional reactions and experiences are more likely to occur if a person is in a state of physiological arousal.
IV. Physiological changes and emotional response to a stimulus are separate and independent

A. IV only
B. I and II
C. I, II and III
D. I, II, III and IV

8. In which theory of emotion do physiological states and emotional states occur simultaneously?

A. Cannon-Bard
B. Schachter-Singer
C. James-Lange
D. Miller

9. Researchers have confirmed correlation between level of adiposity in rats and lesions of the ventromedial hypothalamus. Lesions in this area cause the rats feeding behavior to be unresponsive to increased levels of which hormone?

A. leptin
B. ghrelin
C. insulin
D. gastrin

10. Lesions to the lateral hypothalamus are most likely to result in

A. aphagia
B. excessive feeding behavior
C. hypertension
D. increased sexual behavior

11. Among the following behaviors, a drive reduction theorist would have the greatest difficulty explaining

A. overeating
B. thrill-seeking
C. financial investing
D. pursuit of social acceptance

12. You stumble upon a bear in the woods. Your heart is beating like crazy. You are taking quick, shallow breaths and sweating. To William James, the physiological response is interpreted as the emotion of fear. A two-factor theorist such as Schachter would reply

A. The fear emotion is inseparable from the repressed relief emotion when the bear moves on.
B. The combination of the physiological response and the cognitive appraisal of the bear produces the fear emotion.
C. Fear of the bear could be experienced even if the body did not have a physiological reaction.
D. Cognitive appraisal of the bear preceeds the physiological response. It's the thought that leads to the simultaneous experience of the physiological response and the fear emotion.

13. For the past year Morris has been commuting back and forth to work through crazy traffic. His job is very demanding, and his relationship with his supervisor is toxic. His company is in crisis. The market they serve is declining, and Morris is concerned that his skills are becoming obsolete. Morris is starting to experience gastrointestinal and cardiovascular symptoms. In terms of general adaptation syndrome, which of the answer choices below best characterizes Morris' state?

A. alarm
B. resistance
C. exhaustion
D. decompensation

14. Phyllis was tested and scored high on the Holmes and Rahe social readjustment rating scale? Phyllis is likely to have a high level of

A. stress
B. self-actualization
C. emotional intelligence
D. social anxiety

15. Motivation as a desire to perform an action is usually defined as having two parts, directional such as directed towards a positive stimulus or away from a negative one, as well as the activated "seeking phase" and consummatory "liking phase". This type of motivation has neurobiological roots in the _____ and mesolimbic dopaminergic pathways.

A. hypothalamus
B. pontine brainstem
C. amygdala
D. basal ganglia

16. Students are likely to be extrinsically motivated if they

A. perform an activity in order to attain a desired outcome
B. are interested in mastering a topic, not just in achieving good grades
C. attribute their educational results to factors under their own control
D. are driven by an interest or enjoyment in the task itself

17. Which of the following scenarios describe a dynamic consistent with the overjustification effect?

I. Children who were rewarded with a gold star for drawing pictures spent less time playing with the drawing materials in subsequent observations.
II. Third graders who were rewarded with a book showed more reading behavior in the future.
III. Mild threats against playing with an attractive toy actually served to increase the child's interest in the toy
IV. A monetary reward did not in crease motivation to engage in a task.

A. I only
B. I and III
C. I, II and III
D. I, II, III and IV

18. Reading *Écrits* by Jacques Lacan induced in Cornelius an intense form of mental concentration where throughout the day all of his conscious thoughts were directed to interpreting and understanding the work. Finals week was approaching, and Cornelius was beginning to sense himself side-tracking away from important tasks. Which of the following best describes Cornelius' state of mind?

A. flow
B. hyperfocus
C. perseveration
D. stereotypy

19. Within the context of behaviorism, the drive theory of motivation is based on the mechanism of

A. negative reinforcement
B. positive reinforcement
C. negative punishment
D. positive punishment

20. A recent hybrid of the somatic and cognitive theories of emotion is the perceptual theory. It emphasizes the meaningfulness of emotions as is recognized by cognitive theories. The novel claim of this theory is that conceptually-based cognition is unnecessary for such meaning. Rather the bodily changes themselves perceive the meaningful content of the emotion in being causally triggered by certain situations. In this respect, emotions are held to be analogous to faculties such as vision or touch, which provide information about the relation between the subject and the world in various ways. In arguing that bodily responses are central to emotions, this theory is

A. psychoanalytic
B. neo-Jamesian
C. communication based
D. internally valid

21. When people see a snake, they are likely to activate both affective information and non-affective information about its ontological category. According to the Affective Primacy Hypothesis, the affective information has priority, and its activation precedes identification of the ontological category. According to the Cognitive Primacy Hypothesis, perceivers must know what they are looking at before they can make an affective judgment about it. However, it has been hypothesized that the relative speed with which affective and non-affective information gets activated depends upon the contexts in which stimuli are processed. In other words.

A. Emotional arousal and cognitive labeling occur simultaneously.
B. Physiological arousal occurs but then must be cognitively labeled before the emotion is processed.
C. Physiological arousal may occur first or cognitive labeling may occur first.
D. Physiological arousal instigates the experience of emotion.

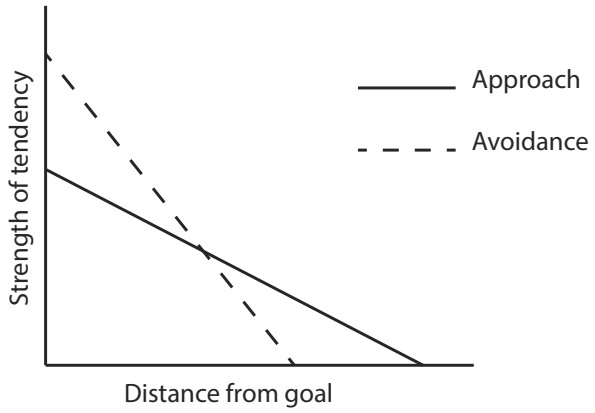
22. When describing an emotion, the valence of the emotion refers to

A. whether the emotion is classified as a positive affect or a negative affect
B. the intensity of the corresponding state of physiological arousal
C. the intrinsic attractiveness or averseness of an event, object, or situation
D. the degree of conflict between approach and avoidance

23. Ghrelin induced hyperphagia is thought to be mediated by the

A. ventromedial hypothalamus
B. hippocampus
C. substantia nigra
D. lateral hypothalamus

24. The strength of a rat's pull toward a food goal as well as the strength of pull away from the location where the rat had received a shock were measured by placing rats in a harness attached to a leash and measuring the force of pull against a spring. In the figure below depicts typical approach and avoidance gradients.



The point at which the two lines cross represents

I. the point at which the rat would stop
II. equal relative strengths of approach and avoidance
III. equilibrium
IV. double approach-avoidance

A. I only
B. I and III
C. I, II and III
D. I, II, III and IV

25. Which of the following describes a stable equilibrium in which a movement away from one activity is countered by an increase in the repellence of the other activity so that the individual returns to the point where she was at the beginning of the conflict?

A. approach-approach
B. approach-avoidance
C. avoidance-avoidance
D. double approach-avoidance

26. Which of the following types of conflict between incompatible motives may produce an unstable equilibrium?

A. approach-approach
B. approach-avoidance
C. avoidance-avoidance
D. double approach-avoidance

27. A study showed that Japanese individuals tended to express strong positive or negative emotions far less than either American or Canadian individuals. This is an example of

A. conditioned inhibition of affective arousal
B. a culture-bound syndrome
C. facial feedback
D. different display rules

28. The limbic system supports a variety of functions including

I. emotion
II. long-term memory
III. olfaction
IV. motivation

A. I only
B. I and III
C. I, II and III
D. I, II, III and IV

29. fMRI tasks were included in a study involving first impressions of CEOs. It was demonstrated that while the amygdala did play a role in the evaluation of trustworthiness, the amygdala also played a generalized role in the overall evaluation of the first impression of faces, solidifying evidence that the amygdala plays a role in

A. social processing
B. episodic memory
C. attentional processing
D. emotional processing

30. A survey asked participants of varying ages to rate a set number of statements from most important to least important. The researchers found that children had higher physical need scores than the other groups, the love need emerged as most important from childhood to young adulthood, the esteem need was highest ranked among the adolescent group, young adults had the highest self-actualization level, and elderly people gave the highest rank to security. These results suggest Maslow's hierarchy may be limited

A. in failing to differentiate the social and intellectual needs of those raised in different cultural circumstances
B. in that the needs of acceptance and community might outweigh the needs for freedom and individuality
C. as a theory for developmental sequence
D. in neglecting the emotional, familial, and evolutionary implications of physiological needs within the community

31. Electrical stimulation of the ventromedial hypothalamus of a rat will cause it to

A. stop eating
B. start eating
C. stop drinking
D. start drinking

32. Lack of sleep increases ghrelin and decreases leptin. This may underly the correlation of chronic sleep-restriction and

A. poor memory
B. obesity
C. nutritional stunting
D. poor impulse control

33. Because memory constructs are often linked to affective states, affect can influence social behaviors by selectively causing certain memory constructs to become more accessible and easily retrieved from memory. This represents a form of

A. priming
B. reinforcement
C. cognitive labeling
D. bottom-up processing

34. A brain injury patient experiences difficulty distinguishing emotions in facial expressions. Specifically, the facial expressions associated with fear, anger, and disgust seem indistinguishable to her. Of the following which is the most likely site of the lesion(s)?

A. amygdala
B. hippocampus
C. hypothalamus
D. cingulate gyrus

35. Misattribution of arousal is a term in psychology which describes the process whereby people make a mistake in assuming what is causing them to feel aroused. For example, when actually experiencing physiological responses related to fear, a person might encounter another and mislabel those responses as romantic arousal. The phenomenon of misattribution of arousal is most consistent with which of the following theories of emotion?

A. Cannon-Bard theory
B. Schachter-Singer theory
C. James-Lange theory
D. Appraisal theory

36. In which phase of the menstrual cycle is a woman's libido likely to be highest?

A. follicular phase
B. ovulatory phase
C. luteal phase
D. proliferative phase

37. The first step in a cognitive mood repair strategy is

A. evaluation of the feelings of dysphoria to better understand the source of the negative mood
B. re-evaluation of negative affect to find a positive perspective
C. regulation of moods by the utilization of activities or tasks
D. recall of mood-incongruent memories or positive thoughts

38. A study recruiting a test population of Japanese males found higher scores on the Toronto Alexithymia Scale among those with the 5-HTTLPR homozygous long (L) allele. The 5-HTTLPR region on the serotonin transporter gene influences the transcription of the seretonin transporter that removes serotonin from the synaptic cleft, and is well studied for its association with numerous psychiatric disorders. The particular apparent association of the 5-HTTLPR allele with alexithymia underscores the importance of serotonin in modulating processes involved in

A. reward-motivated behavior
B. alertness
C. emotional awareness
D. satiety

39. Tonya loves to watch videos of kittens playing on the internet. It's her favorite thing. The cute little kittens always make her feel happy! Where would we expect to see an increase in activation under fMRI while Tonya watches kitten videos?

A. left amygdala
B. hypothalamus
C. right cerebral hemisphere
D. left cerebral hemisphere

40. In 2000 Bailey, Dunne and Martin studied a sample of 4,901 Australian twins and reported a 20% concordance rate for homosexuality in male identical twins. In other words,

A. 20% of male identical twins in the study were homosexual.
B. For a male identical twin in the study, there was a 20% chance his twin reported the same sexual orientation.
C. According to this study, homosexuality is 20% determined by genetics and 80% determined by environment.
D. If one of the identical twins in the study reported as homosexual, the probability that the pair reported as homosexual was 20%.

41. Decreasing level in the blood signals the "fed" state with the hormone . . .

A. ghrelin
B. leptin
C. cholecystikinin
D. insulin

42. In 1978, Paul Ekman and Wallace Friesen finalized the Facial Action Coding System (FACS)to taxonomize every human facial expression. FACS is an anatomically based system for describing all observable facial movement for every emotion. Each observable component of facial movement is called an action unit or AU and all facial expressions can be decomposed into their constituent core AUs. What is the primary usefulness of this work within psychological research?

A. operationalization of nonverbal behavior
B. confirmation of the facial-feedback hypothesis
C. demonstration of cross-cultural display rules
D. evaluating truthfulness

43. Functional MRI experiments have revealed that the anterior insula in the brain is particularly active when experiencing disgust, when being exposed to offensive tastes, and when viewing facial expressions of disgust. This evidence supports the contention that

A. Fear is a primary emotion and disgust is a secondary emotion.
B. Disgust is a primary emotion and fear is a secondary emotion.
C. Disgust and fear are separate basic emotions.
D. The differences between the emotions of fear and disgust are not qualitative but rather involve a difference in valence and arousal level.

44. A state of psychological arousal that activates behavior and propels one towards a goal is a(n)

A. drive
B. emotion
C. motive
D. incentive

45. The fusiform face area (FFA) is a part of the human visual system that, it is speculated, is specialized for facial recognition. It is located in the fusiform gyrus (Brodmann area 37) There are countless facial expressions humans use that disturb the structure of the face. These disruptions and emotions are first processed in the amygdala and later transmitted to the FFA for facial recognition. This data is then used by the FFA to determine more static information about the face. Despite its downstream position in emotional processing, recent evidence demonstrates that the FFA has functions regarding emotion. The FFA is differentially activated by faces exhibiting different emotions. A study has determined that the FFA is activated more strongly by fearful faces than neutral faces.

According to the above passage, the position of the FFA downstream from the amygdala in the processing of facial expressions was taken as evidence that

A. The FFA has little to do with emotion perception.
B. The FFA plays a role in both emotion perception and other aspects in face perception.
C. Face perception is an ability that involves many areas of the brain.
D. The fusiform face area is necessary for face detection and identification.

46. In Robert Plutchik's psychoevolutionary theory of emotion . . .

A. The concept of emotion does not apply to all animals.
B. Different emotions do not have distinct physiological signatures.
C. Primary emotions can be conceptualized in terms of pairs of polar opposites.
D. There is a direct relation between dopamine, noradrenaline and serotonin levels and eight basic emotions.

47. Which theory of emotion holds that conscious experience of an event occurs prior to physiological arousal?

A. cognitive appraisal theory
B. James-Lange theory
C. two-factor theory
D. Cannon-Bard theory

48. Which of the following represents the application of Premack's principle for self-motivation?

A. To perform well in his first year at college, Joseph listed his main goals and broke them down into detailed, attainable subgoals.
B. At the gym, Phillip started with the more difficult exercises and the ones he disliked, and saved those that were more relaxing or enjoyable for the end of his workout.
C. The day she started her new job Angela wrote down what she perceived as her strengths and weaknesses to be better equipped to deal with problems and achieve her goals.
D. During the month Monica was finishing her dissertation she would only socialize with the people in her life who were positive and self-motivated.

49. In the fight-or-flight response, the adrenal medulla releases _____.

A. cortisol
B. catecholamines
C. neuropeptide Y
D. testosterone

50. A study was conducted in which 225 female students rated a series of common, domestic appliances, and then were allowed to choose one of two appliances as gifts to take home. A second round of ratings indicated that the participants increased their ratings of the domestic appliance they chose, and lowered their ratings of the appliances they rejected. Which theoretical paradigms below do these results best exemplify?

A. approach-avoidance
B. cognitive dissonance
C. Premack's principle
D. overjustification

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Answer Key
Motivation and Emotion

1. **C—**The Yerkes–Dodson law is an empirical relationship between arousal and performance. The law dictates that performance increases with physiological or mental arousal, but only up to a point. When levels of arousal become too high, performance decreases. Research has found that different tasks require different levels of arousal for optimal performance. For example, difficult or intellectually demanding tasks may require a lower level of arousal (to facilitate concentration), whereas tasks demanding stamina or persistence may be performed better with higher levels of arousal (to increase motivation). Additionally, we tend to perform newly learned tasks better at a lower level of arousal, but we tend to perform well-learned tasks at a higher level of arousal.

2. **A—**The experimental results suggest that autonomic responses were dissociated with emotional experiences. The basic premise of the James-Lange theory is that physiological arousal instigates the experience of emotion. Instead of feeling an emotion and subsequent physiological (bodily) response, the theory proposes that the physiological change is primary, and emotion is then experienced when the brain reacts to the information received via the body's nervous system.

3. **C—**The overjustification effect occurs when an expected external incentive such as money or prizes decreases a person's intrinsic motivation to perform a task. The overall effect of offering a reward for a previously unrewarded activity is a shift to extrinsic motivation and the undermining of pre-existing intrinsic motivation. Once rewards are no longer offered, interest in the activity is lost; prior intrinsic motivation does not return, and extrinsic rewards must be continuously offered as motivation to sustain the activity.

4. **A—**According to such theorists as Clark Hull and Kenneth Spence, drive reduction is a major cause of learning and behavior. Primary drives are innate drives (e.g. thirst, hunger, and sex), whereas secondary drives are learned by conditioning (e.g. money).

5. **C—**Among its many effects, angiotensin II increases thirst sensation (dipsogen) through the subfornical organ of the brain (a circumventricular organ), decreases the response of the baroreceptor reflex, and increases the desire for salt. Circumventricular organs are structures in the brain that are characterized by their extensive vasculature and lack of a normal blood brain barrier.

6. **C—**Physiologists define stress as how the body reacts to a stressor, real or imagined, a stimulus that causes stress. Acute stressors affect an organism in the short term; chronic stressors over the longer term. General Adaptation Syndrome (GAS), developed by Hans Selye, is a profile of how organisms respond to stress. GAS is characterized by three phases: a nonspecific mobilization phase, which promotes sympathetic nervous system activity; a resistance phase, during which the organism makes efforts to cope with the threat; and an exhaustion phase, which occurs if the organism fails to overcome the threat and depletes its physiological resources.

7. **C—**The passage describes a famous study conducted by Stanley Schachter and Jerome E. Singer in 1962 testing how people use clues in their environment to explain physiological changes. Schachter-Singer theory is also called two-factor theory. Choices I, II, and III were the hypotheses upheld by the experiment. In two-factor theory, an emotional state is the result of the individual's cognitive interpretation of an aroused bodily state.

8. **A—**In Cannon–Bard theory the physiological changes and subjective feeling of an emo-

tion in response to a stimulus are separate and independent. Arousal does not have to occur before the emotional changes. In two-factor theory (Schachter-Singer) an emotional state is the result of the individual's cognitive interpretation of an aroused bodily state. In James-Lange theory, emotions follow physical reactions. In Miller's theory, emotion is produced in approach-avoidance situations.

9. **A—**Leptin, the "satiety hormone," is a hormone made by adipose cells that helps to regulate energy balance by inhibiting hunger. Leptin is opposed by the actions of the hormone ghrelin, the "hunger hormone". Both hormones act on receptors in the the hypothalamus to regulate appetite to achieve energy homeostasis. Insulin and cholecystikinin also function as satiety signals. Among its many functions, insulin promotes the release of leptin from adipose cells.

10. **A—**Aphagia is the inability or refusal to swallow. The lateral hypothalamus is the brain's hunger center. In experimental studies, rats with lateral hypothalamic lesions refuse to eat or drink and waste away unless force fed. (Note that the ventromedial hypothalamus is the brain's satiety center. Lesions to the ventromedial hypothalamus are likely to result in over-eating.)

11. **B—**All of the choices represent behaviors to satisfy primary or secondary drives under drive reduction theory except thrill seeking. Arousal theory provides a basis to understand the motivations underlying thrill seeking and other similar behavior patterns while also able to encompass the claims of drive reduction theory. In arousal theory, humans are motivated to maintain an optimal level of arousal.

12. **B—**The Schachter-Singer two-factor theory of emotion, states that emotion is based on two factors: physiological arousal and cognitive label. Choice 'A' reflects opponent-process theory. Choice 'C' is somewhat along the lines of Cannon-Bard theory. Choice 'D' reflects Lazarus' cognitive appraisal theory.

13. **C—**The third stage of the general adaptation syndrome could be either exhaustion or recovery. In exhaustion, all of the body's resources are eventually depleted and the body is unable to maintain normal function. The initial autonomic nervous system symptoms may reappear (sweating, raised heart rate, etc.). If stage three is extended, long-term damage may result (prolonged vasoconstriction results in ischemia which in turn leads to cell necrosis), as the body's immune system becomes exhausted, and bodily functions become impaired. What is occuring is decompensation, choice 'D', the symptomatic effects of exhaustion.

14. **A—**The Holmes and Rahe social readjustment rating scale is sometimes simply called the Holmes and Rahe stress scale. Subjects are asked to tally a list of 43 life events based on a relative score. A positive correlation of 0.118 was found between the score on the scale and incidence of stress related illnesses.

15. **D—**The basal ganglia have a limbic sector whose components are assigned distinct names: the nucleus accumbens, ventral pallidum, and ventral tegmental area (VTA). There is considerable evidence that this limbic portion plays a central role in reward learning, particularly a pathway from the VTA to the nucleus accumbens that uses the neurotransmitter dopamine.

16. **A—**Extrinsic motivation refers to the performance of an activity in order to attain a desired outcome. Extrinsic motivation comes from influences outside of the individual. Common extrinsic motivations are rewards (for example money or grades) for showing the desired behavior, and the threat of punishment following misbehavior. Competition

is an extrinsic motivator because it encourages the performer to win and to beat others, not simply to enjoy the intrinsic rewards of the activity.

17. A—The overjustification effect occurs when an expected external incentive such as money or prizes decreases a person's intrinsic motivation to perform a task. The overall effect of offering a reward for a previously unrewarded activity is a shift to extrinsic motivation and the undermining of pre-existing intrinsic motivation. Once rewards are no longer offered, interest in the activity is lost. Prior intrinsic motivation does not return, and extrinsic rewards must be continuously offered as motivation to sustain the activity.

18. B—Flow and hyperfocus are similar states. However, hyperfocus contains in its meaning an element of possible dysfunction. In some circumstances both flow and hyperfocus can be an aid to achievement, but in circumstance or situations, where the same focus and behavior could be a liability, distracting from the task at hand, hyperfocus is the better usage. Perseveration is a related term in which hyperfocus is symptomatic of a psychiatric condition where there is an inability or impairment in switching tasks or activities. A stereotypy is a repetitive or ritualistic movement, posture, or utterance.

19. A—Within the framework of behaviorism, drive theory involves negative reinforcement. Task reinforcement is associated with the removal of an aversive stimulus—the lack of homeostasis in the body.

20. B—William James argued that feelings and emotions were secondary to physiological phenomena. In his theory, James proposed that the perception of what he called an "exciting fact" directly led to a physiological response, known as "emotion."

21. C—The hypothesis is that the speed with which affective and non-affective information gets activated varies with context. So neither Affective Primacy nor Cognitive Primacy should hold at all times. In other words, physiological arousal may occur first or cognitive labeling may occur first.

22. A—Choices 'A' and 'C' both represent correct usage of the term, but the question refers to the specific usage of valence in classifying an emotion (not a stimulus).

23. D—Hyperphagia is excessive hunger or increased appetite. Ghrelin, the "hunger hormone" is a peptide hormone produced by ghrelinergic cells in the gastrointestinal tract which functions as a neuropeptide in the central nervous system. Ghrelin signaling mediates appetite through lateral hypothalamic orexin pathways

24. C—This is the equilibrium point where, as the goal is approached, the relative strengths of approach and avoidance are about equal, and activity stops. Double approach-avoidance is not relevant to the experiment. Double approach-avoidance describes a situation, common in real life, where an individual is faced with having to choose between two or more goals, each of which has both attracting and aversive aspects.

25. C—In the avoidance-avoidance conflict, the individual is faced with two goals, both of which are aversive.

26. A—Approach-approach conflict may lead to a state of unstable equilibrium. When one of the two goals is approached, its desirability increases. In other words, the choice becomes easier as soon as one moves towards either goal.

27. D—Display rules are a social group's informal norms about when, where, and how one should express emotions. They can be described as culturally prescribed rules that people learn early on in their lives by interactions and socializations with other people.

The results of one particular study showed that Japanese display rules allowed the expressions of strong emotions (either positive or negative) such as anger, contempt, disgust, happiness, or surprise far less than either American or Canadian display rules.

28. D—The limbic system is not separate system but a collection of structures from the telencephalon, diencephalon, and mesencephalon. It includes the olfactory bulbs, hippocampus, hypothalamus, amygdala, anterior thalamic nuclei, and cingulate gyrus (a partial list of limbic system structures). The limbic system supports a variety of functions including emotion, behavior, motivation, long-term memory, and olfaction Emotional life is largely housed in the limbic system, and it has a great deal to do with the formation of memories.

29. A—First impressions and evaluations of trustworthiness are functions of social processing. However, the other choices do also represent functions involving participation of the amygdala.

30. C—The study suggests that Maslow's hierarchy may be limited as a theory for developmental sequence. For example, Maslow's hierarchy places the need for esteem at a higher position, but according to the age progression in the question-stem, the sequence of the need for love and the need for self-esteem are reversed. Furthermore, elderly people should be focused on self-actualization instead of security if Maslow's hierarchy truly represented a developmental sequence.

31. A—The ventromedial hypothalamus is involved with the recognition of the feeling of fullness. It is the primary satiety center in the hypothalamus. The VMH responds to leptin, made by adipose cells to assist in the regulation of energy balance by inhibiting hunger.

32. B—Ghrelin is the 'hunger hormone' and leptin is the 'satiety hormone'. Overproduction of ghrelin and underproduction of leptin lead to over-eating.

33. D—Priming is an implicit memory effect in which exposure to one stimulus (i.e., perceptual pattern) influences the response to another stimulus. The particular type of priming described here is known as affect priming.

34. A—The amygdala plays a central role in interpreting facial awareness and other social processing functions. Bilateral amygdala damage impairs recognition of emotions in facial expressions, especially fear. Impairment has been shown to occur regarding other negative emotions in addition to fear.

35. B—The two-factor theory of emotion, states that emotion is based on two factors: physiological arousal and cognitive label. The theory was created by researchers Stanley Schachter and Jerome E. Singer. According to the theory, when an emotion is felt, a physiological arousal occurs and the person uses the immediate environment to search for emotional cues to label the physiological arousal. This can sometimes cause misinterpretations of emotions based on the body's physiological state. When the brain does not know why it feels an emotion it relies on external stimulation for cues on how to label the emotion.

36. B—The periovulatory period of the female menstrual cycle is often associated with increased female receptivity and sexual motivation. During this stage in the cycle, estrogens are elevated in the female and progesterone levels are low. Ovulating heterosexual females also display preferences toward masculine faces and report greater sexual attraction to males other than their current partner.

37. A—The first step in cognitive mood repair is recognizing emotional upset. Gaining a better understand of the source of the negative mood can give the individual a sense of

control of his or her mood. The other choices represent strategies which subsequently may be employed.

38. C—Answering this question correctly is easy if you know the meaning of the term 'alexithymia'. One purpose of the question is to teach you that term if you don't already know the meaning. Alexithymia is a personality construct characterized by the subclinical inability to identify and describe emotions in the self. The core characteristics of alexithymia are marked dysfunction in emotional awareness, social attachment, and interpersonal relating. Alternatively, you could answer this question by ruling out the wrong answer choices based on neurotransmitter functions. For example, dopamine, not serotonin, is responsible for reward-seeking.

39. D—Emotions are complex and activate many brain regions. However, one aspect of emotion processing is the asymmetrical nature of emotional control and processing in the brain. A simplified, general rule is that the two hemispheres have a complementary specialization for control of different aspects of emotion. The left hemisphere primarily process "positive" emotions and right hemisphere primarily process "negative" emotions. There is also a reciprocal relationship between prefrontal cortex activity and amygdala activity. The left prefronatal cortex plays a role in approach behaviors (positively valenced emotions), while the left amygdala plays a role in withdrawal behaviors (negatively valenced emotions). When the left prefrontal cortex is activated the left amygdala shows a decrease in activation.

40. D—The strict definition of concordance is the probability that a pair of individuals will both have a certain characteristic, given that one of the pair has the characteristic.

41. A—Increasing levels of cholecystikinin, insulin, and leptin are all signals of satiety. Decreasing levels of ghrelin also act as a satiety signal. Ghrelin is the 'hunger hormone'. Its target is the lateral hypothalamus. Ghrelin is produced by ghrelinergic cells in the gastrointestinal tract. When the stomach is empty, ghrelin is secreted. When the stomach is stretched, secretion stops.

42. A—Operationalization is a process of defining the measurement of a phenomenon that is not directly measurable, though its existence is indicated by other phenomena. Operationalization is thus the process of defining a fuzzy concept so as to make it clearly distinguishable, measurable, and understandable in terms of empirical observations. Ekman and Friesen operationalized facial expressions and by extension, as well, emotional expression, although the latter is controversial.

43. C—The research is one of a number of studies supporting the hypothesis that there are independent neural systems in the brain, each handling a specific basic emotion. Fear and disgust are qualitatively different basic emotions. Evidence suggests that the insular cortex is the main neural structure involved in the emotion of disgust. (The insular cortex is a portion of the cerebral cortex folded deep within the lateral sulcus, the fissure separating the temporal lobe from the parietal and frontal lobes). On the other hand, he brain structure that is the center of most neurobiological events associated with fear is the amygdala.

44. C—Motive is the psychological state underlying the arousal of an organism to action toward a desired goal.

45. A—Although the passage cites additional evidence suggestive of a different conclusion, within the context of the discussion the downstream possition of the FFA in emotional processing is given as evidence to support the position that the FFA plays little role in

emotional processing. This position is posited using this evidence but then ultimately discredited in the passage.

46. C—In Plutchik's model the basic emotions are conceptualized as pairs of polar opposites. He suggested 8 primary bipolar emotions: joy versus sadness; anger versus fear; trust versus disgust; and surprise versus anticipation

47. A—In Lazarus' cognitive appraisal theory, emotion is a disturbance that occurs in the following order: 1) Cognitive appraisal—The individual assesses the event cognitively, which cues the emotion. 2) Physiological changes—The cognitive reaction starts biological changes such as increased heart rate or pituitary adrenal response. 3) Action—The individual feels the emotion and chooses how to react.

48. B—Premack's principle, or the relativity theory of reinforcement, states that more probable behaviors will reinforce less probable behaviors. In other words, you can use easier, more enjoyable tasks to reinforce more difficult, arduous tasks.

49. B—The adrenal medulla releases the catecholamines epinephrine and norepineprine. The adrenal cortex releases cortisol.

50. B—The results of the experiment can be explained in terms of cognitive dissonance, the mental stress (discomfort) experienced by a person who simultaneously holds two or more contradictory beliefs, ideas, or values. A person who experiences inconsistency tends to become psychologically uncomfortable, and so is motivated to try to reduce the cognitive dissonance that occurs. When making a difficult decision, there are always aspects of the rejected choice that one finds appealing and these features are dissonant with choosing something else. In other words, the cognition, "I chose X" is dissonant with the cognition, "There are some things I like about Y."

Identity and Personality

1. In the Strange Situation, an infant who did not exhibit distress on separation and ignored the caregiver on their return would be classified as

A. securely attached
B. anxious avoidant
C. anxious ambivalent
D. disorganized

2. In Piaget's developmental stage theory, the development of object permanence is one of the most important accomplishments of the

A. sensorimotor stage
B. pre-operational stage
C. concrete operational stage
D. formal operational stage

3. When the sole of her foot is stroked with a sharp object such as a pen, a baby's smaller toes will fan out and their big toe will dorsiflex slowly. This is known as the

A. Moro reflex
B. Rooting reflex
C. Babinski sign
D. Galant reflex

4. By all accounts Carlos is having a successful career as an insurance adjuster. However, at 45 years old Carlos feels like his life is going nowhere. Carlos repurposes his savings and enrolls in nursing school. According to Erikson, Carlos just might be accomplishing

A. wisdom
B. identity
C. generativity
D. ego integrity

5. Social intuitionists such as Jonathan Haidt argue that individuals often make moral judgments without weighing concerns such as fairness, law, human rights, or abstract ethical values. According to this point of view, such arguments could be considered post hoc rationalizations of intuitive decisions. If rational theories are not equipped to take into consideration how most individuals make moral decisions in their everyday lives, this would pose the most direct challenge to the developmental framework of

A. Piaget
B. Kohlberg
C. Erikson
D. Maslow

6. Researchers examined the anatomical changes that can be observed after monocular deprivation. They compared geniculocortical axonal arbors in monocularly deprived capuchin monkeys in the long term (4 weeks) to short term (6–7 days) during the first six months postnatally. They found that in the long term, monocular deprivation causes reduced branching at the end of neurons, while the amount of afferents allocated to the nondeprived eye increased. Even in the short term, the researchers found that geniculocortical neurons were similarly affected. These effects were not duplicated in older monkeys. These results support the idea that

A. Binocular cues are required for depth perception.
B. Increases in cortical growth occur as a consequence of stimulating environmental input.
C. A critical period exists for proper neural development of vision.
D. Long-term potentiation governs neuronal development in the cortical structures underlying vision.

7. After spending the morning brooding about the difficulties of being a parent and about how her children have many of the same annoying qualities as her ex-husband, a mother goes to the mall and buys her children toys and new clothes. Her behavior epitomizes which of the following Freudian defense mechanisms?

A. sublimation
B. repression
C. regression
D. reaction formation

8. Id, ego, and super-ego are the three parts of the psychic apparatus defined in Sigmund Freud's structural model of the psyche. Which of these three carry out both conscious and unconcious operations?

I. Id
II. Ego
III. Super-ego

A. I only
B. I and III
C. II and III
D. I, II, III

9. Studies have linked internal locus of control with improved physical health, mental health and quality of life in people with diverse medical conditions such as HIV, migraines, diabetes, kidney disease and epilepsy. These outcomes likely derive from

A. compliance with doctor's advice
B. a sense of acceptance regarding the unpredictability of events
C. taking responsibility for one's own health
D. the health effects of a positive emotional disposition

10. Which of the following research studes represents an idiographic approach?

I. Milgrim's experiments on obedience
II. A case study describing the ritual practices of an Amazonian tribe
III. The Asch conformity study
IV. The Little Albert experiment

A. II only
B. II and IV
C. I and III
D. I, III, and IV

11. Which of the following concepts directly references the extent or strength of one's belief in one's own ability to complete tasks and reach goals?

A. self-efficacy
B. self esteem
C. locus of control
D. achievement orientation

12. Which of the following statements best summarizes the findings of Harlow's surrogate mother experiment with rhesus macaques?

A. Maternal-infant attachment is positively reinforced by nurturing and feeding.
B. The need for contact comfort is a stronger drive in early development than feeding.
C. Mother-infant attachment occurs by imprinting within a critical period.
D. Infant monkeys possess an innate schema for the maternal figure.

13. Piaget asked children where on their body they would put an extra eye and why. Children around nine years old typically answered that the third eye should be located on the forehead. However, children in the eleven year old range typically suggested that a third eye should be placed on the hand for seeing around corners. The answer given by the older children typifies the abstract thinking and reasoning characterizing the

A. sensorimotor stage
B. pre-operational stage
C. concrete operational stage
D. formal operational stage

14. The MAOA gene reduces the production of monoamine oxidase A (MAOA). A 26-year-study found strong correlation between experience of childhood abuse and criminal or violent behavior in males with the MAOA gene. Which theorist provides a model of personality best equipped to describe the interaction of genetic and environmental factors underlying these behaviors?

A. Bandura
B. Freud
C. Piaget
D. Kohlberg

15. Marjorie has a huge crush on Stanley, but she won't admit it. She never does! Whenever she has a crush, her pattern is sublimation. Which of the following represents a way Marjorie might behave?

A. Claim that she hates Stanley.
B. Assert that it's actually Stanley that has a huge crush on her.
C. Work out at the gym for two hours every day.
D. Act with intense affection toward her pet dog Molly.

16. A baby hears a door close and responds by throwing out her arms and legs. What reflex is she demonstrating?

A. Babinski sign
B. grasping reflex
C. Moro reflex
D. rooting reflex

17. A study demonstrated that most three year old children are aware that an adult looking at a card from the opposite side of the child will be seeing a different view. What difficulty would this pose for Piaget's theory of cognitive development?

A. The study revealed a kind of conceptual thinking in three year olds inconsistent with the concrete operational stage in Piaget's theory.
B. A child should not be capable of transitive inference in the concrete operational stage.
C. It demonstrates the difficulty in operationalizing the shift from assimilation to accomodation in Piaget's theory.
D. Preoperational children may be less egocentric than Piaget believed.

18. Which of the following develops during the sensorimotor stage in Piaget's theory of cognitive development?

A. the ability to speak
B. symbolic play
C. object permanence
D. intuition

19. A child is shown two beakers both of which were identical and which contained the same amount of sand. Then the sand from the second beaker was poured into two taller, thinner glasses. The child was then asked whether there was the same amount of sand in the two new glasses as in the first beaker. A child who can answer "yes, there is still the same amount" has likely entered which stage of cognitive development according to Piaget?

A. sensorimotor
B. preoperational
C. concrete operational
D. formal operational

20. In which Freudian stage of development does the Oedipus complex occur?

A. oral
B. anal
C. phallic
D. genital

21. Which of the following did Piaget not consider within the capabilities of a child before the formal operational stage?

A. hypothetical thinking
B. inductive reasoning
C. transitive inference
D. class inclusion

22. In Erikson's stages of psychosocial development, "identity crisis" takes place in

A. adolescence
B. early adulthood
C. middle age
D. old age

23. A study was conducted of a large sample of adult identical and fraternal twins. Comparison of correlation of selected personality traits was conducted. For identical twins reared together, correlation for impulse control was found to be 0.41. For identical twins raised apart, correlation for impulse control was found to be 0.50. For fraternal twins raised together, correlation for impulse control was 0.06. For fraternal twins raised apart, correlation for impulse control was found to be 0.03. These findings suggest that

A. Social learning within the family environment is an important factor in determining impulse control as a personality trait in adults.
B. Shared environmental factors play little or no role in determining impulse control as an adult personality trait.
C. Approximately 50% of the variation in adult impulse control may be attributed to genetic factors.
D. Nonshared environmental factors do not play an mportant role in determining impulse control as an adult personality trait.

24. A form of regression may occur in which an adult reacts to stress by becoming intensely dependent on others for reassurance. Within the Freudian psychanalytic framework, this type of regression is characteristic of a person who is

A. projecting anxiety
B. experiencing castration anxiety
C. orally fixated
D. anally fixated

25. In Freud's model of the psychosexual development of the child, the _____ stage begins during the phallic stage when the child's Oedipus complex begins to dissolve.

A. oral
B. anal
C. latency
D. genital

26. On the way to Grandma's house, a mother tells her daughter, "Maryanne, when Grandma asks how you liked the sweater she sent for your birthday, please tell her that you liked it!" Maryanne replied, "But Mom, I don't think I should lie. Everyone knows it's wrong to lie." At what level in Kohlberg's stages of moral development is Maryanne?

A. preconventional
B. conventional
C. postconventional
D. formal moralism

27. A child learns her mother is called Mommy, so he calls other women mommy, such as the worker at his day-care. Which of the following does this best exemplify?

A. assimilation
B. accomodation
C. centration
D. decentration

28. Moirane, a 14 month old toddler, was playing happily in a neighbor's living room while her mother was sitting on the couch nearby. When her mother stepped out of the living room to use the restroom, Moirane started to cry. When her mother came back, Moirane crawled to her giggling. What type of attachment was Moirane displaying?

A. secure
B. anxious-avoidant
C. anxious-ambivalent
D. disorganized/disoriented

29. Piaget did a test to investigate cognition in children. He put children in front of a simple plaster mountain range and then asked them to pick from four pictures the view that he, Piaget, would see. The younger children before age seven picked the picture of the view they themselves saw. According to Piaget, the younger children were demonstrating

A. assimilation
B. concrete operational thought
C. conservation
D. egocentrism

30. Which of the choices below is more consistent with Piaget's approaches to cognitive development than the approaches of Vygotsky?

A. Students in the later elementary years learn best through hands-on discovery learning.
B. Through social interactions, the child moves toward more individualized thinking.
C. The teacher should provide the learner with hints or clues for problem solving.
D. The language of a certain group of people indicates their cultural beliefs and value system.

31. The humanistic psychotherapeutic approach of Carl Rogers attempts to put the therapist in closer contact with a person by listening to the person's report of their recent subjective experiences, especially emotions of which the person is not fully aware. For example, in relationships the problem at hand is often not based around what actually happened but, instead, based around the perceptions and feelings of each individual in the relationship. Which of the following terms best distinguishes this type of approach?

A. psychoanalytic
B. phenomenological
C. topographic
D. cognitive-behavioralist

32. Because her parents are very accomplished academically, Julia believes that she ought to be one of the top students in her high school. From this information Julia's habit of procrastinating with her school-work is a natural outcome within which of the following frameworks?

A. Vygotsky's social development theory
B. Freudian psychoanalytic theory
C. Higgins' self-discrepancy theory
D. Bandura's theory of learning

33. Which of the following are the Big Five personality traits as identified by Jeffrey Grey?

A. openness to experience, conscientiousness, extraversion, agreeableness, neuroticism
B. warmth, emotional stability, social boldness, sensitivity, perfectionism
C. rule consciousness, vigilance, openness to experience, liveliness, neuroticism
D. abstractedness, dominance, apprehension, kindness, rule consciousness

34. A standardized psychometric test of adult personality and psychopathology containing hundreds of test items, originally with ten scales: Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Femininity/Masculinity, Paranoia, Psychasthenia, Schizophrenia, Mania, and Social Introversion. Which exam fits this description?

A. Myers–Briggs Type Indicator
B. NEO Personality Inventory
C. Minnesota Multiphasic Personality Inventory
D. Rorschach Test

35. All of the following psychologists are considered to have developed ideas strongly dependent on the theories of Sigmund Freud except

A. Karen Horney
B. Alfred Adler
C. Erik Erikson
D. Jean Piaget

36. When Marcus is thinking in terms of his student identity, the personality ratings he reports reflect a high degree of agreeableness and conscientiousness, but when he is thinking in terms of his home-life, the personality ratings he reports reflect a high degree of neuroticism. These results point to a particular problem in the projective validity of personality trait measures, namely that

A. longitudinal comparisons are time dependent
B. personality traits may vary across social domains
C. personalities are variegated and are not to be conceptualized through bipolar characterizations
D. inconsistency in personality traits is quantifiable

37. Juanita is disgusted. Every night after dinner her children abandon her in the kitchen to do the dishes while they go play video games. She is so angry she slams a stack of plates down in the sink, breaking two of them. This represents which ego defense mechanism?

A. reaction formation
B. repression
C. projection
D. displacement

38. A minister while giving his blessings to a newly married couple said, "May you two have a sexful life ahead." He immediately corrected it to "successful" Freud might interpret this slip of the tongue as occurring due to the interference of subdued thought or wish at the _____ level.

A. preconscious
B. subconscious
C. metaconscious
D. unconscious

39. Which of the following is not a projective test?

A. Rorschach
B. Thematic Apperception Test
C. Myers–Briggs Type Indicator
D. Word Association Test

40. In Adlerian psychology, an adult may experience a feeling of inferiority arising from a failure to attain which of the following?

A. a fictional final goal
B. self-actualization
C. congruity between actual self & ideal self
D. self-realization

41. The _____ stage of prenatal development extends from conception until approximately two weeks.

A. germinal
B. zygotic
C. embryonic
D. fetal

42. Which of the following theorists argued that psychological and cognitive development does not progress through stages, but rather that the developmental process that begins at birth and continues until death is too complex for a stage theory to encompass?

A. Lev Vygotsky
B. Jean Piaget
C. Erik Erikson
D. Sigmund Freud

43. Some theorists have argued that Piaget's stages were merely a heuristic for operationalizing his theory of equilibration. If this is the case, which of the following would best describes the conditions for progress to the next stage within Piaget's developmental framework?

A. A child becomes aware of the shortcomings in their existing thinking and experiences cognitive conflict.
B. A child is satisfied with their mode of thought and therefore is in a state of equilibrium.
C. A child transforms incoming information so that it fits within their existing schema.
D. A process of assimilation occurs in which their thinking adapts to incoming information.

44. Responding to the theoretical view of cognition in behavioralism as structures associated primarily with the brain as stimulus – response processes, Vygotsky argued that the relationship between a human subject and an object is never direct. Instead the relationship is

A. shaped by family experiences during infancy
B. determined by a psychosocial crisis of conflicting forces which depend on the life stage
C. mediated by tools and signs within a cultural and social context
D. characterized in early childhood by a hallucinatory blurring of subject-object boundaries

45. Empirical evidence seems to show that those people who form the most coherent self-concept in adolescence are those who are most able to make intimate attachments in early adulthood. These results are predicted by the developmental framework of which of the following theorists?

A. Jean Piaget
B. Erik Erikson
C. Abraham Maslow
D. Lawrence Kohlberg

46. Corporate directors have a legal duty to maximize corporate profits and "shareholder value". The business judgment rule says that when shareholders claim a fiduciary breach, they must show fraud, illegality, conflict of interest and or negligence. Corporate Social Responsibility is a form of corporate self-regulation integrated into a business model. CSR policy functions as a self-regulatory mechanism whereby a business monitors and ensures its active compliance with the spirit of the law, ethical standards and national or international norms. In competitive markets cost-benefit analysis of CSR initiatives can be examined using a resource-based view. Sustainable competitive advantage requires that resources be valuable (V), rare (R), inimitable (I) and non-substitutable (S). A firm introducing a CSR-based strategy might only sustain high returns on their investment if their CSR-based strategy could not be copied. However, should competitors imitate such a strategy, that might increase overall social benefits. Firms that choose CSR for strategic financial gain are also acting responsibly. It is an interesting exercise to interpret the logic of a "corporate person" implementing a CSR initiative as cognitive logic in terms of Kohlberg's stages or substages of moral development. A program of Corporate Social Responsibility epitomizes

A. instrumental relativist morality
B. conventional morality
C. social contract driven morality
D. postconventional morality

47. Within Piaget's theory of cognitive development, during the sensorimotor stage, infants gain knowledge of the world from the physical actions they perform within it. Which of the following patterns of cognition develops through secondary circular reactions during this stage?

A. passive reactions, caused by classical or operant conditioning
B. differentiations between ends and means
C. using primitive symbols to form enduring mental representations
D. picturing objects without having the object in front of them

48. In emryonic development, the _____ forms during gastrulation and soon after induces the formation of the neural plate (neurulation), synchronizing the development of the neural tube.

A. endoderm
B. alar plate
C. notochord
D. neural groove

49. Which of the following personality test is based on a typology theory proposed by Carl Jung?

A. Myers–Briggs Type Indicator
B. NEO Personality Inventory
C. Minnesota Multiphasic Personality Inventory
D. 16PF Questionnaire

50. Using interview and questionnaire data from a longitudinal study on 93 adolescents, a study tested whether ego development in middle adolescence predicts intimacy in emerging adulthood. Second, the authors examined whether identity achievement at the transition to adulthood mediates this link. Results revealed integrative identity (age 15) strongly mediated intimacy in romantic relationships (age 25). No paths were found from earlier intimacy to later ego development. The study confirms

A. Freud's ideas regarding the unsuccessful resolution of the Oedipal complex
B. Maslow's ideas regarding the order of the hierarchy of needs
C. Adler's ideas of the importance of the development of self-esteem in resolving inferiority crisis
D. Erikson's ideas on the developmental ordering of identity and intimacy

Answer Key
Identity and Personality

1. **B—**The absence of distress when the caregiver leaves and ignoring of the caregiver upon return are signs of anxious-avoidant attachment. On the other hand, with the anxious-ambivalent pattern, there is distress even before separation, and the child is clingy and difficult to comfort on the caregiver's return.

2. **A—**According to Piaget, the development of object permanence is one of the most important accomplishments of the sensorimotor stage. Object permanence is a child's understanding that objects continue to exist even though he or she cannot see or hear them. Peek-a-boo is a good test for that. By the end of the sensorimotor period, children develop a permanent sense of self and object.

3. **C—**Babinski sign is also known as the plantar reflex. The Moro reflex is also sometimes refered to as the startle reaction. In the Moro reflex, the legs and head extend while the arms jerk up and out with the palms up and thumbs flexed. The rooting reflex assists in the act of breastfeeding. A newborn infant will turn its head toward anything that strokes its cheek or mouth, searching for the object by moving its head in steadily decreasing arcs until the object is found. The Galant reflex, also known as Galant's infantile reflex, is present at birth and fades between the ages of four to six months. When the skin along the side of an infant's back is stroked, the infant will swing towards the side that was stroked.

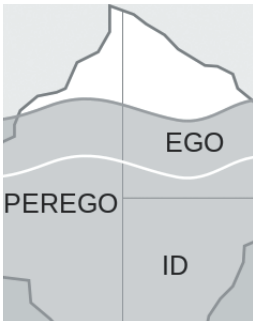
4. **C—**According to Erikson the conflict in late adulthood is between generativity and stagnation. The existential question is "Can I make my life count?" During middle age the primary developmental task is one of contributing to society and helping to guide future generations. When a person makes a contribution during this period, perhaps by raising a family or working toward the betterment of society, a sense of generativity, in other words, a sense of productivity and accomplishment, results. In contrast, a person who is self-centered and unable or unwilling to help society move forward develops a feeling of stagnation according to Erikson.

5. **B—**Kohlberg's stages of moral development are based on the assumption that humans are inherently communicative, capable of reason, and possess a desire to understand others and the world around them. Especially to reach the stages of post-conventional morality depends on formal reasoning. For such abstract reasoning to represent post-hoc rationalization would pose a direct challenge to Kohlberg's theories. Piaget would be a pretty decent second best answer for this question, but in Piaget's theory the development of moral principles is seen more as an inductive rational process through peer-peer interaction and observation. It has rationalist, universalist elements, but Piaget's theory is more compatible with intuitive modes of reasoning than Kohlberg's model.

6. **C—**A critical period is a maturational stage in the lifespan of an organism during which the nervous system is especially sensitive to certain environmental stimuli. If, for some reason, the organism does not receive the appropriate stimulus during this "critical period" to learn a given skill or trait, it may be difficult, ultimately less successful, or even impossible, to develop some functions later in life. Functions that are indispensable to an organism's survival, such as vision, are particularly likely to develop during critical periods.

7. **D—**Reaction formation is a defense mechanism in which emotions and impulses which are anxiety-producing or perceived to be unacceptable are mastered by exaggeration of the directly opposing tendency.

8. **C—**The ego and super-ego each carry out both conscious and unconscious processes.



The iceberg metaphor can be helpful to understanding the structure of the Freudian psyche.

9. **C—**Locus of control is the degree to which people believe that they have control over the outcome of events in their lives, as opposed to external forces beyond their control.

10. **A—**The contrast is between two approaches to research epitomized by the terms nomothetic and idiographic. Idiographic describes the study of the individual or a unique social group with properties setting him/her apart from other individuals or groups. Nomothetic describes the study of classes or cohorts of individuals. Here the subject is seen as an exemplar of a population and their corresponding personality traits and behaviours. It is easy to see that the study of a particular Amazonian tribe is an idiographic study and that the Milgram and Asch studies are nomothetic, where variations within selected and assigned experimental groups are used to derive empirical propositions. Regarding the Little Albert study, which proved that classical conditioning worked on humans. although there was only one experimental subject (an infant who was conditioned to have an irrational fear), the purpose of the experiment was nomothetic, to formulate a general, empirical proposition that would apply to the broader population.

11. **A—**Self efficacy, self-esteem and locus of control are related, though different, concepts. Self-efficacy is the perception of one's own ability to reach a goal. Self-esteem is the sense of self-worth. For example, a person who is a terrible rock climber would probably have poor self-efficacy with regard to rock climbing, but this will not affect self-esteem if the person doesn't rely on rock climbing to determine self-worth. On the other hand, one might have enormous confidence with regard to rock climbing, yet set such a high standard, and base enough of self-worth on rock-climbing skill, that self-esteem is low. Someone who has high self-efficacy in general but is poor at rock climbing might have misplaced confidence, or believe that improvement is possible. Locus of control is the degree to which people believe that they have control over the outcome of events in their lives, as opposed to external forces beyond their control.

12. **B—**Harlow created inanimate surrogate mothers for the rhesus infants from wire and wood.Each infant became attached to its particular mother, recognizing its unique face and preferring it above all others. Harlow next chose to investigate if the infants had a preference for bare-wire mothers or cloth-covered mothers. For this experiment, he presented the infants with a clothed mother and a wire mother under two conditions. In one situation, the wire mother held a bottle with food, and the cloth mother held no food. In the other situation, the cloth mother held the bottle, and the wire mother had nothing. Overwhelmingly, the infant macaques preferred spending their time clinging to the cloth mother. Even when only the wire mother could provide nourishment, the monkeys visited her only to feed. Harlow concluded that there was much more to the mother-infant relationship than milk, and that this "contact comfort" was essential to the psychological development and health of infant monkeys and children.

13. **D—**The final stage in Piaget's theory of cognitive development is the formal operational stage (adolescence and into adulthood, roughly ages 11 to approximately 15-20). Intelli-

gence is demonstrated through the logical use of symbols related to abstract concepts. This form of thought includes "assumptions that have no necessary relation to reality." At this point, the person is capable of hypothetical and deductive reasoning. During this time, people develop the ability to think about abstract concepts. Piaget stated that "hypothetico-deductive reasoning" becomes important during the formal operational stage. This type of thinking involves hypothetical "what-if" situations that are not always rooted in reality, i.e. counterfactual thinking. It is often required in science and mathematics.

14. A—Bandura's theory of reciprocal determinism states that behavior and conduct of a person is influenced by his social environment as well as personal factors. Cognition, behavior, and environment coexist and influence each other and result in your personality. Of the choices, Bandura's theoretical framework is the one best equipped to encompass a description of the factors underlying the results of the study.

15. C—Sublimation is a mature type of defense mechanism where impulses or idealizations are unconsciously transformed into socially acceptable actions or behavior. The other choices correspond to other defense mechanisms. Choice 'A' represents reaction formation. Choice 'B' represents projection. Choice 'D' represents displacement.

16. C—The Moro reflex is sometimes referred to as the startle reaction, startle response, startle reflex or embrace reflex. The Moro reflex is present at birth, peaks in the first month of life, and begins to disappear around 2 months of age. It is likely to occur if the infant's head suddenly shifts position, the temperature changes abruptly, or they are startled by a sudden noise. The legs and head extend while the arms jerk up and out with the palms up and thumbs flexed. Shortly afterward the arms are brought together and the hands clench into fists, and the infant cries loudly.

17. D—To be able to see another person's perspective is a hallmark of the concrete operational stage. Three year olds are squarely within the preoperational stage in Piaget's theory.

18. C—The development of object permanence is one of the most important accomplishments of the sensorimotor stage. The preoperational stage begins when the child learns to speak at about two years of age. Symbolic play and intuitive thinking are hallmarks of the preoperational stage.

19. C—Conservation tasks test a child's ability to see that some properties are conserved or invariant after an object undergoes physical transformation. The ability to perform conservation tasks is a hallmark of the concrete operational stage, which begins at approximately age 7, according to Piaget.

20. C—The Oedipus complex occurs in the third—phallic stage (ages 3–6)—of the five psychosexual development stages: (i) the oral, (ii) the anal, (iii) the phallic, (iv) the latent, and (v) the genital. In each of these stages, the source of libidinal pleasure is in a different erogenous zone of the body. Freud believed that the Oedipus complex is a desire for the parent in both males and females. He deprecated the term "Electra complex", which was introduced by Jung in regard to the Oedipus complex manifested in young girls. Freud further proposed that boys and girls experience the complex differently: boys in a form of castration anxiety, girls in a form of penis envy.

21. A—The capability for hypothetical reasoning (along with deductive reasoning) is one of the hallmarks of the stage of fomal operations.

22. A—Erikson is credited with coining the term "identity crisis." to mark the transition from childhood to adulthood during adolescence, a turning point in human development challenged to achieve reconciliation between 'the person one has come to be' and 'the person society expects one to become'.

23. B—Two aspects of these results are most striking. The first is the importance of genetic factors as evidenced by the much higher correlations among identical twins than fraternal twins. (To find out how much one variable is accounted for by another variable, we square the correlation. A 0.50 correlation with identical twins means that approximately 25% of the difference in impulse control among individuals may be accounted to genetic factors). The second striking aspect of these results is now little difference being raised together or raised apart made in the correlation values. In other words, shared environmental factors appear to play little or no role in this adult personality trait. This finding, which has been shown with other traits as well, is one of the most counter-intuitive findings of modern psychological research.

24. C—Freud proposed that if the nursing child's appetite were thwarted the anxiety would persist into adulthood as a neurosis. Therefore, an infantile oral fixation (oral craving) would be manifest as an obsession with oral stimulation; yet, if weaned either too early or too late, the infant might fail to resolve the emotional conflicts of the oral, first stage of psychosexual development and he or she might develop a maladaptive oral fixation. The infant who is neglected (insufficiently fed) or who is over-protected (over-fed) in the course of being nursed, might become an orally-fixated person. Said oral-stage fixation might have two effects: (i) the neglected child might become a psychologically dependent adult continually seeking the oral stimulation denied in infancy, thereby becoming a manipulative person in fulfilling his or her needs, rather than maturing to independence; (ii) the over-protected child might resist maturation and return to dependence upon others in fulfilling his or her needs.

25. C—The stages are:
the 'oral phase' (first stage)
the 'anal phase' (second stage)
the 'phallic phase' (third stage)
the 'latency phase' (fourth stage)
the 'genital phase' (fifth stage)

The latency phase originates during the phallic stage when the child's Oedipus complex begins to dissolve. The child realizes that his/her wishes and longings for the parent of the opposite sex cannot be fulfilled and will turn away from these desires.

26. B—Conventional morality is characterized by an acceptance of society's conventions concerning right and wrong. At this level an individual obeys rules and follows society's norms even when there are no consequences for obedience or disobedience. Adherence to rules and conventions is somewhat rigid, however, and a rule's appropriateness or fairness is seldom questioned.

27. A—To Piaget, assimilation is the process of fitting new information into pre-existing cognitive schemas. Assimilation occurs when new experiences are reinterpreted to fit into old ideas. It occurs when humans are faced with new or unfamiliar information and refer to previously learned information in order to make sense of it. In contrast, accommodation is the process of taking new information in one's environment and altering pre-existing schemas in order to fit in the new information. This happens when the existing schema (knowledge) does not work, and needs to be changed to deal with a new object or situation.

28. A—A toddler who is securely attached to his or her parent (or other familiar caregiver) will explore freely while the caregiver is present, typically engages with strangers, is often visibly upset when the caregiver departs, and is generally happy to see the caregiver return.

29. D—Piaget claimed that early childhood is the time of pre-operational thought, characterized by children's inability to process logical thought. According to Piaget, one of the main obstacles to logic that children possess includes centration, "the tendency to focus on one aspect of a situation to the exclusion

of others." A particular type of centration is egocentrism – literally, "self-centeredness." Piaget claimed that young children are egocentric, capable of contemplating the world only from their personal perspective. For example, a three-year-old presented his mother a model truck as her birthday present; "he had carefully wrapped the present and gave it to his mother with an expression that clearly showed he expected her to love it." The three-year-old boy had not chosen the present out of selfishness or greediness, but he simply failed to realize that, from his mother's perspective, she might not enjoy the model car as much as he would.

30. A—In Piaget's theory of cognitive development, children develop through a series of stages. While the teacher has an important role, such as to help the child overcome egocentricity in moving from the preoperational stage to the stage of concrete operations, development is seen as occuring more along the lines of acting out a plan of 'nature' than responding to 'nurture'. Social and cultural influences do not have the emphasis they have in Vygotsky's theory.

31. B—Phenomenology studies subjective experience. With roots in philosophy, the influence of phenomenology within psychology has figured most prominently in the history of the humanistic movement. The therapeutic approach of Carl Rogers is phenomenological in that it places its central emphasis on the subjective experience of the client.

32. C—Within Higgins' self-discrepancy theory, a discrepancy between the the actual (own) and ought (own) self-guides occurs when one's view of their actual attributes do not meet the expectations of what they themselves think they ought to possess. This discrepancy is associated with the presence of negative outcomes and is characterized by agitation-related emotions such as self-dissatisfaction. Specifically, discrepancy in the actual/ought domain from the own perspective, is a strong predictor of procrastination. Avoidance is the common theme. The actual/ought self-regulatory system responds through avoidance.

33. A—The Big Five personality traits, also known as the five factor model, is a model based on common language descriptors of personality. These descriptors are grouped together using a statistical technique called factor analysis. This widely examined theory suggests five broad dimensions used by some psychologists to describe the human personality and psyche. The five factors have been defined as openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. The mnemonic OCEAN can help you remember the Big Five.

34. C—The test described by the prompt is the Minnesota Multiphasic Personality Inventory. The Myers-Briggs Type Indicator assigns personality type based on four dichotomies such as Introversion/Extroversion or Feeling/Thinking. The NEO Personality Inventory distinguishes personality based on the Big Five personality traits. The Rorschach test is a projective psychological test in which subjects' perceptions of inkblots are recorded and then analyzed using subjective interpretation.

35. D—Horney, Adler, and Erikson are included among the neo-Freudians, a group of loosely linked American theorists of the mid-twentieth century, who were all influenced by Sigmund Freud, and who extended his theories, often in social or cultural directions. Freud's developmental milestones are primarilly related to sexual development, but Jean Piaget's approach to development is based on cognitive development, ie. the mode and process of learning how to process stimuli, interact with the environment, and employ reason.

36. B—Although the other choices are not terrible answers, choice 'B' most directly addresses the issue of the question, the effects of context on personality measures.

37. D—Displacement shifts sexual or aggressive impulses to a more acceptable or less threatening target; redirecting emotion to a safer outlet; separation of emotion from its real object and redirection of the intense emotion toward someone or something that is less offensive or threatening in order to avoid dealing directly with what is frightening or threatening.

38. D—The purpose of this question is to help you grasp that although 'unconscious' and 'subconscious' are used synonymously in popular discussions of psychology, 'unconscious' is the term used in the field of psychology.

39. C—A projective test is a personality test designed to let a person respond to ambiguoustimuli, presumably revealing hidden emotions and internal conflicts projected by the person into the test. This is sometimes contrasted with a so-called "objective test" or "self-report test," such as the Myers-Briggs Type Inventory, in which responses are analyzed according to a presumed universal standard (for example, a multiple choice exam), and are limited to the content of the test. In the Rorschach inkblot test, a subject is shown a series of ten irregular but symmetrical inkblots, and asked to explain what they see. In the Thematic Apperception Test, an individual views ambiguous scenes of people, and is asked to describe various aspects of the scene. A Word Association Test is a technique whereby words presented to patients elicit other word responses that reflect related concepts in the patients' psyche.

40. A—Classical Adlerian psychology makes a distinction between primary and secondary inferiority feelings. A primary inferiority feeling is said to be rooted in the young child's original experience of weakness, helplessness and dependency. A secondary inferiority feeling relates to an adult's experience of being unable to reach a subconscious, reassuring fictional final goal of subjective security and success to compensate for the inferiority feelings. The perceived distance from that reassuring goal would lead to a negative/depressed feeling that could then prompt the recall of the original inferiority feeling. This composite of inferiority feelings could be experienced as overwhelming. The reassuring goal invented to relieve the original, primary feeling of inferiority which actually causes the secondary feeling of inferiority is the "catch-22" of this dilemma, where the desperate attempt to obtain therapeutic reassurance and delivery from a depressing feeling of inferiority and worthlessness repeatedly fails. This vicious cycle is common in neurotic lifestyles.

41. A—The germinal stage extends from fertilzation until implantation at approximately two weeks. Some authors consider implanation to mark the beginning of the embryonic stage, while other authors consider that the embryonic stage begins at conception with the portion prior to implantation being the germinal stage of the embryonic period.

42. A—Piaget, Freud, and Erikson all presented stage theories dividing child development into distinct stages which are characterized by qualitative differences in thought and behavior. In other words, this question can be answered easily by elimination. Vygotsky did not present a stage theory. Vygotsky supported a continuous view of development in which development occurs with gradual and ongoing changes throughout the life span

43. A—According to Piaget, development is driven by the process of equilibration. Equilibration encompasses assimilation and accommodation. Assimilation is how humans perceive and adapt to new information. It is the process of fitting new information into pre-existing cognitive schemas. Assimilation in which new experiences are reinterpreted to fit into, or assimilate with, old ideas. It occurs when humans are faced with new or unfamiliar information and refer to previously learned information in order to make sense of it. In contrast, accommodation is the pro-

cess of taking new information in one's environment and altering pre-existing schemas in order to fit in the new information. This happens when the existing schema (knowledge) does not work, and needs to be changed to deal with a new object or situation. When children are satisfied with their mode of thought they are in a state of equilibrium. Then, they become aware of the shortcomings in their existing schema and experience cognitive conflict. This leads to the adoption of a more sophisticated mode of thought that eliminates the shortcomings of the old one and establishes a new equilibrium.

44 **C—**Vygotsky's important insight into the dynamics of consciousness was that it is essentially subjective and shaped by the history of each individual's social and cultural experience.

45 **B—** Erikson identified a series of eight stages, in which a healthy developing individual should pass through from infancy to late adulthood. All stages are present at birth but only begin to unfold according to both a natural scheme and one's ecological and cultural upbringing. In each stage, the person confronts, and hopefully masters, new challenges. Each stage builds upon the successful completion of earlier stages. The challenges of stages not successfully completed may be expected to reappear as problems in the future.

46 **A—**The implementation of a CSR program is justified in terms of return on investment. Although the advocates of a CSR program within a corporation may be acting through cognitive impetus of conventional or post-conventional morality, from the 'perspective' of the corporation the forms of justifications are preconventional. In the instrumentalist-relativist substage of Kohlberg's preconventional morality, the person is said to judge the morality of an action based on how it satisfies the individual needs of the doer.

47 **B—**Secondary circular reactions describe the interaction of the infant and objects in their environment during the period from 4-8 months. Development of habits occurs. Secondary circular reactions, or the repetition of an action involving an external object begin. For example, moving a switch to turn on a light repeatedly. The differentiation between means and ends occurs. This is perhaps one of the most important stages of a child's growth as it signifies the dawn of logic.

48 **C—**In animal anatomy, the notochord is a flexible rod made out of a material similar to cartilage. Embryos of vertebrates still form transient notochord structures today during the gastrulation phase of development. The notochord is found ventral to the neural tube. Notogenesis is the development of the notochord by the epiblasts that make up the floor of the amnion cavity. The notochord arises from the bilaminar embryonic disk. The notochord forms during gastrulation and soon after induces the formation of the neural plate (neurulation), synchronizing the development of the neural tube.

49 **A—**The MBTI is based on the typological theory proposed by Carl Jung, who had speculated that there are four principal psychological functions by which humans experience the world – sensation, intuition, feeling, and thinking – and that one of these four functions is dominant for a person most of the time.

50 **D—**In Erikson's developmental theory the crisis of identity vs. role confusion is strongest adolescence, 13–19 years. Intimacy vs. isolation is strongest in early adulthood, 20-39 years. Intimacy refers to a person's ability to relate to another human being on a deep, personal level. Erikson believed that an individual who has not developed a sense of identity usually will fear a committed relationship and may retreat into isolation.

Abnormal Psychology

1. A behavioral or mental pattern that causes suffering or a poor ability to function in life may be diagnosed by a mental health professional as a

A. neurosis
B. mental disorder
C. personality disorder
D. psychosis

2. After suffering breathing problems and chest-pains while on duty, a Navy midshipman was told he had suffered a panic attack. Since that time, going to sea became extremely difficult. He was worried about whether he'd have another attack far from land. He discovered a similar anxiety in the shopping center and on the subway. Which of the following disorders is likely to develop without treatment?

A. social anxiety disorder
B. agoraphobia
C. generalized anxiety disorder
D. obsessive-compulsive disorder

3 The most common type of anxiety disorder is

A. specific phobia
B. social anxiety disorder
C. generalized anxiety disorder
D. panic disorder

4. Carl Jung coined the term "synchronicity" to describe meaningful coincidences that could not be explained scientifically. In a famous case, Jung attributed the rare appearance of a golden scarab at his office window shortly after his patient recalled dreaming of the insect, as a sign that the dreamer was making progress in accessing her subconscious. Jung believed that such demonstrations of synchronicity meant that a person had tapped into the collective unconscious, a universal knowledge beyond our everyday awareness that is shared by everyone. How might modern psychiatric medicine classify Jung's experience?

A. hallucination
B. delusion of reference
C. somatic delusion
D. pareidolia

5. Bill is a 28 year-old unmarried male. He has a very demanding, stressful job as an associate in a large law firm. Bill is extremely conscientious and self-critical if he feels like he is falling short. He fears he will not make partner in the firm. For the past month Bill has felt unusually fatigued, often staying in bed until noon on the weekends. He has been having difficulty concentrating at work, and has been acting irritably. Bill called in sick on several occasions to stay in bed all day, watching TV or sleeping. Bill likely suffers from which disorder?

A. dysthymia
B. bipolar disorder
C. generalized anxiety disorder
D. major depressive disorder

6. Which of the following statements are true regarding all personality disorders?

I. An enduring pattern of behavior that deviates markedly from the expectations of the individual's culture
II. Onset can be traced back at least to adolescence or early adulthood
III. The pattern is stable and of long duration
IV. The pattern is inflexible and pervasive across a broad range of personal and social situations

A. II only
B. I, II and III
C. I, III and IV
D. I, II, III and IV

7. Which of the following thoughts and/or behaviors are typical of individuals with obsessive-compulsive personality disorder?

A. excessive hand washing
B. repeating activities a certain amount of times or counting
C. experiencing distress when unable to control a situation
D. repeatedly reviewing a past event

8. The doctor asked Martin "How are you feeling today?" and Martin said, "How are you feeling today? How are you feeling today?" This symptom is called

A. echopraxia
B. clanging
C. palilalia
D. echolalia

9. Marjorie worries constantly about her father who is in a nursing home. This worry has been troubling her for the past year. For at least six months she has felt constantly restless and is very tired. When she's at her desk at work, she constantly wants to get up and pace, and she is having trouble thinking straight. Marjorie likely suffers from which disorder?

A. bipolar depression
B. borderline personality disorder
C. generalized anxiety disorder
D. atypical depression

10. When Regina accepted the transfer to the home office, she considered it a wonderful opportunity to work for Evelyn, one of the rising stars of the company. However, Evelyn is very manipulative and self-serving. She seems to feel nothing and lacks a conscience. She's impulsive and deceptive. Although Regina is not qualified to make a diagnosis, it appears that Evelyn may suffer from a disorder known as _____ personality.

A. psychopathic
B. sociopathic
C. antisocial
D. borderline

11. A somatic symptom disorder involving the actual loss of bodily function such as blindness, paralysis, and numbness due to excessive anxiety would have been called hysteria in the nineteenth century. In the DSM-V, such a disorder is termed

A. conversion disorder
B. illness anxiety disorder
C. body dysmorphic disorder
D. Munchausen syndrome

12. Experimental research in cognitive science challenges claims concerning the validity of the construct underlying dissociative mental disorders based on a defense mechanism in which cognitions are excluded from consciousness. Even the claimed aetiological link between trauma/abuse and dissociation has been questioned. An alternative model proposes a perspective on dissociation based on a recently established link between a labile sleep–wake cycle where mentation occurs in a dream-like manner producing memory errors, cognitive failures, problems in attentional control, and difficulties in distinguishing fantasy from reality. In other words, the conclusions of these experiments challenge the model of the dissociation construct based on

A. actual self vs. ought self disparity
B. Freudian repression
C. identity crisis
D. personality disorder

13 A 62-year-old female consulted a clinic requesting treatment for general malaise and lack of volition that had persisted for 2 years. She was not regarded as having senile dementia. She was a housewife and barely able to perform housework. Based on the information presented, her status was likely diagnosed as

A. major depressive disorder
B. general anxiety disorder
C. dysthymia
D. agoraphobia

14. Anton is a cognitive psychologist in clinical practice. During a therapy session, Anton made a note when his client said, "I feel worthless and ugly" and another note after his client said, "People ignore me all the time." Which of the following statements did Anton record allowing him to provisionally confirm Beck's cognitive triad of depression?

A. "I've failed at everything I've ever tried."
B. "My life is never going to get better."
C. "I've never been lucky."
D. "I feel as though life is passing me by."

15. Which of the following is a positive symptom of schizophrenia?

A. disordered thought
B. flat affect
C. mania
D. anhedonia

16. The _____ published by the American Psychiatric Association (APA), offers a common language and standard criteria for the classification of mental disorders.

A. Global Assessment of Functioning (GAF) Scale
B. Diagnostic and Statistical Manual of Mental Disorders (DSM)
C. International Statistical Classification of Diseases and Related Health Problems (ICD)
D. Psychodynamic Diagnostic Manual (PDM)

17. _____ disorder occurs when an individual is unable to cope with a stressful event or a major life event. People with this disorder normally have symptoms that depressed people do, such as general loss of interest, feelings of hopelessness and crying.

A. anxiety
B. extreme stress
C. post-traumatic stress
D. adjustment

18. A core concept in modern psychiatry since DSM-III was released in 1980, is the categorical separation of mood disorders from schizophrenia, known as the Kraepelinian dichotomy. The Kraepelinian dichotomy continues to be used in DSM-5 despite having been challenged by data from modern psychiatric genetics. For example, there is now evidence of a significant overlap in the genetics of schizophrenia and bipolar disorder. In addition to bipolar disorder with a history of psychosis, for which of the following disorders do diagnostic criteria include significant, enduring symptoms bridging the Kraepelian dichotomy?

A. major depression
B. dissociative identity disorder
C. obsessive-compulsive disorder
D. schizoaffective disorder

19. In which of the following respects does Asperger's syndrome differ from other conditions within the range of autism spectrum disorder?

I. absence of significant delay in language development
II. absence of significant delay in cognitive development
III. presence of stereotyped or repetitive behaviors
IV. difficulties in social interaction

A. I only
B. I and II
C. I, II, and IV
D. I, II, III, and IV

20. A hospital patient is observed to hold rigid poses for hours while ignoring any external stimuli. At other times he shows stereotyped, repetitive movements. The only instances in which he has been observed to speak have been to repeat what a doctor or nurse says. Which of the following is a defensible diagnosis based on the above information?

A. catatonic schizophrenia
B. encephalitis
C. benzodiazepene withdrawal
D. catatonia

21. Up to 80% of clients seeking clinical treatment for borderline personality disorder are women It has been argued that the most probable explanation for gender differences in clinical samples is that women are more likely to develop the kind of symptoms that bring patients in for treatment. Twice as many women as men in the community suffer from depression. In contrast, there is a preponderance of men meeting criteria for substance abuse and psychopathy, and males with these disorders do not necessarily present in the mental health system. Men and women with similar psychological problems may express distress differently. Men tend to drink more and carry out more crimes. Women tend to turn their anger on themselves, leading to depression as well as the cutting and overdosing that characterize BPD. Thus, anti-social personality disorder and borderline personality disorders might derive from similar underlying pathology but present with symptoms strongly influenced by gender. There is specific evidence that men with BPD may not seek help. In a study of completed suicides among people aged 18 to 35 years, 30% of the suicides involved individuals with BPD (as confirmed by psychological autopsy, in which symptoms were assessed by interviews with family members). Most of the suicide completers were men, and very few were in treatment.

Which of the following statements is consistent with the evidence presented in the above passage?

A. Men are less likely to be treated for symptoms of BPD such as substance abuse than treated for BPD itself.
B. The symptoms of BPD and ASPD do not share an underlying aetiology.
C. Men are less likely to seek or accept treatment for ASPD than women.
D. While up to 80% of BPD patients are women, that may not be true in the community

22. A child who has a family history of depression and who has been exposed to a particular circumstance, such as exclusion or rejection by his or her peers, would be more likely to develop depression than a child with a family history of depression that has an otherwise positive social network of peers. This interaction of factors in which events or social influences may activate a latent predisposition exemplifies the _____ model of mental disorders.

A. biopsychosocial
B. biomedical
C. diathesis-stress
D. behavioral

23. An office worker, Marilyn, came to believe that one of her co-workers, Julia, was trying to poison her. She had seen Julia in a lengthy conversation with the supply vendor for the break-room. Another co-worker, Benedict, had asked Marilyn whether she preferred coffee or tea, which was very suspicious. Marilyn paid five hundred dollars to have a sample of coffee from the break-room tested by a private laboratory. Despite negative lab results, Marilyn began bringing her own coffee to work with her, which she kept hidden in her desk in a thermos. This case study is most consistent with which of the following diagnoses?

A. delusional disorder - persecutory type
B. paranoid personality disorder
C. paranoid schizophrenia
D. sociophobia

24. The Rosenhan experiment was a famous experiment published by the journal Science in 1973 under the title "On being sane in insane places". Rosenhan wondered if there was a way in which the reliability of psychiatric diagnoses could be tested experimentally. The study involved the use of healthy associates or "pseudopatients" who briefly feigned auditory hallucinations in an attempt to gain admission to 12 different psychiatric hospitals. All were admitted and diagnosed with psychiatric disorders. After admission, the pseudopatients acted normally and told staff that they felt fine and had no longer experienced any additional hallucinations. All were forced to admit to having a mental illness and agree to take antipsychotic drugs as a condition of their release. The average time that the patients spent in the hospital was 19 days. All but one were diagnosed with schizophrenia "in remission" before their release. With reference to the historical period (approximately fifty years ago) what may be concluded from the results of the study?

A. There were significant problems with reliability in schizophrenia diagnosis at the time of the experiment.
B. Schizophrenia was perceived as an irreversible condition rather than a curable illness.
C. Psychiatrists were over-admitting schizophrenia patients for hospitalization.
D. Psychiatric diagnosis should not take a patient's report of their experiences into account.

25. A resident in a mental health facility required one-on-one supervision due to her self-mutilative behaviors. In counseling she would frequently fabulate autobiographical details, and if asked about future plans would change her goals multiple times in a single discussion. When she feared being left alone or abandoned she would find a way to hurt herself or threaten suicide. She would place the staff and/or herself in an all-good category or an all-bad category. The diagnosis for this young lady is most likely which of the following?

A. generalized anxiety disorder
B. schizotypal personality disorder
C. borderline personality disorder
D. histrionic personality disorder

26. After staying awake for forty hours straight in order to complete an research paper for a history course, while walking through the quad Sherry experienced a profound sense of being a detached observer of herself. She felt as if the buildings around her had become vague, dreamlike, and less real. It was very disturbing. What is the psychological term to describe what she is experiencing?

A. depersonalization
B. hallucination
C. dissociation
D. thought insertion

27. Obsessions are recurrent _____ that persist despite efforts to ignore or confront them.

A. habits
B. compulsions
C. thoughts
D. behaviors

28. Which of the following is a negative symptom of schizophrenia?

A. alogia
B. thought blocking
C. amnesia
D. hallucinations

29. A battery of tests for dyspraxia and agnosia was administered to 51 chronic schizophrenic patients to test the hypothesis that these cortical neurological signs are associated with psychomotor poverty syndrome (poverty of speech, flat affect, decreased spontaneous movement), disorganization syndrome (various disorders of the form of thought, inappropriate affect), abnormal involuntary movements, cognitive impairment, and duration of illness. The findings supported all elements of the hypothesis, and in particular, demonstrated a strong correlation of cortical signs with psychomotor poverty and with cognitive impairment. Which of the following best explains the underlying purpose of this experiment?

A. to determine the set of cardinal schizophrenia symptoms through factor analysis
B. to measure the correlation between psychomotor poverty and cognitive impairment
C. to demonstrate the cortical aetiology of a set of positive symptoms of schizophrenia
D. to operationalize variables in schizophrenia diagnosis

30. The cognitive perspective on depressive illness is best exemplified by which of the following statements?

A. Inherited or acquired brain disorders involving imbalances in neurotransmitters or damage to brain structures lead to depressive illness.
B. Unconscious conflicts over impulses such as sex and aggression, originating in childhood lead to depressive illness.
C. A blending of negative thoughts and beliefs about the self, the world, and possible selves leads to depressive illness.
D. An underlying biological predisposition combined with environmental or social stressors lead to depressive illness.

31. William's psychology professor presented the theory that people with depression act in ways that maintain their depression. While his professor didn't deny that biological factors contribute to depression, she asserted that it is ultimately the combination of a stressful event in an individual's life and their reaction to the event that produces a depressive episode. According to his professor, individuals with depression may display socially aversive behaviors, fail to engage in enjoyable activities, ruminate on their problems, or engage in other maladaptive activities. These behaviors most often function as avoidance mechanisms while the individual tries to cope with a stressful life event, resulting in a decrease in positive reinforcers or perceived control. Rumination and distraction are the two main coping mechanisms. According to her professor, ruminators are much more likely to become depressed than distractors. Which model is Williams' applying to interpret derpession?

A. cognitive
B. behaviorist
C. biopsychological
D. psychoanalytic

32. Which of the following are among the diagnostic criteria for substance use disorder?

I. impaired control
II. social impairment
III. risky use
IV. tolerance and withdrawal

A. I only
B. II and III
C. I, II, and III
D. I, II, III, and IV

33. Up to 80% of Wernicke's encephalopathy patients who abuse alcohol develop _____.

A. Korsakoff syndrome
B. Alzheimer's disease
C. Major depression
D. Delirium tremens

34. A person diagnosed with a paraphilia has been diagnosed with a(n) _____.

A. sexual disorder
B. attachment disorder
C. somatoform disorder
D. eating disorder

35. One version of the dopamine hypothesis suggests that schizophrenia symptoms emerge from a functional hyperactivity of dopamine neurons projecting to the nucleus accumbus, associated with functional hypoactivity of dopamine neurons projecting to the frontal cortex. A second version of the dopamine hypothesis suggests that psychosis and thought disorder may result, in part, from a state of abnormal glutamatergic cortical activity associated with exaggerated dopamine release or dysregulated dopamine signaling in the nucleus accumbus. This imbalance of cortical and dopamine signaling may contribute to improper gating of perceptual and thought processes. If the second version of the hypothesis is correct, schizophrenia would be associated with malfunction in the _____.

A. mesocortical pathway
B. mesolimbic pathway
C. mesocorticolimbic pathway
D. nigrostriatal pathway

36. Once it has been established that the individual exhibits multiple positive and negative symptoms of schizophrenia, the psychiatrist typically then evaluates the patient further to determine the subtype. If no specific subtype can be determined because the symptoms are randomized and fit multiple subtype categories, the diagnosis may be

A. dissociative identity disorder
B. disorgannized schizophrenia
C. undifferentiated schizophrenia
D. catatonic schizophrenia

.

37. Which of the following are somatic system disorders?

I. hypochondriasis
II. panic disorder
III. amnesia
IV. conversion disorder

A. IV only
B. I and IV
C. I, II, and III
D. I, II, III, and IV

38. The key pharmacologic property of conventional anti-psychotic medications such as thorazine and haldol is their ability to block dopamine D2 receptors. Blocking of these receptors in the mesolimbic pathway reduces positive symptoms of schizophrenia. However, when a substantial number of D2 receptors are blocked in the nigrostriatal dopaminergic pathway as a side effect, this will produce various disorders of movement that can appear very much like those in

A. Parkinson's disease
B. Stroke
C. Alzheimer's disease
D. Multiple sclerosis

39. Which of the following is <u>not</u> an anxiety disorder?

A. obsessive-compulsive personality disorder
B. panic disorder
C. post-traumatic stress disorder
D. agoraphobia

40. A novel hypothesis concerning the pathophysiology of schizophrenia, one that closely relates to the glutamate hypothesis, revolves around dysfunction of interneurons in the brain.Interneurons in the brain are GABAergic and local, and function mainly through the inhibition of other cells. Parvalbumin is a calcium-binding albumin protein that plays a role in signaling in certain cortical interneurons. Glutamate decarboxylase (GAD) is an enzyme that catalyzes the decarboxylation of glutamate to GABA and CO_2. Early studies have identified decreases in GAD67 mRNA and protein in post-mortem brains from schizophrenia patients compared to controls. GAD67 mRNA was completely undetectable in a subset of interneurons also expressing parvalbumin. Levels of parvalbumin protein and mRNA were also found to be lower in patient brains in various regions in the brain. Finally, excitatory synapse density is selectively lower on parvalbumin interneurons in schizophrenia and predicts the activity-dependent down-regulation of parvalbumin and GAD67.

Which of the following is suggested by the experimental observations regarding dysfunction of interneurons detailed in the passage above?

A. The activity of excitatory parvalbumin interneurons is lower in schizophrenia.
B. Parvalbumin is a transcription factor controlling expression of glutamate decarboxylase.
C. Parvalbumin interneurons are specifically affected in schizophrenia.
D. GAD67 synthesizes GABA for neurotransmission.

41. What's the main difference between bipoar I disorder and bipolar II disorder?

A. A person with bipolar I has manic episodes.
B. A person with bipolar II experiences psychotic symptoms such as delusions or hallucinations.
C. The person's mood in bipolar I is noticeably different from their normal mood when not depressed.
D. Bipolar II is comorbid with another condition such as substance abuse or obsessive-compulsive disorder.

42. The alternation of two or more distinct personality states with impaired recall among personality states is known as

A. dissociative amnesia
B. depersonalization disorder
C. dissociative fugue
D. dissociative identity disorder

43. Which of the following is a macroscopic brain structural change that has been associated with schizophrenia?

A. enlarged lateral ventricles
B. enlargement of the hippocampus
C. abnormalities in the metabolism of dopamine
D. hyperactive dopamine transmission in the mesolimbic pathway

44. _____ is characterized by a pattern of excessive attention-seeking behavior, including inappropriately seductive behavior and an excessive need for approval. People suffering from this disorder are often lively, dramatic, vivacious, enthusiastic, and flirtatious.

A. dependent personality disorder
B. borderline personality disorder
C. narcissistic personality disorder
D. histrionic personality disorder

45. After the end of his second marriage, Martin's personality seemed to change. He avoided close relatives, strangers and crowds. The idea of being in a crowd induced severe fear and inhibition. He was afraid to talk to the gardener or the property manager in his apartment complex. He avoided women, looking away from them and walking away at the prospect of an approaching woman, feeling his heart palpitate and short of breath. He avoided almost all activities outside home afraid of having a panic attack. Which of the following would definitely <u>not</u> be a proper psychiatric diagnosis of Martin?

A. social phobia
B. social anxiety disorder
C. avoidant personality disorder
D. agoraphobia

46. Psychosis as a sign of a psychiatric disorder is a diagnosis of exclusion. In other words,

A. The presence of psychotic symptoms is used to exclude diagnosis of many disorders.
B. Relevant symptoms are not diagnosed as psychotic until organic potential causes of the symptoms are excluded.
C. A new-onset episode of psychosis is not first considered as a symptom of a psychiatric disorder.
D. For the diagnosis of psychosis to apply there must be impairment in carrying out daily life activities.

47. Positive psychotic symptoms in schizophrenia have been traditionally linked to the neurotransmitter dopamine. In particular, the dopamine hypothesis of psychosis has been influential and states that psychosis results from an overactivity of dopamine function in the brain, particularly in the mesolimbic pathway. However, recent evidence has pointed to a possible dysfunction of the excitory neurotransmitter _____, in particular, regarding its activity upon the NMDA receptor.

A. GABA
B. glutamate
C. serotonin
D. acetylcholine

48. A trait marker represents the properties of the behavioral and biological processes that play an antecedent, possibly causal, role in the pathophysiology of the psychiatric disorder, whereas a state marker reflects the status of clinical manifestations in patients. Certain visual functions, while deficient in schizophrenia, may be independent of psychosis. Examining clinically unaffected relatives of schizophrenia patients and patients with bipolar disorder can provide information about the relationship between a schizophrenic disposition and visual response traits. In one study, researchers found that motion integration is dysfunctional in schizophrenia patients but not in their relatives or bipolar patients, whereas motion discrimination is dysfunctional in schizophrenia patients and their relatives, but not in bipolar patients. By synthesizing these findings, this review suggests that

A. Deficiency in motion integration may be a trait marker of schizophrenia.
B. Deficiency in motion discrimination may be an endophenotype specifically associated with genetic predisposition for schizophrenia.
C. Both psychosis and mood disturbances significantly affect the visual processes underlying motion discrimination.
D. Motion integration and discrimination are both state markers specific to schizophrenia.

49. An offshoot of the monoamine hypothesis suggests that monoamine oxidase A (MAO-A) may be overly active in depressed people. This hypothesis received support from a PET study, which found significantly elevated activity of MAO-A in the brains of some depressed people.Increased MAO activity in depressed patients may even be a trait marker in that the increased activity did not change in response to treatment. Which of the following directly results from increased MAO activity?

A. depression symptoms
B. increased synthesis of GABA
C. oxidative deamination of glutamate
D. increased degradation of serotonin

50. Which of the following statements best exemplifies a psychodynamic approach to understanding anorexia nervosa?

A. Anorexia has been linked to childhood sexual abuse or dysfunctional families.
B. Psychological causes of anorexia include low self-esteem, feeling like there is lack of control, depression, anxiety, and loneliness.
C. Constant exposure to media that presents body ideals is a risk factor for anorexia nervosa.
D. Dysregulation of the serotonin pathways has been implicated in the etiology, pathogenesis and pathophysiology of anorexia nervosa.

Answer Key
Abnormal Psychology

1. **B—**As defined in DSM-V: "A mental disorder is a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious, or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above."

2. **B—**Agoraphobia is the specific anxiety about being in a place or situation where escape is difficult or embarrassing or where help may be unavailable. Agoraphobia is strongly linked with panic disorder and is often precipitated by the fear of having a panic attack. A common manifestation involves needing to be in constant view of a door or other escape route. In addition to the fears themselves, the term agoraphobia is often used to refer to avoidance behaviors that sufferers often develop. For example, following a panic attack while driving, someone suffering from agoraphobia may develop anxiety over driving and will therefore avoid driving. These avoidance behaviors can often have serious consequences and often reinforce the fear they are caused by.

3. **A—**Specific phobias are the most common type of anxiety disorder, affecting approximately 12% of the population at some point in their life. A specific phobia is any kind of anxiety disorder that amounts to an unreasonable or irrational fear related to exposure to specific objects or situations.

4. **B—**Delusions of reference describe the phenomenon of an individual's experiencing innocuous events or mere coincidence and believing they have strong personal significance.

5. **D—**Major depressive disorder, also known simply as depression, is a mental disorder characterized by at least two weeks of low mood that is present across most situations. It's often accompanied by low self-esteem, loss of interest in normally enjoyable activities, low energy, and pain without a clear cause. Dysthymia, also called neurotic depression, is a mood disorder consisting of the same cognitive and physical problems as in depression, with less severe but longer-lasting symptoms. Dysthymia is a chronic condition.

6. **D—**The four choices are all listed among the criteria for diagnosis in DSM-5 of a personality disorder. Additionally, the enduring pattern leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning. The enduring pattern is not better explained as a manifestation or consequence of another mental disorder. And the enduring pattern is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (e.g., head trauma). DSM-5 lists ten specific personality disorders: Paranoid, Schizoid, Schizotypal, Antisocial, Borderline, Histrionic, Narcissistic, Avoidant, Dependent and Obsessive-compulsive personality disorder.

7. **C—**Choices 'A', 'B' and 'D' are typical of obsessive-compulsive disorder, an anxiety disorder, not obsessive-compulsive personality disorder. Obsessive–compulsive per-

sonality disorder is a personality disorder characterized by a general pattern of concern with orderliness, perfectionism, excessive attention to details, mental and interpersonal control, and a need for control over one's environment, at the expense of flexibility, openness to experience, and efficiency. For people with OCD, the behaviors associated with the condition are unwanted and seen as unhealthy, being the product of anxiety-inducing and involuntary thoughts, while for people with OCPD they are egosyntonic (that is, they are perceived by the subject as rational and desirable), being the result of, for example, a strong adherence to routines, a natural inclination towards cautiousness, or a desire to achieve perfection.

8. **D—**Echolalia is the unsolicited repetition of vocalizations made by another person. Echopraxia is the involuntary repetition or imitation of another person's actions. Clanging refers to a mode of speech characterized by association of words based upon sound rather than concepts. Palilalia is a speech disorder characterized by the involuntary repetition of syllables, words, or phrases. Palilalia is auto generated. In other words, it is not repetition of the vocalizations made by another person.

9. **C—**Generalized anxiety disorder is an anxiety disorder characterized by excessive, uncontrollable and often irrational worry, that is, apprehensive expectation about events or activities. This excessive worry often interferes with daily functioning, as individuals with GAD typically anticipate disaster, and are overly concerned about everyday matters such as health issues, money, death, family problems, friendship problems, interpersonal relationship problems, or work difficulties. Individuals often exhibit a variety of physical symptoms, including fatigue, fidgeting, and headaches. These symptoms must be consistent and ongoing, persisting at least six months, for a formal diagnosis of generalized anxiety disorder.

10. **C—**Antisocial personality disorder is a personality disorder, characterized by a pervasive pattern of disregard for, or violation of, the rights of others, and an impoverished moral sense or conscience. You will not find the terms psychopath and sociopath in the DSM-5.

11. **A—**Conversion disorder is a type of somatic system disorder distinguished by actual loss of bodily function. The diagnosis of somatic system disorder requires physical symptoms that suggest physical illness or injury – symptoms that cannot be explained fully by a general medical condition or by the direct effect of a substance, and are not attributable to another mental disorder.

12. **B—**Attentive reading of the prompt is the key to this question. Repression, a key concept of Freudian psychoanalysis, is a defense mechanism that ensures that what is unacceptable to the conscious mind, which would arouse anxiety if recalled, is prevented from entering into it.

13. **C—**Dysthymia, also called neurotic depression, dysthymic disorder, or chronic depression, is a mood disorder consisting of the same cognitive and physical problems as in depression, with less severe but longer-lasting symptoms.

14. **B—**Beck's cognitive triad involves "automatic, spontaneous and seemingly uncontrollable negative thoughts" about: 1) The self "I'm worthless and ugly" 2) The world or environment "People ignore me all the time." 3) The future "My life is never going to get better."

15. A—Disordered thought is a positive symptom of schizophrenia. Flat affect and anhedonia (inability to experience pleasure) are negative symptoms. Mania is not a symptom of schizophrenia.

16. B—In the United States the DSM serves as a universal authority for psychiatric diagnoses. Treatment recommendations, as well as payment by health care providers, are often determined by DSM classifications, so the appearance of a new version has significant practical importance.

17. D—Adjustment disorder is different from anxiety disorder, which lacks the presence of a stressor, or post-traumatic stress disorder and acute stress disorder, which are associated with a more intense stressor. Posttraumatic stress disorder can develop after a person is exposed to a traumatic event, such as sexual assault, warfare, traffic collisions, or other threats on a person's life. PTSD includes a different array of symptoms than adjustment disorder. Symptoms of PTSD may include disturbing thoughts, feelings, or dreams related to the events, mental or physical distress to trauma-related cues, attempts to avoid trauma-related cues, alterations in how a person thinks and feels, and an increase in the fight-or-flight response.

18. D—The diagnosis of schizoaffective disorder is made when the patient has features of both schizophrenia and a mood disorder—either bipolar disorder or depression—but does not strictly meet diagnostic criteria for either alone.

19. B—Asperger's syndrome is characterized by significant difficulties in social interaction and nonverbal communication, along with restricted and repetitive patterns of behavior and interests. As a milder autism spectrum disorder (ASD), it differs from other ASDs by the presence normal language skills and intelligence.

20. D—The symptoms are sufficient to diagnose catatonia. Catatonia be seen in many disorders including catatonic schizophrenia, encephalitis, or benzodiazepene withdrawal among others.

21. D—Choice 'D' could serve reasonably well as a topic sentence for the passage. Choices 'A' and 'B' echo statements in the passage, but they are inverted to actually contradict arguments or evidence in the passage. According to the passage, men are *more* likely to be treated for symptoms of BPD such as substance abuse than treated for BPD itself. And the passage makes the argument that the symptoms of BPD and ASPD *may* share an underlying aetiology. Choice 'C' might well be true, but the claims of the passage are consistent regarding BPD, that men are less likely to seek or accept treatment for BPD than women, not ASPD.

22. C—The diathesis–stress model attempts to explain behavior as a predispositional vulnerability together with stress from life experiences. The biopsychosocial model, choice 'A' also encompasses a multifactorial aproach, but the relationship among factors in the biopsychosocial model is expressed as an interdependence, not in ther terms of latent predisposition 'diathesis' and stressor. Diathesis-stress model is the 'best' answer, directly representing the relationships presented in the question prompt.

23. A—Delusional disorder is a mental illness in which the patient presents with delusions, but with no accompanying prominent hallucinations, thought disorder, mood disorder, or significant flattening of affect. For a diagnosis of paranoid schizophrenia, in addition to delusions, there would need to be one or more additional symptoms such as hallucinations or disorganized speech. Regarding choice 'C', sufferers of paranoid personality disorder do not suffer delusions. The condition is charac-

terized by a pervasive, long-standing suspiciousness and generalized mistrust of others but not psychotic symptoms.

24. B—'B' is the best answer. All but one of the pseudopatients were diagnosed with schizophrenia "in remission" before their release, evidence that schizophrenia is perceived as an irreversible condition creating a lifelong stigma rather than a curable illness. Choice 'A' is incorrect. Reliability reflects the overall consistency of a measure. The fact that nearly all of the pseudopatients received the same diagnosis indicates that the diagnostic procedures were reliable.

25. C—Borderline personality disorder is a long-term pattern of abnormal behavior characterized by unstable relationships with other people, unstable sense of self, and unstable emotions. There is often an extreme fear of abandonment, frequent dangerous behavior, a feeling of emptiness, and self-harm. Symptoms may be brought on by seemingly normal events. The behavior typically begins by early adulthood, and occurs across a variety of situations. Substance abuse, depression, and eating disorders are commonly associated with BPD. BPD increases the risk of self-harm and 10% of people affected die by suicide.

26. A—Individuals who experience depersonalization feel divorced from their own personal self by sensing their body sensations, feelings, emotions, behaviors etc. as not belonging to the same person or identity. Often a person who has experienced depersonalization claims that things seem unreal or hazy. Also, a recognition of a self breaks down (hence the name). Depersonalization can result in very high anxiety levels, which further increase these perceptions. Depersonalization is the third most common psychological symptom, after feelings of anxiety and feelings of depression.

27. C—Obsessions are thoughts that recur and persist despite efforts to ignore or confront them. Compulsion is an irresistible urge to behave in a certain way, especially against one's conscious wishes.

28. A—Positive symptoms are psychotic behaviors not normally seen in most people (hallucinations, delusions, disordered thinking, word salad, etc.). Negative symptoms represent reductions in normal thoughts or behaviors (flat affect, reduced speaking (alogia), avolition, anhedonia).

29. D—On the MCAT you will run into a few questions that aren't so much about cued recall of concepts as they are about how well you manage your attention and focus in reading. The experiment in this mini-passage describes the application of diagnostic techniques (cortical signs) from neurology and evaluating the correlation of those test results with diagnostic results from the field of psychiatry. The purpose is to operationalize aspects of schizophrenia diagnosis in terms of reproducible measurements. Operationalization describes the process of defining the measurement of phenomena that are difficult to directly measure in terms of variables that are praciceable to measure and quantify. The underlying purpose here is to determine if neurological tests could provide a diagnostic tool for schizophrenia.

30. C—In Beck's cognitive triad theory of depression, depressive disorders are characterized by people's dysfunctional negative views of themselves, their life experience (and the world in general), and their future. Choice 'A' exemplifies the biopsychological perspective. Choice 'B' exemplifies the psychoanalytic perspective. Choice 'D' reflects the diathesis-stress model of mental disorders.

31. B—To behavioral theory, dysfunctional or unhelpful behavior such as depression is

learned. Distraction and rumination are presented in this framework as avoidance mechanisms learned through negative reinforcement.

32. D—The choices represent the four key diagnostic criteria in the DSM-5: impaired control, social impairment, risky use, and pharmacological factors (tolerance and withdrawal). A person needs to meet at least two of these criteria to be diagnosed with substance abuse disorder.

33. A—Wernicke's encephalopathy is the presence of neurological symptoms caused by biochemical lesions of the central nervous system after exhaustion of B-vitamin reserves, in particular thiamine (vitamin B1). Korsakoff's syndrome, characterised by memory impairment, confabulation, confusion and personality changes, has a strong and recognised link with Wernicke's encepalopathy. Wernicke–Korsakoff syndrome in alcoholics is associated with atrophy/infarction of specific regions of the brain, especially the mamillary bodies. Other regions include the anterior region of the thalamus (accounting for amnesic symptoms), the medial dorsal thalamus, the basal forebrain, the median and dorsal raphe nuclei, and the cerebellum.

34. A—Paraphilia involves sexual arousal to objects, situations, or individuals that are considered abnormal or harmful to the person or others.

35. B—The mesolimbic pathway transmits dopamine from the ventral tegmental area to the nucleus accumbuns (part of the limbic system). The mesocortical pathway transmits dopamine from the ventral tegmental area to the prefrontal cortex. The term 'mesocorticolimbic pathway' refers to the two pathways as subassemblies of a larger system. A difference between the two hypotheses presented in the minipassage is that the first hypotheses implicates malfunction of both branches of the mesocorticolimbic dopaminergic system while the second hypothesis implicates malfunction of the mesolimbic portion, ie. 'exaggerated dopamine release or dysregulated dopamine signaling in the nucleus accumbus.' You need to know your way around the dopaminergic pathways!

36. C—A patient suffering from undifferentiated schizophrenia exhibit the traditional "positive" and "negative" symptoms, but the symptoms may fluctuate over a period of time or fit multiple subtypes.

37. B—Somatic symptom disorders are a group of disorders, all of which fit the definition of physical symptoms similar to those observed in physical disease or injury for which there is no identifiable physical cause. As such, they are a diagnosis of exclusion. Conversion disorder is a somatic symptom disorder involving the actual loss of bodily function such as blindness, paralysis, and numbness due to excessive anxiety. Hypochondriasis (also known as illness anxiety disorder) involves persistent and excessive worry about developing a serious illness. Panic disorder is classified as an anxiety disorder and amnesia is a cognitive disorder.

38. A—Parkinson's disease is characterized by severe motor problems, mainly hypokinesia, rigidity, tremors, and postural imbalance. Loss of dopamine neurons in the nigrostriatal pathway is one of the main pathological features of Parkinson's disease.

39. A—It's easy to confuse obsessive-compulsive personality disorder (a personality disorder marked by orderliness, perfectionism, excessive attention to details) with obsessive-compulsive disorder (an anxiety disorder marked by intrusive thoughts and ritualized behavior).

40. C—This question is about practicing focus and the management of attention/working memory in MCAT passages. Choosing the

correct answer hinges on understanding the correlation between molecular differences within a subset of GABAergic interneurons (paravalbumin interneurons) and schizophrenia presented in the passage. 'A' is incorrect mainly because GABAergic neurons aren't excitatory. 'B' is incorrect in that paravalbumin is not a transcription factor. It is a calcium binding protein. Calcium binding proteins, such as paralbumin or calmodulin, operate upstream of transcription factors in signal transduction pathways in cases where the pathway is targeting gene expression. 'D' is incorrect in the sense that it doesn't answer the question. Even if it were a true statement, it does not present content derived from the discussion or relevant to conclusions regarding dysfunction of interneurons. 'D' is not likely a correct statement, anyway. The current theory is that the GABA synthesized by GAD67 is used intercellularly and that a second enzyme, GAD65 produces the GABA used in neurotransmission by these interneurons, though knowing of this hypothesis is not required to get the question correct.

41. **A—**Diagnosis for bipolar II disorder requires that the individual must never have experienced a full manic episode (unless it was caused by an antidepressant medication; otherwise one manic episode meets the criteria for bipolar I disorder).

42. **D—**Dissociative identity disorder involves the alternation of two or more distinct personality states with impaired recall among personality states. In extreme cases, the host personality is unaware of the other, alternating personalities. However, the alternate personalities are aware of all the existing personalities. Dissociative amnesia involves the temporary loss of recall memory, specifically episodic memory, due to a traumatic or stressful event. It is considered the most common dissociative disorder amongst those documented. Dissociative fugue is now subsumed under the dissociative amnesia category. It is described as reversible amnesia for personal identity, usually involving unplanned travel or wandering, sometimes accompanied by the establishment of a new identity. Depersonalization disorder involves periods of detachment from self or surrounding which may be experienced as "unreal" (lacking in control of or "outside of" self) while retaining awareness that this is only a feeling and not a reality.

43. **A—**Enlargement of the lateral ventricles is among the most frequently reported macroscopic brain structural changes in schizophrenia. Regarding choice 'B', shrinkage of the hiccocampus has been observed. Choices 'C' and 'D' are not macroscopic changes.

44. **D—**Histrionic personality disorder lies in the dramatic cluster of personality disorders (along with borderline, narcissistic, and antisocial). People with HPD have a high need for attention, make loud and inappropriate appearances, exaggerate their behaviors and emotions, and crave stimulation. They may exhibit sexually provocative behavior, express strong emotions with an impressionistic style, and can be easily influenced by others. Associated features include egocentrism, self-indulgence, continuous longing for appreciation, and persistent manipulative behavior to achieve their own needs.

45. **C—**The personality disorders in general are defined as emerging in childhood, or at least by adolescence or early adulthood.

46. **C—**Psychosis as a sign of a psychiatric disorder is a diagnosis of exclusion. That is, a new-onset episode of psychosis is not considered a symptom of a psychiatric disorder until other relevant and known causes of psychosis are properly excluded. Medical and biological laboratory tests should exclude central nervous system diseases and injuries, diseases and injuries of other organs, psychoactive substances, and toxins

as causes of symptoms of psychosis before any psychiatric illness can be diagnosed. In medical training, psychosis as a sign of illness is often compared to fever since both can have multiple causes that are not readily apparent.

47. B—Glutamate is used at the great majority of fast excitatory synapses in the brain and spinal cord. The NMDA receptor is so named because the agonist molecule N-methyl-D-aspartate (NMDA) binds selectively to it, and not to other glutamate receptors. The glutamate theory of schizophrenia is reinforced by the fact that dissociative NMDA receptor antagonists such as ketamine, PCP and dextromethorphan induce a psychotic state more readily than dopaminergic stimulants, even at "normal" recreational doses.

48. B—Endophenotype is a genetic epidemiology term which is used to separate behavioral symptoms into more stable phenotypes with a clear genetic connection. Motion discrimination was found to be dysfunctional in schizophrenic patients and their relatives. In other words, motion discrimination appears to be a trait marker of schizophrenia.

49. D—The key regulator of brain function, MAO-A, degrades amine neurotransmitters, such as dopamine, norepinephrine, and serotonin, via oxidative deamination.

50. A—The term 'psychodynamics' refers specifically to the psychoanalytical approach developed by Sigmund Freud and his followers. A focus in psychodynamics is the connection between the energetics of emotional states in the id, ego and super-ego as they relate to early childhood developments and processes. Choice 'B' exemplifies a cognitive approach; choice 'C' the social cognitive approach; and choice 'D' a biopsychological approach.

Treatment of Mental Disorders

1. Which type of therapy focuses on the development of personal coping strategies that target solving current problems and changing unhelpful patterns in thoughts, behaviors, and emotional regulation?

A. behaviorist
B. psychoanalytic
C. cognitive-behaviorist
D. humanist

2. The following procedure has proven efficacy in reducing test anxiety:

1) Make a list of four or five scenes (events and thoughts) associated with test anxiety and rank them from low to high in terms of the amount of anxiety they trigger.

2) Practice a set of relaxation skills until relaxation comes readily such as tensing and relaxing key muscle groups, focusing awareness on breathing and doing full complete breaths, or picturing a relaxing scene with good associations.

3) Alternate picturing the relaxing image (30 seconds) with scenes associated with test anxiety (15 seconds) beginning with those scenes that trigger the least amount of anxiety. Move on to higher ranked scenes when the initial scenes produce little or no anxiety.

Which technique from behavior therapy is epitomized by the above procedure?

A. operant conditioning
B. aversion therapy
C. flooding
D. systematic desensitization

3. On the day of his first appointment, Rudy's therapist shared that the process in their sessions is not about Rudy being helped or healed by the her. Instead, their sessions are an exploration they create together in the here-and-now of the therapy. She explained that her own experience is also very much part of the therapy. Since we co-create our self-other experiences, the way a therapist experiences being with a client is useful in helping understand how the client experiences themselves.

What kind of psychotherapy is Rudy receiving?

A. Gestalt
B. humanistic
C. cognitive-behavioral
D. person-centered

4. Which of the following therapeutic techniques is based on classical conditioning principles?

I. aversion therapy
II. flooding
III. behavioral activation
IV. token economy

A. I only
B. I and II
C. II and III
D. I, II, III, and IV

5. Josephine's therapist maintains a kindly reticence and is reluctant to offer his own opinions during their therapy sessions. Which type of therapy does this exemplify?

A. humanistic
B. cognitive
C. psychoanalytic
D. behaviorist

6. Which of the following psychiatric medications is a dopamine antagonist?

A. Prozac
B. Xanax
C. Zoloft
D. Haldol

7. At one point in the animated film, *The Iron Giant*, Hogarth is talking to his older friend, Dean. Hogarth relates the trouble he is having fitting in at school. Dean says, "Look, it's none of my business, but who cares what these creeps think of you? They don't make you what you are. You do. You are who you choose to be." Of the following psychologists, whose therapeutic approach does Dean's statement best exemplify?

A. Carl Rogers
B. Aaron Beck
C. Carl Jung
D. Albert Ellis

8. The greatest demonstrated clinical effectiveness of electroconvulsive therapy is in the treatment of _____.

A. schizophrenia
B. major depressive disorder
C. dissociative personality disorder
D. general anxiety disorder

9. The goal of cognitive therapy for depression is

A. to reduce maladaptive behavior and increase positive behavior patterns
B. to help the patient develop insight into their unconscious processes
C. to help a person learn to recognize negative patterns of thought and replace them with healthier ways of thinking
D. to help the client develop a stronger, healthier sense of self, as well as access and understand their feelings to help gain a sense of meaning in life

10. A patient experiencing the manic phase of bipolar disorder is most likely to be prescribed

A. haldol
B. thorazine
C. lithium
D. xanax

11. Which of the following is traditionally seen as playing a crucial and essential role in determining the client-therapist relationship in successful Freudian psychoanalysis?

A. repression
B. resistance
C. transference
D. reaction-formation

12. Systematic desensitization is based on the principle of

A. reciprocal inhibition
B. negative reinforcement
C. positive punishment
D. latent learning

13. Flooding therapy is based on the idea that

A. depression is the result of faulty thinking
B. dysfunctional habits are the result of reinforcement
C. neurosis is the result of repression
D. fears are maintained by avoidance

14. As an example of the cognitive-behavioral model of addiction relapse, consider the following. In heavy traffic a recovering alcoholic decides one afternoon to exit the highway and travel on side roads. He realizes he is inadvertently driving by his old favorite bar. If he lacks coping mechanisms, he may experience a lapse—an isolated return to substance intoxication. This may produce _____ characterized by guilt for having gotten intoxicated and low efficacy for future abstinence in similar tempting situations. This is a dangerous pathway to full-blown relapse.

A. the abstinence violation effect
B. an extinction burst
C. avoidant behavior
D. projection

15. The Dodo bird verdict, derived through meta-analysis regarding the relative efficacy of different psychotherapies, determined which of the following as the most generally effective psychotherapy for treating anxiety and major depression?

A. cognitive-behavioral
B. psychodynamic
C. person-centered
D. all of the above are roughly equivalent in their outcomes

16. Mescaline's hallucinogenic properties stem from its structural similarities to dopamine and serotonin. Which of the following types of prescribed medication is most likely to cause symptoms similar to mescaline overdose if a person ingests mescaline with the medication already in their system?

A. benzodiazepene
B. MAO inhibitor
C. first generation antipsychotic
D. barbiturate

17. Of the following therapies for treatment of ADHD in children, which is the most effective?

A. stimulant medication
B. cognitive behavioral therapy
C. group therapy
D. behavioral therapy plus stimulant medication

18. Which of the following has been demonstrated experimentally to be an effective treatment for major depressive disorder?

I. serotonin reuptake inhibitors
II. transcranial magnetic stimulation
III. electroconvulsive therapy
IV. cognitive behavioral therapy

A. I only
B. I and II
C. II and IV
D. I, II, III and IV

19. The counseling technique of reflection is most closely associated with which of the following types of psychotherapy?

A. Gestalt
B. psychodynamic
C. interpersonal
D. person-centered

20. Claudette's therapist, Dr. Robinson, invited her to participate in an exercise in which Claudette imagined her 'Inner Critic' sitting in a chair opposite her. In the exercise, Claudette shuttled back and forth between the two chairs, embodying the Critic in one chair and responding to it in the other. She was encouraged to argue against the Inner Critic and recognize its extreme and distorted logic. She spoke to it about the emotional pain and suffering that she had experienced from its criticisms. At one point Dr. Robinson stepped in and dialogued with the Critic directly. He defended Claudette, challenged the logic of the attacks, and generally pointed out the uselessness of the Critic. Which of the following best describes the therapeutic technique is Dr. Robinson is employing?

A. cognitive-behavioral
B. Gestalt
C. interpersonal
D. psychodynamic

21. When a psychiatric patient recovers without any intervention it may be due to

A. placebo effect
B. regression to the mean
C. self-serving bias
D. spontaneous remission

22. Which of the following statements best exemplifies the perspective of structural family therapy?

A. Family problems arise from maladaptive boundaries and subsystems that are created within the overall family system of rules and rituals that governs their interactions.
B. Individuals choose relationships that attempt to heal insecure attachments from childhood. Negative patterns established by their parents are projected onto their partners.
C. People use stories to make sense of their experience and to establish their identity as a social and political constructs based on local knowledge.
D. Complications from social and political disparity between genders are identified as underlying causes of conflict within a family system.

23. The phrase 'neuroleptic-induced dopamine supersensitivity in the nigrostriatal pathway' is describing

A. a symptom of opioid addiction
B. a side-effect of an antipsychotic medication
C. methamphetamine induced psychosis
D. a potential underlying cause of schizophrenia

24. Marcella suffers from obsessive compulsive disorder. She has particular issues with germs. Her therapist gave her the homework of touching a toilet seat and then refraining from washing her hands. Which of the following techniques does her therapist's advice best exemplify?

A. exposure and response prevention
B. cognitive restructuring
C. mindfulness practice
D. systematic desensitization

25. For Ronda it felt like any moment of stress could unpredictably transform into a sudden rush of intense fear or dread. She would feel shortness of breath, smothering feelings, and nausea accompanied by chest-pain and fear of cardiac arrest. She sought help from a psychotherapist who diagnosed panic disorder. She was prescribed medication by an MD and Ronda and her therapist began sessions seeking the underlying cause of the anxiety leading to her distress. However, Ronda continued to experience several panic attacks per week. She visited a second therapist. Instead of seeking an underlying cause of her anxiety, her second therapist encouraged Ronda to learn how to recognize the first symptoms of a panic attack. Ronda related the fear of having a heart attack and her therapist helped her understand how chest pain could occur with anxiety. She taught Ronda to tell herself 'It's okay. I'm not having a heart attack.' Over time Ronda learned to recognize the early symptoms of a panic attack and became skilled at helping them dissipate. What type of therapy did the second therapist use to treat Ronda?

A. behavior therapy
B. modeling
C. cognitive therapy
D. rational emotive behavior therapy

26. For which mental disorder are behavior therapy techniques especially effective in treating?

A. major depressive disorder
B. anti-social personality disorder
C. specific phobia
D. borderline personality disorder

27. Looking at the empty mailbox, waiting for a package from the elite graduate program to which she had applied, Josephine became convinced that the delay must be because the admissions office was sending the rejection letters last. Which of the following types of cognitive distortion does this best exemplify?

A. arbitrary inference
B. selective abstraction
C. personalization
D. overgeneralization

28. Because of the severity of his depression and the exhaustion of other treatment options, Alan is considering receiving electroconvulsive therapy. As a prelude to informed consent, Alan is notified of possible side-effects. Which of the following is the most common side-effect of ECT?

A. increased suicidal ideation
B. memory loss
C. delusional thinking
D. as practiced today, there are few side-effects of ECT

29. A basic assumption of modern cognitive behavior therapy over traditional behaviorism is that people are capable of self-directed behavior change. Of the following theorists, whose research and theories were most responsible for this aspect of modern behavior therapy?

A. Bandura
B. Skinner
C. Thorndike
D. Wolpe

30. Mood stabilizers are used primarily for

A. major depressive disorder
B. dysthymia
C. bipolar disorder
D. borderline personality disorder

31. The psychosocial interventions that psychiatry residents in the United States are mandated to receive training in for professional practice are

I. cognitive-behavior therapy
II. interpersonal therapy
III. psychoanalysis
IV. structured family therapy

A. I only
B. I and II
C. I and IV
D. I, II, III, and IV

32. Despite the early promise of cognitive theories of depression, important questions remain. The proposition that both depression and anxiety are characterized by biases in all aspects of information processing, for example, has received little support. A closer comparison of studies that have provided evidence for depression-related biases with studies that have not can lead to a more comprehensive characterization of cognitive processing in depression that could have important implications for models of, and interventions for, depression. Moreover, whereas numerous studies have provided evidence that cognitive biases are present during current episodes of depression, empirical support for the presence of these biases outside of current episodes is more elusive. And even fewer investigators have tested explicitly the diathesis-stress model of depression by, for example, assessing biased processing prior to the first onset of depression to examine whether it predicts depression following the experience of a negative life event. Finally, there has been little connection between cognitive theories of depression and other aspects of depressive functioning. Few studies have examined how deficits in recall, attentional biases for negative material, and mood-congruent memory are related to each other and, more importantly, how they are related to the hallmark feature of depression—sustained negative affect.

The main point of the passage above is to call for future research to develop a better understanding of

A. how negative affect in depression leads to cognitive biases
B. how cognitive biases function as a state marker of depression
C. whether or not cognitive biases predict depression following a negative life event
D. the relationship between cognitive biases and the dysregulation of emotion in depression

33. To date the most successful and effective psychotherapeutic approach for borderline personality disorder is

A. interpersonal therapy
B. Gestalt therapy
C. rational emotive behavior therapy
D. dialectical behavior therapy

34. The preferred first-line medications for treatment of generalized anxiety disorder are

A. benzodiazepenes
B. selective serotonin reuptake inhibitors
C. monoamine oxidase inhibitors
D. dopamine reuptake inhibitors

35. The therapeutic method of functional analysis is a tool for interpretation based on

A. operant conditioning
B. neurobiology
C. psychodynamic principles
D. social and cultural context

36. Which drug is similar in mechanism to Celexa?

A. Xanax
B. Ativan
C. Zoloft
D. Thorazine

37. There are relatively few studies and no randomized controlled trials that isolate pharmacological treatment strategies in bipolar patients with comorbid anxiety. Traditional bipolar treatments (such as lithium) tend to be less effective when anxiety coexists. Anticonvulsants have been studied in anxiety conditions. There is limited controlled evidence to support the use of these agents in comorbid anxiety. The efficacy of antidepressant agents, including the SSRIs and SNRIs, has been extensively demonstrated in anxiety conditions. These agents are often used to manage anxiety conditions when comorbid with BPD. Although controversial, the use of these agents is widespread in bipolar depression and its associated comorbidities. It has been found that rapid switching of moods may be more prominent in the face of early-onset bipolarity, anxiety comorbidity, and antidepressant activation. Second-generation antipsychotic agents have shown direct or adjunctive benefits in the treatment of anxiety conditions. Their additional role as mood stabilizers, with a relatively protective effect against bipolar mood switching, may be advantageous for the patient with comorbidities. The clinician's task is to treat the comorbid anxiety condition (along with its heightened attendant risks) while first insulating the patient against further destabilization of the primary mood disorder.

According to the author of the passage above, prescribing a drug such as Lexapro or Paxil to treat anxiety comorbid with bipolar disorder may be characterized by

A. a protective result against biploar mood switching
B. an exacerbation of the core mood disturbance
C. extrapyramidal side effects
D. a decreased effectiveness in treating bipolar symptoms

38. Which of the following describes a feature shared by the therapeutic approaches to depression of Aaron Beck and Albert Ellis?

A. staunch commitment to the basic operant and respondent paradigm in behavioral management
B. the importance of transference in establishing the therapist-client relationship
C. motivational-affective considerations as underlying depressive symptoms
D. the relevance of information processing biases in depressed people's cognitions

39. Which of the following modern psychotherapies relies most heavily on neo-Freudian ideas?

A. interpersonal psychotherapy
B. rational emotive behavior therapy
C. cognitive therapy
D. strategic family therapy

40. Tina's therapist, Dr. Martin, believes in the importance of helping Tina gain insight into her difficulties. However, doctor Martin believes that insight is not sufficient for most people to recover from their psychiatric disorder or improve their psychological functioning. What kind of therapy is it likely that Dr. Martin practices?

A. cognitive-behavioral therapy
B. person-centered therapy
C. psychoanalysis
D. Gestalt therapy

41. The possibility of adopting a human science approach to research in counselling and psychotherapy raises a number of difficult issues. There are two main points of tension. On the one hand, by emphasizing human intentionality and purpose, the role of language and history in maintaining and creating meaning, and the interconnectedness of people, qualitative research/human science and psychotherapy are talking the same language and seeing the world from a similar standpoint. On the other hand, the cost of this similarity in world-view is that it directly opens up theories of therapy, and the way that therapists think about their work, to critical reappraisal. The second point of tension relates to the social function of therapy research. Therapy is inevitably a messy business. At the best of times, there is a lot happening in a therapy session that does not readily fit into any model or protocol. A positivist-empiricist, measurement-oriented approach to research simplifies and tidies up this complexity, and presents the world with an appearance of certainty in respect to what is known. The cost of a human science approach, therefore, may be to undermine public belief in the efficacy of therapy.

Which of the following approaches to psychology research most closely matches the 'human science approach' as described in the passage above?

A. Freudian psychoanalysis
B. constructivism
C. positivism
D. phenomenology

42. Which of the following descriptions is more consistent with strategic family therapy than structured family therapy?

A. The family therapist is focused on hierarchy, power, roles, and responsibilities.
B. An emphasis is for the therapist to join with the family.
C. The family therapist is goal-directed, concise, articulate, and problem-focused.
D. The therapist's role is not stable and changes over time.

43. Researchers conducted a study to measure the phenomenon that occurs when female trauma therapists experience the physical state of the patient in a clinical context. Their research was influenced by developments in the psychotherapy world which was beginning to see a therapist's role in a therapeutic dyad as reflexive; that a therapist uses their bodies and 'self' as a tuning fork to understand their client's internal experience and to use this attunement as another way of being empathic with a client's internal world. Within the framework of the psychodynamic model, the phenomenon described would be considered a type of

A. hysteria
B. conversion disorder
C. projection
D. countertransference

44. As a treatment plan to help him overcome his arachnophobia, Ryan's therapist asked him to rank various hypothetical encounters with spiders in order of unpleasantness. The therapist then taught Ryan some relaxation techniques, and in a subsequent session they paired relaxation with increasingly unpleasant levels of imaginary encounters with spiders. In addition to these procedures, Ryan's therapist recommended that they try to discover the underlying unconscious reason for his arachnophobia. In order to accomplish this goal, Ryan began keeping a dream journal which he and his therapist would analyze together. Which of the following best characterizes Ryan's therapeutic program?

A. behavioral
B. psychodynamic
C. eclectic
D. cognitive-behavioral

45. Psychological treatments based on learning principles were originally conceptualized in terms of reinforcement governed peripherally by relationships between stimuli and responses. A major theoretical shift occurred, however, after the middle of the twentieth century, and cognitive processes came to be seen as playing a prominent role in the acquisition and retention of new behavior patterns. Of the theorists below, whose work was most responsible for laying the groundwork for this paradigm shift?

A. Aaron Beck
B. Albert Bandura
C. Albert Ellis
D. B.F. Skinner

46. Which of the following is most similar to the concept of self-actualization, the 'curative force' in Carl Rogers' humanistic psychotherapy?

A. Jung's concept of individuation
B. Bandura's concept of self-efficacy
C. Ellis' concept of mental wellness
D. Freaud's healthy ego

47. In Carl Rogers' person-centered therapy, the concept of empathy describes a situation in which the therapist

A. understands the client's situation from the client's point of view
B. sympathizes with the client's difficulties
C. has confidence in the client's potential for self-actualization
D. has unconditional positive regard for the client

48. During their sessions, Mariana's therapist frequently asks her questions to help uncover the assumptions and evidence underpinning her thoughts in respect of problems, questions such as 'What might be another explanation? Why else might it have happened?' OR 'What are worst outcome? What's the most realistic outcome?' OR 'Imagine one of your friends in the same situation, what would I tell them?' In cognitive behavioral therapy, this style of questioning is known as

A. open-ended
B. A-not-A
C. Socratic
D. leading

49. Self-monitoring in cognitive-behavioral therapy is also called

A. diary work
B. homework
C. behavioral experimentation
D. systematic desensitization

50. A person must meet which of the following requirements in order to obtain certification as a Certified Clinical Mental Health Counselor?

I. Extensive work experience of clinical client contact
II. Passing score on the National Clinical Mental Health Counseling Examination (NCMHCE)
III. Coursework in multiple theories of psychotherapy and personality
IV. PhD or PsyD with a major study in counseling

A. IV only
B. I, II, and III
C. II and IV
D. I, II, III, and IV

Answer Key
Treatment of Mental Disorders

1. **C—**Cognitive behavioral therapy attempts to combine approaches from behavior therapy and cognitive therapy. CBT is focused on the construction and re-construction of people's cognitions, emotions and behaviors. Generally in CBT, the therapist, through a wide array of modalities, helps clients assess, recognize and deal with problematic and dysfunctional ways of thinking, emoting and behaving.

2. **D—**Systematic desensitization, also known as graduated exposure therapy is a type of behavior therapy used to help effectively overcome phobias and other anxiety disorders. More specifically, it is a form of counter conditioning, a type of Pavlovian therapy developed by South African psychiatrist, Joseph Wolpe. The process of systematic desensitization occurs in three steps. The first step of systematic desensitization is the identification of an anxiety inducing stimulus hierarchy. The second step is the learning of relaxation or coping techniques. When the individual has been taught these skills, he or she must use them in the third step to react towards and overcome situations in the established hierarchy of fears. The goal of this process is for the individual to learn how to cope with, and overcome the fear in each step of the hierarchy.

3. **A—**Gestalt therapy is an existential/experiential form of psychotherapy that emphasizes personal responsibility and focuses upon the individual's experience in the present moment, the therapist–client relationship, the environmental and social contexts of a person's life, and the self-regulating adjustments people make as a result of their overall situation. The approach Rudy's therapist is taking exemplifies the phenomenological view of the self in Gestalt psychology, in which how one experiences the other is inseparable from how one experiences oneself.

4. **B—**Aversion therapy and flooding are based on classical conditioning (Pavlovian) principles. Behavioral activation and token academy are based on operant conditioning principles. In aversion therapy the patient is exposed to a stimulus while simultaneously being subjected to some form of discomfort. Flooding is another technique based on classical conditioning principles. In flooding, in order to demonstrate the irrationality of the fear, a psychologist would put a person in a situation where they would face their phobia at its worst. Under controlled conditions and using psychologically-proven relaxation techniques, the subject attempts to replace their fear with relaxation. In constrast, behavioral activation and token economy are based on operant conditioning principles (positive reinforcement). As a treatment for depression, behavioral activation often includes a token economy as part of its system of reinforcement to encourage positively oriented thoughts and behaviors.

5. **A—**In humanistic therapy, especially the person-centered therapy developed by Carl Rogers, the therapist seeks to provide a non-judgmental, accepting environment that provides unconditional positive regard in order to incite feelings of acceptance and value within the client.

6. **D—**Haldol (haloperidol) is a conventional antipsychotic medication used in the treatment of schizophrenia among other conditions. Haldol is a dopamine receptor antagonist. Zoloft and Prozac are selective serotonin reuptake inhibitors often used in the treatment of depression. Xanax, a benzodiazepene, is a positive allosteric modulator of the $GABA_A$ receptor.

7. **D—**One of the main pillars of the Ellis' rational emotive behavior therapy is that irra-

tional and dysfunctional ways and patterns of thinking, feeling and behaving are contributing to much, though hardly all, human disturbance and emotional and behavioral self-defeatism and social defeatism. REBT generally teaches that when people turn flexible preferences, desires and wishes into grandiose, absolutistic and fatalistic dictates, this tends to contribute to disturbance and upset. Albert Ellis suggested a set of core, irrational beliefs or philosophies that humans tend to disturb themselves through. Among these is the believe that "I absolutely MUST, under practically all conditions and at all times, perform well (or outstandingly well) and win the approval (or complete love) of significant others. If I fail in these important—and sacred—respects, that is awful and I am a bad, incompetent, unworthy person, who will probably always fail and deserves to suffer." Holding this belief when faced with adversity tends to contribute to feelings of anxiety, panic, depression, despair, and worthlessness.

8. **B—**Although generally only used when other treatments have failed, meta-analysis has demonstrated a large effect size (high efficacy relative to the mean in terms of the standard deviation) for ECT versus placebo, and versus antidepressant drugs.

9. **C—**The cognitive therapeutic model states that thoughts, feelings and behavior are all connected, and that individuals can move toward overcoming difficulties and meeting their goals by identifying and changing unhelpful or inaccurate thinking, problematic behavior, and distressing emotional responses. Choice 'A' exemplifies the behaviorist approach; choice 'B' the psychodynamic approach; and choice 'D' the humanistic approach.

10. **C—**Lithium is effective in treating acute manic episodes and preventing relapses in bipolar depression. Lithium is also an effective treatment for bipolar depression. Lithium reduces the risk of suicide, self-harm, and death in people with bipolar disorder.

11. **C—**Transference is a phenomenon characterized by unconscious redirection of feelings from one person to another. Freud considered the redirection of feelings from the client's past onto the therapist an essential part of the psychoanalytic process. Freud wrote, "The patient is not satisfied with regarding the analyst in the light of reality as a helper and adviser who, moreover, is remunerated for the trouble he takes and who would himself be content with some such role as that of a guide on a difficult mountain climb. On the contrary, the patient sees in him the return, the reincarnation, of some important figure out of his childhood or past, and consequently transfers on to him feelings and reactions which undoubtedly applied to this prototype. This fact of transference soon proves to be a factor of undreamt-of importance, on the one hand an instrument of irreplaceable value and on the other hand a source of serious dangers. This transference is ambivalent: it comprises positive (affectionate) as well as negative (hostile) attitudes towards the analyst, who as a rule is put in the place of one or other of the patient's parents, his father or mother." (*An Outline of Psychoanalysis* - 1940.)

12. **A—**Reciprocal inhibition is the principle that a person can't experience two conflicting responses simultaneously. The application of reciprocal inhhibition in systematic desensitization is a form of classical conditioning. Systematic desensitization was described by its originators as counterconditioning.

13. **D—**Flooding therapy is a technique to help patients overcome specific phobias. The phobia is seen as having been maintained by avoidance, a behavior pattern promoted by negative reinforcement. By repeately exposing the patient to anxiety provoking stimulus

in the absence of negative consequences, the therapy allows the avoidant behavior to extinguish.

14. A—The abstinence violation effect may occur when a person who has made a commitment to obstain from a substance or behavior has an initial lapse whereby the substance or behavior is engaged in at least once. The effect occurs as a feeling of helplessness or guilt, an internal attribution of a global, stable cause for the lapse. As a model of relapse, helping a client become aware of the abstinence violation effect epitomizes the cognitive-behavioral approach to addiction treatment.

15. D—The Dodo bird verdict is a controversial topic in psychotherapy, referring to the claim that all psychotherapies, regardless of their specific components, produce equivalent outcomes. In opposition to the Dodo bird verdict, there are a growing number of studies demonstrating that some treatments produce better outcomes for particular disorders when compared to other treatments. The most compelling evidence against the Dodo bird verdict is illustrated by the research done on anxiety disorders. Many studies have found specific treatment modalities to be beneficial when treating anxiety disorders, specifically cognitive behavioral therapy (CBT).

16. B—L-Monoamine oxidases (MAO) are a family of enzymes that catalyze the oxidation of monoamines. Serotonin, melatonin, norepinephrine, and epinephrine are mainly broken down by MAO-A. Phenethylamine and benzylamine are mainly broken down by MAO-B. Both forms break down dopamine, tyramine, and tryptamine equally. MAOs also break down the psychedelic drugs whose properties derive from their structural similarity to monoamine neurotransmitters, ie. psilocybin, DMT and mescaline. Monoamine oxidase inhibitors (MAOIs) are chemicals that inhibit the activity of MAO. Of the choices listed, a MAOI is most likely to produce an interaction with mescaline with symptoms similar to mescaline overdose. Benzodiazepines enhance the effect of the neurotransmitter gamma-aminobutyric acid (GABA) at the $GABA_A$ receptor. Barbiturates also enhance $GABA_A$ receptors but through a somewhat different mechanism than benzodiazepenes. First generation antipsychotics block dopamine receptors.

17. D—Combination treatment involving behavioral therapy and stimulant medication has been demonstrated as the most effective available treatment for ADHD in children. (Make sure you read all of the answer choices.)

18. D—Although all four therapies have demonstrated effectiveness, TMS and ECT are not considered first-line treatments but are generally reserved for treatment resistent acute major depression.

19. D—Carl Rogers was famous for the counseling technique of reflection, which means summarizing what the client has said and verbalizing this the the client. As a communication strategy it involves two key steps: seeking to understand a speaker's idea, then offering the idea back to the speaker, to confirm the idea has been understood correctly. It attempts to "reconstruct what the client is thinking and feeling and to relay this understanding back to the client". Reflective listening is a more specific strategy than the more general methods of active listening. Empathy is at the center of Rogers' approach.

20. B—The two-chair (or empty chair) technique is a famous method of Gestalt therapy.

21. D—Spontaneous remission refers to recovery in the absence of intervention or treatment. 'Placebo effect' is not correct because delivery of a placebo would qualify as an intervention. 'Self-serving bias' and 'regres-

sion to the mean' make reference to an appearance of recovery which may or may not be true, so those choices don't address concerns of the question.

22. A—Structural family therapy addresses problems in functioning within a family. Structural Family Therapists strive to enter, or "join", the family system in therapy in order to understand the invisible rules which govern its functioning, map the relationships between family members or between subsets of the family, and ultimately disrupt dysfunctional relationships within the family, causing it to stabilize into healthier patterns.

23. B—Antipsychotics are also known as neuroleptics. The primary mode of action of antipsychotic medications, such as thorazine or haldol, is through the blocking of dopamine receptors. Blocking dopamine receptors in the mesolimbic and mesocortical pathways reduces schizophrenia symptoms. However, the effect of the medication on the nigrostriatal dopaminergic pathway is responsible for many of the side-effects of these medications that involve motor control processes. The question particularly refers to the hypothesized underlying mechanism of tardive dyskinesia. Tardive dyskinesia is a side-effect of antipsychotic medications characterized by repetitive, involuntary movements.

24. A—Exposure and response prevention is a form of exposure therapy in which individuals confront their fears and discontinue their escape response.

25. C—Cognitive therapy for panic disorder is based on the idea that panic attacks are frequently the result of misinterpreting normal bodily sensations as a sign of an impending physical or mental catastrophe. The misinterpretation generates a feedback effect in which anxiety, physical symptoms, and negative thoughts reinforce each other.

26. C—Exposure-based methods of behavioural therapy are well suited to the treatment of phobias. Systematic desensitization and flooding are two techniques with a proven track record.

27. A—Aaron Beck proposed that those with depression develop cognitive distortions, a type of cognitive bias sometimes also referred to as faulty or unhelpful thinking patterns. Beck referred to some of these biases as "automatic thoughts", suggesting they are not entirely under conscious control. People with depression will tend to quickly overlook their positive attributes and disqualify their accomplishments as being minor or meaningless. They may also misinterpret the care, good will, and concern of others as being based on pity or susceptible to being lost easily if those others knew the "real person" and this fuels further feelings of guilt. The main cognitive distortions according to Beck are 1- Arbitrary inference (drawing conclusions from insufficient or no evidence) 2- Selective abstraction (drawing conclusions on the basis on just one of many elements of a situation) 3- Overgeneralisation (making sweeping conclusions based on a single event) 4- Magnification (exaggerating the importance of an undesirable event) 5- Minimisation (underplaying the significance of a positive event) 6- Personalisation (attributing negative feelings of others to oneself).

28. B—Memory loss is the most common side-effect of ECT. Cognitive impairment is also sometimes noticed.

29. A—In Bandura's theory behavior is influenced by stimulus events, reinforcement, and by cognitive mediation. Learning involves a reciprocal interaction among the environment, cognition and individual behavior. People are capable of self-directed behavior change with the concept of self-efficacy embodying the individual's belief that he can bring about desired change.

30. C—A number of medications are used to treat bipolar disorder. The medication with the best evidence is lithium, which is effective in treating acute manic episodes and preventing relapses. Lithium is also an effective treatment for bipolar depression. Lithium reduces the risk of suicide, self-harm, and death in people with bipolar disorder. Several anticonvulsants are used in the treatment of bipolar disorder.

31. B—There are a couple of reasons this question was included. IPT and CBT are the only psychosocial interventions that psychiatry residents in the United States are mandated to receive training in for professional practice. For this reason, interpersonal therapy will be elevated in the eyes of AAMC among other psychotherapies that have been developed. Interpersonal psychotherapy is a brief, attachment-focused psychotherapy that centers on resolving interpersonal problems and symptomatic recovery. It is an empirically supported treatment that follows a highly structured and time-limited approach and is intended to be completed within 12–16 weeks. IPT is based on the principle that relationships and life events impact mood and that the reverse is also true. The content of IPT's therapy was inspired by Attachment Theory and Harry Stack Sullivan's Interpersonal Psychoanalysis. Unlike psychodynamic approaches, IPT does not include a personality theory or attempt to conceptualize or treat personality but focuses on humanistic applications of interpersonal sensitivity. The aim of IPT is to help the patient to improve interpersonal and intrapersonal communication skills within relationships and to develop social support network with realistic expectations to deal with the crises precipitated in distress' and to weather 'interpersonal storms.'

32. D—Choice 'D' is the best of the choices at encapsulating the main idea of the passage. Choice 'A' assumes cognitive biases stem from negative affect which are definitely not assumed in the passage. Regarding choice 'B', the question of whether cognitive biases function as a trait marker would be more on point, but still not as good as 'D' even then. Regarding choice 'C' the focus is way too narrow to be the main idea.

33. D—Dialectical behavior therapy (DBT) is a modified form of cognitive behavioral therapy developed in late 1980s by Marsha M. Linehan, a psychology researcher at the University of Washington, to treat people with borderline personality disorder and chronically suicidal individuals. The primary dialectic within DBT is between the seemingly opposite strategies of acceptance and change. DBT combines standard cognitive behavioral techniques for emotion regulation and reality-testing with concepts of distress tolerance, acceptance, and mindful awareness. DBT is the first therapy that has been experimentally demonstrated to be generally effective in treating BPD. The first randomized clinical trial of DBT showed reduced rates of suicidal gestures, psychiatric hospitalizations, and treatment drop-outs when compared to treatment as usual.

34. B—Commonly prescribed pharmaceutical treatments for generalized anxiety disorder include selective serotonin reuptake inhibitors (SSRIs) and benzodiazepenes. SSRIs are the preferred first line of treatment. SSRIs used for this purpose include escitalopram (Lexapro) and paroxetine (Paxil). The shortcomings of benzodiazepenes (cognitive impairment, addiction, etc.) make them optimal only for short-term relief of anxiety.

35. A—Functional analysis in behavioral psychology is the application of the laws of operant conditioning to establish the relationships between stimuli and responses. To establish the function of a behavior, one typically examines the "four-term contingency": first by identifying the motivating operations, then

identifying the antecedent or trigger of the behavior, identifying the behavior itself as it has been operationalized, and identifying the consequence of the behavior which continues to maintain it.

36. C—Celexa and Zoloft are both selective serotonin reuptake inhibitors. Xanax and Ativan are both benzodiazepene $GABA_A$ receptor positive allosteric modulators. Thorazine, a traditional antipsychotic, is a dopamine antagonist.

37. B—A theme in the passage is the challenge in treating bipolar disorder comorbidities of avoiding exacerbating other elements within the symptom complex, especially the core mood disturbance. In the particular context of the discussion in the question stem regarding SSRIs and SNRIs the point is made that "antidepressent activation" has been associated with more rapid mood switching in bipolar depression.

39. A—An empirically supported treatment, interpersonal psychotherapy is a brief, attachment-focused psychotherapy that centers on resolving interpersonal problems and symptomatic recovery. Interpersonal therapy has theoretical foundations in the interpersonal psychoanalysis of Harry Stack Sullivan, who along with other neo-Freudians of his time repudiated Freud's drive theory while preserving and expanding many Freudian concepts. Rogers' person-centered psychotherapy and Gestalt therapy are two other prominent modern psychotherapies with neo-Freudian roots.

40. A—The statement is most congruent with the cognitive-behavioral approach. Person-centered therapy, psychoanalysis, and Gestalt therapy all place a greater emphasis on the importance of insight learning as the telos of therapy. While insight learning is important in cognitive-behavioral psychology, other forms of learning, including behavioral conditioning and learning through imitation, are important components of therapy.

41. D—This is a difficult, sophisticated question that comes down to the difference between constructivism and phenomenology, the two best answers. Positivism reflects the philosophical underpinnings of the empirical approach (so that is not correct.) The difficulty in the question relates to the issue of constructivism versus phenomenology. Constructivism describes how human beings create systems for meaningfully understanding their worlds and experiences. Phenomenology is primarily concerned with the reflection on and study of the structures of consciousness and the phenomena that appear in acts of consciousness. In that formulation, it almost appears that constructivism is the better answer. However, to get closer to the intent of the question, we have to ask which of the two standpoints is more critical of the empiricist-positivist approach to psychological research, ie. more in-line with the 'human science' of the passage? To understand the difference, it can be productive to reflect on the theoretical underpinnings of Piaget's developmental theories, which are constructivist, versus the underpinnings of Rogers' humanistic, person-centered psychotherapy, which is phenomenological. In Piaget's theories, knowledge is constructed through experience. However, Piaget's approach is positivist, empiricist, and inferential in its research methods. In other words, the psychology researcher employs positivist methods to illuminate the subjectivity of psychological phenomena in constructivism. In phenomenology, though, the subjective experience of the individual is held to be the locus of meaningful knowledge. The phenomenological point of view challenges empirical, nomethetic approaches as misdirected. Rogers' theory was grounded in phenomenological thinking, where the role of the therapist is to listen to the person's unique report of their recent subjective experiences and assist

in achieving insight. The phenomenlogical approach represents the stronger contrast to empiricism, in other words, so represents the better answer.

42. C—Strategic family therapy seeks to address specific problems using theoretical and clinical principles that have the potential of rapid effectiveness and successful outcome, especially with difficult, entrenched problems that have failed to improve in previous treatment efforts. The directness and problem focused orientation of strategic family therapy means that it can often be completed in a shorter time frame than structured family therapy.

43. D—The phenomenon of countertransference was first defined publicly by Freud in 1910 as being a result of the patient's influence on the therapist's unconscious feelings. Freud saw the countertransference as a purely personal problem for the analyst. The contemporary understanding of countertransference is generally to regard countertransference as a jointly created phenomenon between the therapist and the patient. The patient pressures the therapist through transference into playing a role congruent with the patient's internal world. However, the specific dimensions of that role are colored by therapist's own personality.

44. C—Eclectic therapy is a therapeutic approach that incorporates a variety of therapeutic principles and philosophies. Ryan's therapist is combining a behavioral procedure based on classical conditioning principles (systematic desensitization) with Freudian dream interpretation, a psychodynamic method.

45. B—Bandura is the originator of social learning theory (renamed the social cognitive theory) and the theoretical construct of self-efficacy. It's very important to understand the critical role self-efficacy plays in cognitive theory describing mechanisms operating between the self and potential behaviors. (Reinforcement describes the mechanism of behaviors and consequences). Self-efficacy affects every area of human endeavor. By determining the beliefs a person holds regarding his or her power to affect situations, it strongly influences both the power a person actually has to face challenges competently and the choices a person is most likely to make.

46. A—Individuation in Jungian psychology can be defined as the achievement of self-actualization through a process of integrating the conscious and the unconscious.

47. A—In Carl Rogers' framework empathy means understanding another person's point of view without passing any judgement on the appropriateness of their emotions.

48. C—Socratic questioning is a cognitive restructuring technique in cognitive therapy. The purpose here is to help uncover the assumptions and evidence that underpin people's thoughts in respect of problems. Careful use of Socratic questioning enables a therapist to challenge recurring or isolated instances of a person's illogical thinking while maintaining an open position that respects the internal logic to even the most seemingly illogical thoughts.

49 A—Self-monitoring is a core technique in cognitive behavioral therapy. Diary work refers to most commonly utilized specific self-monitoring system. The other choices in this question are also techniques used in cognitive behavioral therapy.

50 B—The requirement is not a PhD or PsyD but a master's degree with a major study in counseling including at least 60 semester or 90 quarter hours of graduate-level academic credit in counseling.

Interaction and Social Behavior

1. Despite his strict libertarian principles, when everyone else at the city council meeting rose for the Pledge of Allegiance, Evan did too. This is an example of

A. obedience
B. compliance
C. conformity
D. groupthink

2. An experiment was conducted to determine the effect of electronic monitoring on students who used web-based training to learn new online search skills. They found that participants who were explicitly told that their training was being monitored performed markedly worse on a post-training skills test than participants who were unaware that their training was being monitored. This is an example of

A. social facilitation
B. social inhibition
C. bystander effect
D. social anxiety

3. The traffic light turns green and Betty begins to accelerate through the intersection, but Gonzalo drives through the red light, crossing in front of her. Betty considers Gonzalo to be unskilled or reckless. She doesn't see that Gonzalo's wife is in labor in the passenger seat. A social psychologist might consider that Betty's view is colored by a particular bias, namely

A. self-serving bias
B. confirmation bias
C. fundamental attribution error
D. defensive attribution

4. Paradoxically, the prevailing conception of the antinormative behaviors which deindividuation leads to in certain situations is actually based on social norms. However, it has been demonstrated that group behaviors vary greatly depending on the situation. Participants who dressed in Ku Klux Klan robes were more willing to deliver electrical shocks to a research confederate, but participants dressed as nurses actually shocked less regardless of whether they were identifiable or anonymous. They explained these results as a product of contextual cues, namely the costumes. In other words, the model for deindividuation is problematic because

A. Deindividuation increases antinormative behavior regardless of external cues.
B. Norms work to promote a great deal of social control.
C. The presence of a group produces unconformity to group norms and standards.
D. Norms are variable and situation specific.

5. During her first semester in college, whenever Angela received a good grade on an exam, she would relate to her mother how hard she had studied, but whenever she received a less than stellar grade, Angela would complain that the professor was bad or that the test was unfair. A social psychologist might see this pattern as an example of

A. actor-perceiver bias
B. self-serving bias
C. fundamental attribution error
D. external locus of control

6. There are reasons why some of the components of 'effective teamwork', such as shared mental models, team orientation and mutual trust, could impair delivery of health care. For example, prior studies have found that brainstorming results in fewer ideas rather than more, and hinders rather than helps productivity. There are several possible explanations for this effect, including 'social loafing' and cognitive overload. Similarly, attributes that improve cohesion within groups, such as team orientation and mutual trust, may increase the risk of poorer decisions. What of the following might be a cause of poor decisions related to group cohesion?

I. illusion of invulnerability
II. pluralistic ignorance
III. groupthink
IV. diffusion of responsibility

A. III only
B. I and IV
C. I, III and IV
D. I, II, III, and IV

7. Omar is a soap opera actor famous for playing a villain on a long running show. Given that most people who know him consider him a good natured fellow, the astonishing amount of hate mail he receives is most likely a result of

A. fundamental attribution error
B. selection error
C. response bias
D. mass hysteria

8. In a classic study conducted by Solomon Asch, _____ increased as the size of the group increased, but only up to a size of five or six participants.

A. obedience
B. conformity
C. cooperation
D. social facilitation

9. Dillon is interested in buying a new gaming console. He tells his father that he will need $400 to purchase it. After his dad angrily refuses, Dillon asks for $150 to purchase a lesser console. This is what he had wanted all along, and his father agrees. What is the name of the compliance tactic employed by Dillon in this case?

A. door-in-the-face
B. low-ball
C. foot-in-the-door
D. norm of reciprocity

10. Research has shown that individuals often smile in response to movie characters or photos showing the same expressions, or they will begin to laugh when seeing others laugh. Which of the following is best exemplified by these findings?

A. empathy
B. deindividuation
C. emotional contagion
D. impression management

11. Examining cognitive and affective components of intimate partner violence (IPV) related social information processing (SIP), initial evidence suggests that violent and non-violent males may differ in multiple domains of SIP. Abusive males evidence a less robust behavioral repertoire for responding to conflict in the final stage of SIP, as evidenced by greater reliance upon aggressive reactions and the generation of fewer non-violent alternatives in laboratory paradigms when compared to non-violent males. Cognitive biases broadly represent irrational thought patterns about the self (e.g., "I can never do anything right") and others ("Everyone in this world is against me") that arise with little conscious effort and reflect more deeply embedded patterns of maladaptive cognitive processing. Similarly, hostile attributions refer to the interpretation of ambiguous stimuli as intentionally threatening or motivated by hostile intent (e.g., "She meant for this to happen just to get back at me."). Greater cognitive biases and hostile attributions have been detected among IPV relative to non-violent males, suggesting that maladaptive cognitive processing during SIP may exacerbate negative affect into intense anger as described by the cognitive neoassociationistic (CNA) model of Berkowitz (2011) and thus increase the likelihood of IPV perpetration. Given the rapidity of cognitive processing inherent in both the CNA and SIP models, the association between cognitive distortions and aggression may be more easily detected using novel, observational methodologies that aim to assess these constructs in the context of concurrent anger arousal.

The description of cognitive biases in the passage above relies upon which of the following?

A. Ellis' irrational beliefs
B. Berkowitz' cognitive neoassociationist model
C. Beck's cognitive triad
D. Erikson's stage theory

12. After he runs over a pothole in his neighborhood, Reginald starts yelling in his car about corruption in the city government. However, the next week, when he's driving behind another car and sees it strike the pothole, he starts laughing about how absent minded the driver is not to see it. Reginald's tendency to focus on external factors to explain his own behavior but dispositional factors to explain the behavior of others exemplifies:

A. fundamental attribution error
B. self-serving bias
C. actor-observer discrepancy
D. positivity bias

13. In one variation of the Asch Paradigm, subjects were asked to write, rather than call out, their particular responses while the confederates in the study verbalized their responses aloud. In this condition, subjects' answers were correct 99% of the time. Which rival hypothesis to the original study conclusions was this variation of the study trying to rule out?

A. that group norms affected the subjects' perceptions of the lines
B. that subjects in the original study often were "just going along"
C. that subjects believed they must be wrongly interpreting the stimuli
D. that conformity increases with the size of the opposing group

14. Rupert is an audiophile. He is enthusiastic about all aspects of high-fidelity sound reproduction. While reading *High End Audio* magazine, he comes across an advertisement for a digital-to-analog converter. The advertisement provides laboratory findings from three independent studies that support the advertisement's claims that the converter provides the absolute highest fidelity conversion process available on the market. Rupert decides that he must have the device, so he goes online to make the purchase. Rupert's decision-making process is an example of

A. heuristic processing
B. latitude of acceptance
C. the peripheral route of persuasion
D. the central route of persuasion

15. An experiment was conducted which attempted to get people to stop writing graffiti on the walls of campus restrooms. In some restrooms experimenters posted a sign that read "Do not write on these walls under any circumstances!" whereas in other restrooms they placed a sign that simply said "Please don't write on these walls." Two weeks later, the researchers returned to the restrooms to see if the signs had made a difference. They found that there was much less graffiti in the second restroom than in the first one. These results exemplify which of the following?

A. reactance
B. cognitive dissonance
C. social proof
D. coercive persuasion

16. In an experiment 225 female students rated a series of common, domestic appliances, and then were allowed to choose one of two appliances as gifts to take home. A second round of ratings indicated that the participants increased their ratings of the domestic appliance they chose, and lowered their ratings of the appliances they rejected. This can best be explained in terms of

A. self-fulfilling prophecy
B. cognitive dissonance
C. self-discrepancy theory
D. affective forecasting

17. Obedience is distinguished from conformity by

A. the central route of persuasion
B. the vertical transmission of influence
C. the presence of negative reinforcement
D. the degree of compliance

18. Which of the following explanations of the mechanism by which hazing rituals increase group solidarity reflects an approach based on cognitive dissonance?

A. Group identity among initiates increases as feelings of being rewarded increase.
B. Hazing rituals increase physiological responses, which then cause an increase in affiliation among initiates.
C. Humans are motivated to seek attachment in moments of danger or stress.
D. Justifying endurance of humiliating tasks leads the new member to increase the subjective value of the group.

19. A 2012 commercial for Carl's Jr. fast food chain starring Kate Upton featured her writhing, sweating and undressing in the backseat of a car while enjoying a Southwest Patty Melt. Carl's Jr. was trying to influence attitudes through

A. classical conditioning
B. reciprocity norms
C. social influence
D. central route of persuasion

20. Before conducting his famous study, Milgram asked forty pschiatrists to forecast the outcome. Most felt that only a small percentage (0.1 percent) of subjects would go all the way up to 450 volts. However, a remarkable 62% of subjects displayed complete compliance. Which of the following best explains why the psychiatrists Milgram interviewed believed that most people would disobey obviously cruel and outrageous orders?

A. just-world phenomenon
B. fundamental attribution error
C. base rate fallacy
D. defensive attribution

21. The principal of a high school received multiple parental complaints that one of her veteran teachers had lost his temper in class and used profanity. Thinking over the matter, she came up with several explanations for why this had happened. One possible explanation was that the man was going through a divorce and was under a lot of pressure. This explanation is an example of

A. dispositional attribution
B. defensive attribution
C. external attribution
D. actor/observer discrepancy

22. The difference between an attitude and a belief is best expressed by which of the following statements?

A. An attitude represents the cognitive component of a belief.
B. An attitude has emotional and behavioral components.
C. Attitudes can be patently false.
D. Attitudes may be highly resistant to change.

23. Which of the following describe a dynamic characterized by self-fulfilling prophecy?

I. Rosenthal effect
II. stereotype threat
III. placebo effect
IV. experimenter-expectancy effect

A. I only
B. II and III
C. I, II and III
D. I, II, III and IV

24. Which of the following forms of bias is more characteristic of the attributional style of people within invidualistic societies than people within collectivist societies?

A. self-effacing bias
B. fundamental attribution error
C. learned helplessness
D. positivity effect

25. Researchers examining sexual assault have consistently found that male participants blamed rapists less than female participants did, and that male participants blamed the rape victims more than female participants did. These findings support the similarity-responsibility hypothesis: male participants, who are personally similar to (male) rapists, blame rapists less than female participants who are dissimilar to rapists. On the other hand, female participants, who are personally similar to (female) rape victims, blame the victims less than male participants. The attributional approach of the male and female subjects of this study is best described as:

A. defensive
B. self-serving
C. fundamental attribution error
D. victim blaming

26. Survey results demonstrated a decrease in patriotic attitudes among students of a middle school after one year in which the students were required to recite the Pledge of Allegiance every morning in home room. Which of the following best explains the shift in attitudes found by the study?

A. cognitive dissonance
B. public conformity
C. reactance
D. private conformity

27. Public conformity is to compliance as private conformity is to _____.

A. deviance
B. obedience
C. identification
D. internalization

28. Milton was visiting his family doctor for a sore throat. During the appointment, as an aside, his doctor recommended that Milton make an appointment in two weeks for a cholesterol screening and a few other simple tests. Given that Milton is 51 years old, the doctor explains the beneficial nature of having these tests at this age. Milton agrees and they make the appointment. The doctor leaves the exam room, returning ten minutes later with Milton's prescriptions. At this time he asks, 'While you are coming in next week, why don't we go ahead and schedule a screening colonoscopy? That's also routine at 50 years old.' Which compliance strategy is Milton's doctor employing?

A. foot-in-the-door
B. low-ball
C. bait-and-switch
D. door-in-the-face

29. Sunbathers on the beach notice a child splashing wildly in the water. Each person on the beach notices that none of the other sunbathers are yelling or appear concerned. They conclude that the child is just playing around. The tendency of people to look towards others for cues about how to behave when confronted with an emergency even when they themselves have doubts about the situation is an example of:

A. groupthink
B. diffusion of responsibility
C. pluralistic ignorance
D. conformity

30. Compared to the original paradigm, in trials where one confederate selected a different line from the others in the Asch conformity experiment, the observed effect was that

A. conformity of the participant moderately increased
B. participants conformed with the majority to a much lesser degree
C. participants concluded they must be wrongly interpreting the stimuli
D. the level of conformity increased dramatically

31. In Leon Festinger's famous experiment, participants were asked to perform a boring task. They were divided into 2 groups and given two different pay scales. At the study's end, some participants were paid $1 to say that they enjoyed the task and another group of participants was paid $20 to say the same lie. What did Festinger observe?

A. The first group ($1) later reported liking the task better than the second group ($20).
B. The second group ($20) later reported liking the task better than the first group ($1).
C. The size of the monetary reward had no effect on the degree to which the members of either group reported liking the task.
D. While the second group ($20) reported liking the task more, the members of the first group ($1) were more willing to participate in further studies.

32. A subsequent study found that participanin the situation of the Asch conformity study experienced greatly increased levels of autonomic arousal. This might lead to concerns regarding the _____ of the experimental design.

A. validity
B. reliability
C. bias
D. ethics

33. Greece's military junta in the early 1970's instituted a program to train personnel to become torturers. First the trainee stood guard outside the interrogation cells. Next he stood guard inside. Only afterwards was he ready to become actively involved in the interrogation and torture. Which compliance technique is the basis for these procedures?

A. low-ball
B. foot-in-the-door
C. diffusion of responsibility
D. pluralistic ignorance

34. In the context of crowd psychology, _____ hinges upon a person being unable, due to situation, to have strong awareness of their self as an object of attention. This lack of attention frees the individual from the necessity of normal social behavior.

A. mass hysteria
B. conformity
C. the herd mentality
D. deindividuation

35. Muzafer Sherif's experimental study of autokinetic movement demonstrated how mental evaluation norms were created by human beings. In an otherwise totally dark room, a small dot of light is shown on a wall, and after a few moments, the dot appears to move. This effect is entirely inside the head, and results from the complete lack of "frame of reference" for the movement. Three participants enter the dark room, and watch the light. It appears to move, and the participants are asked to estimate how far the dot of light moves. These estimates are made out loud, and with repeated trials, each group of three converges on an estimate. Some groups converged on a high estimate, some low, and some in-between. The critical finding is that groups found their own level, their own "social norm" of perception. This occurred naturally, without discussion or prompting. When invited back individually a week later and tested alone in the dark room, participants replicated their original groups' estimates.

How do results in Sherif's autokinetic experiment differ from the results in the Asch paradigm?

A. In the Sherif study, the test was perceptually ambiguous.
B. The results in the Sherif study demonstrate internalization, not merely compliance.
C. In the Asch study, the perceptual task was clear.
D. Results in the Sherif study demonstrate how individuals yield to a majority opinion.

36. When we conform because we believe that others' interpretation of an ambiguous situation is more accurate than ours and will help us choose an appropriate course of action, this is called:

A. normative social influence
B. informational social influence
C. peer pressure
D. argumentum ad populum

37. A person who has been unemployed for a long time may have a hard time finding a new job - even if they are highly skilled and qualified. Potential employers search more intensively for flaws or other negative characteristics that are "congruent" with or explain the person's failure and discount the applicant's virtues. Which of the following best describes such a process of opinion formation?

A. social proof
B. normative social influence
C. halo effect
D. observational learning

38. As opposed to a person from a collectivist society, a person from an individualist society who violates an ethical principle is more likely to experience a feeling of:

A. shame
B. guilt
C. stigma
D. dishonor

39. According to cognitive dissonance theory, there is a tendency for individuals to seek consistency among their cognitions. When there is an inconsistency between attitudes or behaviors, something must change to eliminate the dissonance. Self-perception theory posits that people determine their attitudes and preferences by interpreting the meaning of their own behavior. The main difference between self-perception theory and cognitive dissonance theory is:

A. the part played by arousal
B. the direction of attitudinal change after engaging in a counterattitudinal behavior
C. the role of the observer versus the role of the participant
D. sociocultural

40. A management consulting firm hired by a corporation advocates that they revise certain human resources practices at the team level. However, team leaders in the company oppose the change. The management consulting firm enlists the team leaders in the project of advocating the change to other members of the company with incrementally escalating requests. In order to bring about an attitude change in the team leaders, the consulting firm should accompany these requests with

A. small rewards
B. punitive sanctions if they don't comply
C. substantial bonuses for results
D. data based rationale

41. Cora hadn't really ever throught about the deterioration of the ecosystem of the Mississippi Delta due to agricultural runoff. It just hadn't come up in her life. For her ecology class, however, she was required to attend a presentation by a speaker about the need to increase financial support to efforts aimed at saving the Mississippi Delta. According to the elaboration likelihood model, what would be the strategy for the speaker in their presentation that would be most likely persuade Cora to write a letter to her congressional representative to increase government efforts to save the Mississippi Delta?

A. A detailed cost-benefit analysis showing how only a small investment could reverse negative ecological trends in the Mississippi Delta.
B. A scientific study showing how deterioration of the Mississippi Delta would impact local economies in future decades.
C. An expensively produced video hosted by a famous actress describing the impact of deterioration of the Mississippi Delta on charismatic oceanic megafauna.
D. A presentation showing the economic winners and losers if current practices continue allowing large quantities of agricultural runoff to enter the Mississippi Delta.

42. Joseph owns a house in a nice neighborhood. It has been a struggle pay the mortgage over the years. For this reason, Joseph is opposed to an increase in the millage rate for school funding proposed by his county commissioner which would cause Joseph's property taxes to increase. After hearing Joseph's point of view at a community meeting, the functional view of attitudes suggests which of the following counter-arguments by Joseph's commissioner would be most persuasive?

A. Children in the community rely on the schools to help them get a good start in the world.
B. Ensuring a good educational system is the best long-term program to reduce crime in the community.
C. Their county was listed several years ago by a national magazine as one of the best at providing quality of life in the country with the school system a main asset.
D. Data show that the single biggest factor in increasing property values is the quality of the neighborhood schools.

43. Oliver and Martin are equally attractive physically. However, Oliver is a low self-monitor, but Martin is a high self-monitor. Oliver is more likely than Martin to:

A. maintain consistent behavior through different situations
B. have multiple romantic relationships in a given year
C. require social information to guide his self-presentations
D. more likely to recall personal details about the people he meets

44. Tom was described to participants of a study on social perception as having an ultra-conservative philosophy based on traditional values. Participants were then asked to choose which was more likely, whether Tom was an "engineer" or whether he was an "engineer and a gun owner." Which of the following is the best explanation for the fact that study participants chose the latter option more often than the first option?

A. availability heuristic
B. bias blind spot
C. illusory correlation
D. representativeness heuristic

45. Marcus, Tonya and their group of friends have been making their way through Sergio Leone Westerns in their weekly movie nights which they hold at different apartments. Tonya had not seemed to enjoy 'The Good, the Bad, and the Ugly' the first week. Nor had she enjoyed 'Hang 'em High' the second week, but Marcus noticed that during their latest movie night Tonya really had seemed to enjoy 'Fistful of Dollars." This was good because everyone had been enjoying the movie selections. Tonya even liked the drama they watched afterwards. According the covariation model which would be the most likely explanation for Tonya's reaction to 'Fistful of Dollars'?

A. The plot of 'Fistful of Dollars' was simply more exciting for Tonya.
B. When Tonya gives herself a chance she can enjoy things she might not expect to enjoy.
C. Tonya's taste in movies is unsettled.
D. The particular circumstances that evening had put Tonya in a good mood.

46. Archival studies suggest that the urban riots that erupted in many American cites in the 1960s were most likely to occur on hot days and then to diminish in intensity as the weather cooled. This observation is most consistent with which of the following theories of aggression?

A. cognitive neo-association theory
B. frustration-aggression hypothesis
C. catharsis hypothesis
D. challenge hypothesis

47. Ralph and his four housemates are in the living room of their apartment when they hear a loud crash and a howl of pain outside the door. What is most likely to be Ralph's response?

A. immediately calling 911
B. looking to his housemates to follow their cue
C. running to the window to see if anyone is hurt
D. offering assurance that most likely nothing serious has happened

48. Which of the following is most likely to lead to a person experiencing feelings of sympathy and compassion while witnessing another person undergoing a painful medical procedure?

A. imagining the pain the person is experiencing from that person's perspective
B. imagining themselves to be in similar pain
C. if there is strong activation of amygdala, insula and anterior cingulate cortex
D. if the observer is experiencing feelings of discomfort and anxiety

49. The embarassing predicament of college student attending a social gathering who encounters his professor as a fellow guest is best described as:

A. role conflict
B. position conflict
C. role confusion
D. identity crisis

50. In one experiment, children were left in a room with a variety of toys, including a greatly desirable steam shovel. Upon leaving the room, the experimenter told one-half of the group of children that there would be severe punishment if they played with the steam-shovel; and told the second half of the group that there would be a mild punishment for playing with the steam shovel. All of the children refrained from playing with the the steam shovel. Later, when the children were told that they could freely play with any toy they wanted, the children in the mild-punishment group were less likely to play with the steam shovel. Which of the following concepts provides the best framework for understanding the results of this experiment?

A. cognitive dissonance
B. operant conditioning
C. classical conditioning
D. observational learning

Answer Key
Interaction and Social Behavior

1. **C—**Conformity is matching attitudes, beliefs, or behaviors to group norms. Norms are implicit, specific rules, shared by a group of individuals, that guide their interactions with others. This tendency to conform occurs in small groups and/or society as a whole, and may result from subtle unconscious influences, or direct and overt social pressure. Conformity can occur in the presence of others, or when an individual is alone. Private conformity occurs when we change our behaviors and our attitudes. Public conformity occurs when we just change our behavior.

2. **A—**Social facilitation, or the audience effect, is the tendency for people to perform *differently* when in the presence of others than when alone. Compared to their performance when alone, when in the presence of others, they tend to perform better on simple or well-rehearsed tasks and worse on complex or new ones. The Yerkes-Dodson law, when applied to social facilitation, states that "the mere presence of other people will enhance the performance in speed and accuracy of well-practiced tasks, but will degrade the performance of less familiar tasks."

3. **C—**The fundamental attribution error, also known as the correspondence bias or attribution effect, is the claim that in contrast to interpretations of their own behavior, people place undue emphasis on internal characteristics of the agent (character or intention), rather than external factors, in explaining other people's behavior.

4. **D—**The discussion regards the problem inherent in a definition of deindividuation that depends on a concept of antinormative behavior. The problem is that this definition may not be able to properly encompass deindividuation effects within the context of situational norms. Choice 'D' exemplifies this issue.

5. **B—**Self-serving bias refers to the tendency for individuals to ascribe success to their own abilities and efforts, but to ascribe failure to external factors.

6. **D—**All four are related to group cohesion and might contribute to poor decisions. Illusion of invulnerability refers to an inflated certainty that the right decision has been made by a group while significantly overrating its own abilities in decision-making. Pluralistic ignorance is a situation in which a majority of group members privately reject a norm, but incorrectly assume that most others accept it, and therefore go along with it. Groupthink occurs when the desire for harmony or conformity results in an irrational or dysfunctional decision-making outcome. Diffusion of responsibility is a phenomenon whereby a person is less likely to take responsibility for action or inaction when others are present. The individual assumes that others either are responsible for taking action or have already done so.

7. **A—**A classic result of fundamental attribution error. Instead of seeing Ricardo's behaviors in the show as the result of external factors (a script!) some people attribute the behaviors to internal characteristics.

8. **B—**the Asch conformity experiments refer to a series of studies directed by Solomon Asch studying if and how individuals yielded to or defied a majority group and the effect of such influences on beliefs and opinions. In the basic variation of the experiment, groups of male college students participated in a simple "perceptual" task. In reality, all but one of the participants were "confederates" (i.e., actors), and the true focus of the study was about how this subject would react to the confederates' behavior.

9. **A—**The door-in-the-face technique begins with an initial grand request. This request is expected to be turned down. The first request is then followed by a second, more reasonable request.

10. **C—**Emotional contagion is the phenomenon of having one person's emotions and related behaviors directly trigger similar emotions and behaviors in other people.

11. **C—**The passage contains the following section: "Cognitive biases broadly represent irrational thought patterns about the self (e.g., "I can never do anything right") and others ("Everyone in this world is against me") that arise with little conscious effort and reflect more deeply embedded patterns of maladaptive cognitive processing." This analysis descends directly from Aaron Beck's cognitive model of depression. Beck's cognitive triad involves automatic, spontaneous and seemingly uncontrollable negative thoughts about the self, the world, and the future.

12. **C—**The subtle distinctions between fundamental attribution error, self-serving bias, and actor-observer discrepancy are the stuff that multiple choice question are made of. The particular situation described is best eximplified by actor-observer asymmetry. Actor-observer asymmetry involves the difference between attributions a person makes about themselve versus how they attribute the actions of others. When people judge their own behavior, and they are the actor, they are more likely to attribute their actions to the particular situation than to a generalization about their personality. Yet when an observer is explaining the behavior of another person, they are more likely to attribute this behavior to the actors' overall disposition rather than to situational factors. Reginald is the observer in both cases so there is a discrepancy between his attribution when he is the actor and when he is the observer of the same action by another.

13. **A—**That conformity significantly decreased when shifting from public to written responses demonstrated that the incorrect responses occurred due to a desire to conform to group norms not altered perception.

14. **D—**The elaboration likelihood model of persuasion proposes two major routes to persuasion: the central route and the peripheral route. Under the central route, persuasion will likely result from a person's careful and thoughtful consideration of the true merits of the information presented in support of an advocacy. The central route involves a high level of message elaboration in which a great amount of cognition about the arguments are generated by the individual receiving the message. The results of attitude change will be relatively enduring, resistant, and predictive of behavior. On the other hand, under the peripheral route, persuasion results from a person's association with positive or negative cues in the stimulus or making a simple inference about the merits of the advocated position. The cues received by the individual under the peripheral route are generally unrelated to the logical quality of the stimulus. These cues will involve factors such as the credibility or attractiveness of the sources of the message, or the production quality of the message.

15. **A—**Reactance can occur when someone is heavily pressured to accept a certain view or attitude causing the person to adopt or strengthen a view or attitude that is contrary to what was intended, and also increases resistance to persuasion. Reactance occurs when a person feels that someone or something is taking away his or her choices or limiting the range of alternatives.

16. **B—**Leon Festinger's 1957 theory of cognitive dissonance focuses on how human beings strive for internal consistency. A person who experiences inconsistency tends to become psychologically uncomfortable, and so is motivated to try to reduce the cognitive dissonance occurring, trying to "justify"

their behavior by changing or adding new parts of the conflicting cognition, as well as actively avoids situations and information likely to increase the psychological discomfort. This particular experiment demonstrates that when making a difficult decision, there are always aspects of the rejected choice that one finds appealing and these features are dissonant with choosing something else. In other words, the cognition, "I chose X" is dissonant with the cognition, "There are some things I like about Y."

17. B—Obedience, in human behavior, is a form of social influence in which a person yields to explicit instructions or orders from an authority figure. Obedience is generally distinguished from conformity, which is behavior intended to match that of the majority.

18. D—The operative concept in the cognitive dissonance model of hazing is effort justification. Effort justification is people's tendency to attribute a greater value to an outcome they had to put effort into acquiring or achieving.

19. A—Advertising is mostly based in classical conditioning. The advertised product is the Conditioned Stimulus. The ultimate goal of the ad is to make viewers associate the feeling they had watching the ad, the Unconditioned Response, with the product when they come across with it in real life, forming a Conditioned Response.

20. B—Fundamental attribution error describes how people place undue emphasis on internal characteristics of the agent (character or intention), rather than external factors, in explaining other people's behavior. The psychiatrists underestimated the impact of the situation on the subjects' behavior.

21. C—External attribution, also called situational attribution, refers to interpreting someone's behavior as being caused by the situation that the individual is in. This is opposed to dispositional attribution, which is a tendency to attribute people's behaviors to their dispositions; that is, to their personality, character, and ability.

22. B—In the multicomponent model, attitudes are evaluations of an object that have cognitive, affective, and behavioural components. Beliefs about the object would be an aspect of the cognitive component of the attitude. Regarding choice 'D'. This is a true statement, but it is true about both attitudes and beliefs.

23. D—A self-fulfilling prophecy is a prediction that directly or indirectly causes itself to become true, by the very terms of the prophecy itself, due to positive feedback between belief and behavior. The Pygmalion effect, or Rosenthal effect, is the phenomenon whereby higher expectations lead to an increase in performance. Stereotype threat is a situational predicament in which people are or feel themselves to be at risk of conforming to stereotypes about their social group. Stereotype threat has been shown to reduce the performance of individuals who belong to negatively stereotyped groups.

24. B—People from individualist cultures are more inclined to make fundamental-attribution error than people from collectivist cultures. Individualist cultures tend to attribute a person's behavior to his internal factors whereas collectivist cultures tend to attribute a person's behavior to his external factors.

25. A—Defensive attribution is motivated as a shield against the fear that one will be the victim or cause of a serious mishap. Commonly, defensive attributions are made when someone witnesses or learns of mishaps involving other people. These attributions of blame will depend upon any similarities between the witness and the person(s) involved in the mishap. More responsibility will be attributed as personal or situational similarity decreases. Assigning responsibility allows the observer to believe that the mishap was controllable and thus preventable.

26. C—Reactances can occur when someone is heavily pressured to accept a certain view or attitude. Reactance can cause the person to adopt or strengthen a view or attitude that is contrary to what was intended, and also increases resistance to persuasion.

27. D—Public conformity and compliance are synonyms. So are private conformity and internalization.

28. B—Both the low-ball technique and foot-in-the-door involve getting agreement to a small request which will then be followed by a large request. The difference is that low-ball only requires agreement to the small request before the larger request is introduced. Foot-in-the-door requires actual completion of the small request first.

29. C—Pluralistic ignorance describe a situation in which a majority of group members privately reject a norm, but incorrectly assume that most others accept it, and therefore go along with it. It is a type of conformity. In short, pluralistic ignorance is a bias about a social group, held by that social group. Pluralistic ignorance may help to explain the bystander effect. If no-one acts, onlookers may believe others believe that action is incorrect, and may therefore themselves refrain from acting. The bystander effect may alternatively occur as a result of diffusion of responsibility, whereby a person assumes that others either are responsible for taking action or have already done so.

30. B—Asch found that the presence of a "true partner" (a "real" participant or another actor told to give the correct response to each question) decreased conformity. In studies that had one confederate give correct responses to the questions, only 5% of the participants continued to answer with the majority.

31. A—The first group ($1) later reported liking the task better than the second group ($20). Festinger's explanation was that for people in the first group being paid only $1 is not sufficient incentive for lying and those who were paid $1 experienced cognitive dissonance. They could only overcome that dissonance by justifying their lies by changing their previously unfavorable attitudes about the task. Being paid $20 provides a reason for the doing the boring task, therefore no dissonance.

32. D—In the Asch conformity experiment, participants subjected to a level of psychological stress similar to a conflict situation when they disagreed with the majority. A key goal of IRBs is to protect human subjects from physical or psychological harm, so it is questionable whether the Asch conformity experiment in its original design would be approved today.

33. B—Foot-in-the-door technique involves getting a person to agree to a large request by first setting them up by having that person agree to a modest request.

34. D—Deindividuation is a concept in social psychology that is generally thought of as the loss of self-awareness in groups.

35. B—The critical finding in Sherif's study is that groups found their own level, their own "social norm" of perception. When invited back individually a week later and tested alone in the dark room, participants replicated their original groups' estimates. This suggests that the influence of the group was informational rather than coercive; because they continued to perceive individually what they had as members of a group, Sherif concluded that they had internalized their original group's way of seeing the world. Because the phenomenon of the autokinetic effect is entirely a product of a person's own perceptual system, this study is evidence of how the social world pierces the person's skin, and affects the way they understand their own physical and psychological sensations.

36. B—Informational social influence, also called social proof, is a psychological phenomenon where people assume the actions of others in an attempt to reflect correct behavior for a given situation. This effect is prominent in ambiguous social situations where people are unable to determine the appropriate mode of behavior, and is driven by the assumption that surrounding people possess more knowledge about the situation. Informational social influence is contrasted with normative social influence wherein a person conforms to be liked or accepted by others.

37. A—Social proof is synonymous with informational social influence, as opposed to normative social influence. Social proof is prominent in ambiguous situations where people are unable to determine the appropriate mode of behavior, and is driven by the assumption that surrounding people possess more knowledge about the situation. In employment situations, the case of a well-qualified applicant who is inexplicably long unemployed would violate social proof and cause cognitive dissonance, ie. a sense of loss of control or failure of the "just world hypothesis".

38. B—In an individual who has violated an ethical principle, different cultural values can trigger different dissonance experiences. Generally speaking, people in independent societies experience dissonance when their behavior violates either a personal standard or a social standard. Violation of a personal standard engenders feelings of guilt. People in interdependent societies, however, are much more concerned about violations of social standards. Shame is quintessentially a social emotion.

39. A—This is the main difference between cognitive dissonance theory and self-perception theory. In self-perception theory, people induce attitudes without accessing internal cognition and mood states. The person interprets their own overt behaviors rationally in the same way they attempt to explain others' behaviors.

40. A—According to cognitive dissonance theory, if there isn't an external reason for the team leaders to state the position (a small reward wouldn't qualify) they are likely to change their beliefs to match the position.

41. C—The elaboration likelihood model (ELM) aims to explain different ways of processing stimuli, why they are used, and their outcomes on attitude change. The ELM proposes two major routes to persuasion: the central route and the peripheral route. Under the central route, persuasion will likely result from a person's careful and thoughtful consideration of the true merits of the information presented in support of an advocacy. The central route involves a high level of message elaboration in which a great amount of cognition about the arguments are generated by the individual receiving the message. The results of attitude change will be relatively enduring, resistant, and predictive of behavior. On the other hand, under the peripheral route, persuasion results from a person's association with positive or negative cues in the stimulus or making a simple inference about the merits of the advocated position. The cues received by the individual under the peripheral route are generally unrelated to the logical quality of the stimulus. These cues will involve factors such as the credibility or attractiveness of the sources of the message, or the production quality of the message. The peripheral route is more effective than the central route, as in this case, when the message recipient has little or no interest in the subject and/or has a lesser ability to process the message.

42. D—The functional view of attitudes suggests that in order for attitudes to change via persuasion, appeals must be made to the function(s) that a particular attitude serves for the individual. Daniel Katz, the theorist most responsible for this approach, classified atti-

tudes into four different groups based on their functions: utilitarian, knowledge, ego-defensive, and value expressive. Joseph's attitude towards the proposed increase in property taxes is utilitarian, so for the commissioner's argument to have the greatest chance of being persuasive to Joseph it should address that function.

43. A—High self-monitors find it much easier to modify their behavior based on the situation than low self-monitors do. High self-monitors would be more likely to change their beliefs and opinions depending on who they are talking to, while low self-monitors would tend to be consistent throughout all situations.

44. D—When people rely on representativeness to make judgments, they are likely to judge wrongly because the fact that something is more representative does not actually make it more likely.

45. D—Everyone has been enjoying the Westerns (high consensus). Tonya didn't enjoy the Westerns on the other nights (low consistency), but she enjoyed BOTH the Western and the drama they watched later on this evening (low distinctiveness) . Under the covariance model her reaction would be attributed as caused by something in the circumstance (something about that particular night), not the stimulus (an external attribution regarding the particular movie) nor a personal attribution (an internal attribution).

Low Consensus, Low Distinctiveness, High Consistency = Personal Attribution

High Consensus, High Distinctiveness, High Consistency = Stimulus Attribution

High Consensus, Low Distinctiveness, Low Consistency = Circumstance Attribution

46. A—Leonard Berkowitz originated the cognitive neoassociation model of aggressive behavior to help explain instances of aggression for which the frustration-aggression hypothesis could not account. Berkowitz asserted that frustration is just one of many factors that can stimulate negative affect. Besides frustration, other aversive factors such as pain, extreme temperatures, and encountering disliked people can also cause negative affect leading to aggression.

47. B—The typical response would be to look to the others in the group to guide future behavior. This form of pluralistic ignorance is the basis bystander effect, first demonstrated in the laboratory by John Darley and Bibb Latané. Their experiments found that the presence of others inhibits helping, often by a large margin.

48. A—Empathic concern refers to other-oriented emotions elicited by and congruent with the perceived welfare of someone in need These other-oriented emotions include feelings of tenderness, sympathy, and compassion. Empirical studies conducted by social psychologist Daniel Batson have demonstrated that empathic concern is felt when one adopts the perspective of another person in need. Different emotions are evoked when imagining another situation from a self-perspective or imagining from another perspective. Imagining from a self-perspective is associated with personal distress (i.e., feelings of discomfort and anxiety), whereas the latter leads to empathic concern.

49. C—Role confusion occurs in a situation where an individual has trouble determining which role he or she should play, but where the roles are not necessarily incompatible (which would describe role conflict).

50. A—The degree of punishment, in itself, was insufficiently strong to resolve the contradiction between the attractiveness of the steam shovel and not to have played with it. In other words, to reduce cognitive dissonance, the children had to convince themselves that playing with the forbidden toy was not worth the effort.

Social Structure and Inequity

1. A theoretical approach to social structure that starts with an empirical phenomenon (as opposed to a broad abstract entity like the social system) and abstracts from it to create general statements that can be verified by data would best be described as:

A. structuralism
B. structural functionalism
C. middle range theory
D. social constructionism

2. When the German teenager, Helmut, learned that the exchange student his family was to be hosting was from Texas, he was upset and unhappy because he expected the fellow to be a gun-loving cowboy with crazy politics who would embarass Helmut at school. Helmut's attitude can best be described as:

A. stigma
B. discrimination
C. valid
D. prejudice

3. All of the following are social groups except:

A. Virginia residents
B. people waiting in line at a bank
C. a mob during a riot
D. a basketball team

4. Of the choices below, which is the best translation into English of the phrase, 'Gemeinschaft und Gesellschaft?'

A. self and group
B. community and society
C. structure and change
D. communication and influence

5. Absent immigration or emigration, if the fertility rate within the population of a country is roughly 2.0 births per woman:

A. Population growth would tend towards zero.
B. Population would decline.
C. The answer depends on variation in fertility rates among different age cohorts within the population.
D. The question is impossible to answer without more information.

6. The portion of an individual's self-concept derived from perceived membership in a relevant social group is called:

A. social identity
B. collective identity
C. in-group bias
D. relationship-contingent self-esteem

7. Which choice below does NOT belong among the others?

A. cultural mosaic
B. assimilation
C. global culture
D. melting pot

8. One of the claims in the Universal Declaration of Human Rights is as follows: "Worldwide standards of freedom and justice, based on the principle that man is free only when he lives as his society defines freedom, that his rights are those he recognizes as a member of his society, must be basic." At the time of publication, the anthropologist Julian Steward questioned whether this principle means that anthropologists "approve the social caste system of India, the racial caste system of the United States, or many other varieties of social discrimination in the world." Steward criticism reflects the point of view that:

A. There are no absolute or universal moral standards.
B. The concept of culture, like any other piece of knowledge, can be abused and misinterpreted.
C. It is difficult or impossible to apply the principles of cultural relativism to moral problems.
D. A person's beliefs and activities should be understood based on that person's own culture.

9. The first weeks after Abdul's mother came to live with him and his family in Atlanta, she had seemed delighted. Compared to Sierra Leone, there were many conveniences. However, those feelings soon gave way to unpleasant feelings of frustration and anger. She began to experience events on a daily basis that seemed strange and offensive to her. The traffic, the manners, and the barrage of media all seemed to heighten her sense of disconnection. What was Abdul's mother experiencing?

A. culture bound syndrome
B. neophobia
C. cultural conflict
D. culture shock

10. Richard confided that he prefers hiring Mexican laborers for his construction business. He would say that Mexicans were humble people and they were" willing to work like their bread depended on it!" According to the stereotype content model, through which type of stereotype does Richard view Mexican laborers?

A. paternalistic
B. contemptuous
C. admiration
D. envious

11. In a 2x2 between-group design, Hindu or Muslim participants were asked to make casual attributions for undesirable acts performed by Hindus or Muslims. Hindus attributed external causes to undesirable acts committed by fellow Hindus, but an internal cause for undesirable acts committed by Muslims. Conversely, Muslims attributed external causes to undesirable acts committed by fellow Muslims, but an internal cause for undesirable acts committed by Hindus. This study provides evidence for which of the following?

A. fundamental attribution error
B. ultimate attribution error
C. actor-observer asymmetry
D. cultural bias

12. Which of the following demonstrates explicit stereotyping as opposed to implicit stereotyping?

A. Many individuals are more likely to believe they saw a weapon rather than a cell phone when it is paired with the photo of an African American man.
B. Both male and female subjects associate male category members more strongly than female category members with words like bold, mighty, and powerful.
C. College faculty are less likely to respond to inquiries about research opportunities if the email appears to be from a woman as opposed to an identical email from a man.
D. New parents bring a doll to their first meeting with their adoptive daughter because girls like to play with dolls.

13. Recent experimental psychology suggests that the more power one has, the less one takes on the perspective of others, implying that the powerful have less empathy. Furthermore, researchers investigating the bystander effect found that powerful people are three times as likely to first offer help to a "stranger in distress". From these results it is logical to infer that:

A. Lack of empathy is not necessarily the reason people fail to help to a victim when others are present.
B. Taking on the perspective of another person is not synonymous with empathy.
C. Powerful people have the ability to influence the behavior of other people.
D. Diffusion of responsibility is not a likely cause of the bystander effect.

14. Children from a wealthy family are equipped with skills valued by educational institutions and employers as a result of their parents' socialization and cultural capital. Meanwhile, individuals from less privileged backgrounds are asked to perform at the same level as their more 'capitally-endowed' peers and thus have to work harder to keep even. According to Karl Marx, this produces the dynamic of

A. social mobility
B. class conflict
C. social reproduction
D. plutocracy

15. Realistic conflict theory is a social psychological model of intergroup conflict. The theory explains how intergroup hostility can arise as a result of conflicting goals and competition over limited resources, and it also offers an explanation for the feelings of prejudice and discrimination toward the outgroup that accompany the intergroup hostility. Groups may be in competition for a real or perceived scarcity of resources such as money, political power, military protection, or social status. Feelings of resentment can arise in the situation that the groups see the competition over resources as having a zero-sums fate, in which only one group is the winner and the other loses. The length and severity of the conflict is based upon the perceived value and shortage of the given resource. According to this theory, positive relations can only be restored if:

A. Superordinate goals are in place.
B. Resource surplus removes scarcity.
C. A surrogate victim is chosen through the scapegoating mechanism.
D. Intergroup communication is restored.

16. A study was conducted in which participants were asked to predict attitudes of third parties using a rating system. After being provided with a brief biographical description, a female history major and a female math major were rated as more similar to one another by male judges than by female judges. Of the following choices, these results best exemplify

A. stereotyping
B. out-group homogeneity effect
C. self-fulfilling prophecy
D. cognitive schemas

17. The question of when people rely on stereotypic preconceptions in judging others was investigated in two studies. Subjects exhibited stereotypic biases in their judgments to a much greater extent when the judgments were rendered at a nonoptimal time of day (i.e., in the morning for "night people" and in the evening for "morning people"). In Study One, this pattern was found in probability judgments concerning personal characteristics. In Study Two, the pattern was obtained in perceptions of guilt in allegations of student misbehavior. These results suggest that

A. Pineal gland activity is implicated in increased stereotyping behavior.
B. Stereotyping may be a frustration-aggression response.
C. The propensity to stereotype is related to processing capacity.
D. Stereotyping may be influenced by waking dream mentation.

18. Some sociologists, for instance Karl Polanyi, have argued that relative differences in economic wealth are more important than absolute deprivation, and that it is more significant in determining human quality of life. This suggests that:

A. Poverty can be eliminated by raising total wealth.
B. A person's well-being depends on their actual negative condition.
C. Social inequality is also a factor in well-being.
D. Egoistic and fraternalistic relative deprivation are distinct.

19. Stereotype Implicit Association Tests (IAT) measure associations between concepts that often reflect the strength to which a person holds a particular societal stereotype. For example, the Gender-Science IAT reveals that most people associate women more strongly with liberal arts and men more strongly with science. Compared to a closed question self-report method, which of the following represent advantages of an IAT as a research tool for measuring stereotypes?

I. IAT test procedures largely avoid social-desirability bias.
II. IAT results reveal stereotypes of which the subject is not aware.
III. IAT represents an easier and faster way to collect data.
IV. IAT results are more directly quantifiable.

A. I and II
B. I, II and IV
C. II, and III
D. I, II, III and IV

20. Ambivalent sexism is a framework positing that:

A. Gender based stereotyping occurs on both an in-group and out-group basis.
B. Gender stereotyping has both cognitive and behavioral components.
C. Sexism has two sub-components: hostile sexism and benevolent sexism.
D. The definition of sexism should encompass transphobia.

21. The national social insurance program that provides health-care for Americans aged 65 and older is:

A. Medicare
B. Social Security
C. Medicaid
D. The Affordable Care Act

22. Ramaswamy is an Indian man from an upper caste who supports the current Prime Minister of India, Narendra Modi. Ramaswamy believes that the caste system is an essential part of Indian culture, even though Narendra Modi belongs to a lower middle caste classified as an 'Other Backward Class' under Indian law, a collective term used by the Government of India to classify castes which are socially and educationally disadvantaged. How is Ramaswamy likely to attribute Prime Minister Modi's success?

A. Modi's success demonstrates the value of Indian laws that ensure the rights of lower castes.
B. Modi's elevation was the result of compromises within the BJP Party not his own merit.
C. Modi's success can be attributed to the special treatment he received.
D. Modi is a truly exceptional individual.

23. Subjects in a study were instructed to read descriptions of behaviors performed by members of groups A and B. Negative behaviors outnumbered positive actions and group B was smaller than group A, making negative behaviors and membership in group B relatively infrequent and distinctive. Participants were then asked who had performed a set of actions: a person of group A or group B. Results showed that subjects overestimated the frequency with which both distinctive events, membership in group B and negative behavior, co-occurred, and evaluated group B more negatively. This despite the fact the proportion of positive to negative behaviors was equivalent for both groups and that there was no relationship between group membership and behaviors. The results of this study best exemplify which of the following?

A. outgroup bias
B. ingroup bias
C. ultimate attribution error
D. illusory correlation

24. _____ refers to the difficulty that members of stigmatized or negatively stereotyped groups may have in interpreting feedback. This can lead stigmatized group members to feel uncertainty about whether negative outcomes are due to discrimination against them or their own behavior. In comparison, they might discredit positive feedback as a form of sympathy rather than seeing it as the result of their ability and achievement.

A. stereotype threat
B. attributional ambiguity
C. actor-observer discrepancy
D. fundamental attribution error

25. Which portion of Medicare covers inpatient hospital stays?

A. Part A
B. Part B
C. Part C
D. Part D

26. Jeff does not believe he is a racist, and he never expresses overtly racist views or consciously discriminates. Slavery and Jim Crow were in the past, to his way of thinking, and he believes that blacks in the United States no longer face much prejudice or discrimination. He believes that the failure of blacks to progress results from their unwillingness to work hard enough and that black people depend too much on the government for handouts and programs like affirmative action to get ahead. Which of the following terms is used within sociological research to describe this belief system?

A. traditional values
B. ambivalent prejudice
C. aversive racism
D. symbolic racism

27. A system of established and prevalent social rules that structure social interactions of a set of individuals within a community is called a(n):

A. norm
B. script
C. institution
D. convention

28. Schizophrenia patient is an example of what kind of status?

A. achieved status
B. ascribed status
C. master status
D. ambivalent status

29. Which of the following is an ascribed status?

I. race
II. gender
III. professional certifications
IV. social caste

A. III only
B. I and II
C. I, II and IV
D. I, II, III and IV

30. For Durkheim _____ arises more generally from a mismatch between personal or group standards and wider social standards, or from the lack of a social ethic, which produces moral deregulation and an absence of legitimate aspirations.

A. normlessness
B. anomie
C. deviance
D. alienation

31. Karl Marx is the father of

A. conflict theory
B. functionalism
C. symbolic interactionism
D. utilitarianism

32. A child born in the United States to parents with income in the lowest quintile is more than ten times more likely to end up in the lowest quintile than the highest as an adult (43 percent versus 4 percent). And, a child born to parents in the highest quintile is five times more likely to end up in the highest quintile than the lowest (40 percent versus 8 percent). These statistics best exemplify which of the following:

A. intragenerational mobility
B. social reproduction
C. vertical social mobility
D. meritocracy

33. _____ is the most extreme system of social stratification.

A. the caste system
B. aristocracy
C. slavery
D. plutocracy

34. Which of the following is NOT an ethnic group?

A. Amish
B. African Americans
C. Catholics
D. Sikhs

35. Which of the following best exemplifies a symbolic interactionist approach to prejudice and racism?

A. Prejudice and discrimination derive from the differences in power and economic resources of ethnic groups.
B. For race and ethnic relations to contribute to the harmonious conduct and stability of society, racial and ethnic minorities should assimilate as much as possible into that society.
C. A person is socially determined in a position that involves race, class, and gender and, thus, looking at only one of them to explain their status is incomplete.
D. The question to ask is what happens when two people of different racial or ethnic origins come into contact with each other, and how can such interracial or interethnic contact reduce hostility and conflict.

36. America's 'melting pot' is a metaphor for:

A. multiculturalism
B. pluralism
C. cultural mosaic
D. assimilation

37. One of the provisions of the Affordable Care Act, _____ requires health insurance providers to offer health insurance policies with the same premium to all applicants of the same age and location without regard to gender or most pre-existing conditions (excluding tobacco use). Premiums for older applicants can be no more than three times those for the youngest.

A. community rating
B. the individual mandate
C. guaranteed issue
D. essential health benefits

38. In the 1978 case, *Regents of the University of California v. Bakke*, the U.S. Supreme Court ruled that _____ in college admission decisions violated the Equal Protection Clause.

A. affirmative action
B. using racial quotas
C. using a racial point system
D. considering the applicant's race

39. The ability to impose one's will on others is called _____ when it is perceived as legitimate by the social structure.

A. government
B. power
C. authority
D. a norm

40. The Civil Rights Movement in the United States would be be described as which type of social movment?

A. radical
B. reform
C. innovation
D. conservative

41. _____ challenges the idea that gender is part of the essential self and closely examines the socially constructed nature of sexual acts and identities.

A. feminist theory
B. essentialism
C. queer theory
D. conflict theory

42. To say that gender is an emergent feature of social situations, both as an outcome of and a rationale for various social arrangements, is to apply which approach to gender?

A. constructionist
B. essentialist
C. positivist
D. functionalist

43. The _____ hypothesis suggests that residents of deprived neighbourhoods have universally poorer access to high-quality food environments, which in turn contributes to the development of spatial inequalities in diet and diet-related chronic disease.

A. social reproduction
B. deprivation amplification
C. just-world
D. self-fulfilling prophecy

44. Which of the following countries does NOT provide universal health-care for its citizens?

I. United States
II. Japan
III. France
IV. Germany

A. I only
B. I and II
C. I and IV
D. II, III, and IV

45. _____ is the study and analysis of the social aspects of health and disease conditions.

A. sociobiology
B. biosocial theory
C. epidemiology
D. sociological medicine

46. Corresponding to demographic transition is the epidemiological transition. The epidemiological transition occurs when a country undergoes the process of modernization from developing nation to developed nation status. The developments of modern healthcare and medicine, like antibiotics, drastically reduce infant mortality rates and extends average life expectancy which leads to:

A. congruent increase in population caused by delayed birth rate decreases
B. a high death rate and a high birth rate which are roughly in balance
C. new epidemics in which zoonotic diseases can spread in a more rapid manner and become large outbreaks
D. the replacement of infectious diseases by chronic diseases as the primary cause of death

47. Robert was taken off the lung transplant list after testing positive for nicotine during his last clinic visit. As a result of this, Alphonso, who is five years older, will be next in line to receive a lung transplant. This is an example of

A. vertical equity
B. horizontal equity
C. provider discrimination
D. social inequality

48. A marked increase has been observed in the all-cause mortality of middle-aged white non-Hispanic men and women in the United States between 1999 and 2013. This change reversed decades of progress in mortality and was unique to the United States. No other rich country saw a similar turnaround. The midlife mortality reversal was confined to white non-Hispanics. Black non-Hispanics and Hispanics at midlife, and those aged 65 and above in every racial and ethnic group, continued to see mortality rates fall. This increase for whites was largely accounted for by increasing death rates from drug and alcohol poisonings, suicide, and chronic liver diseases and cirrhosis. Although all education groups saw increases in mortality from suicide and poisonings, and an overall increase in external cause mortality, those with less education saw the most marked increases. Rising midlife mortality rates of white non-Hispanics were paralleled by increases in midlife morbidity. Self-reported declines in health, mental health, and ability to conduct activities of daily living, and increases in chronic pain and inability to work, as well as clinically measured deteriorations in liver function, all point to growing distress in this population. Within Durkheim's sociological framework, the social condition described above exemplifies:

A. strain
B. anomie
C. decompensation
D. alienation

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49. Previous research has identified a wide range of indicators of social isolation that pose health risks, including living alone, having a small social network, infrequent participation in social activities, and feelings of loneliness. However, multiple forms of isolation are rarely studied together, making it difficult to determine which aspects of isolation are most deleterious for health. Using population-based data from the National Social Life, Health, and Aging Project, a study combined multiple indicators of social isolation into scales assessing social disconnectedness and perceived isolation. The study examined the extent to which social disconnectedness and perceived isolation have distinct associations with physical and mental health among older adults. Results indicated that social disconnectedness and perceived isolation are independently associated with lower levels of self-rated physical health. However, the association between disconnectedness and mental health seems to operate mainly through the strong relationship between perceived isolation and mental health. From the results of this study it is reasonable to conclude that:

A. A lack of social connectedness is almost always accompanied by feelings of loneliness and isolation.
B. Reliance on self-reported measures of social connectedness restricts the ability to measure objective social disconnectedness apart from perceived isolation.
C. Older adults who are able to withstand socially isolating circumstances or adjust their expectations so that they do not develop a subjective sense of isolation may fare better.
D. Social disconnectedness and perceived isolation are interchangeable indicators of physical health risks.

50. Bioethicist Edmund Pellegrino proposed a philosophically grounded structure for ethical decision-making in medicine. In Pellegrino's system the fact of illness is conditioned by the limitation placed on personal autonomy of the patient and their degree of vulnerability in illness. Clinicians "profess" specialized knowledge and skill to help those who are ill by an oath at graduation, and they re-articulate this pledge whenever they enter a patient's room wearing public symbols of the profession and offer to help a person who is ill. Pellegrino considers the act of medicine to be first and foremost a relationship with the well being of the patient its goal. The clinician must answer three questions: What can be wrong? What can be done? What should be done? The latter is a moral question. In Pellegrin's construct, the good of the patient is the primary focus of the medical event. There are four distinct levels of good: 1) biomedical good 2) the good as the patient has chosen it 3) the good of the patient as a person 4) the patient's designation of the ultimate good. The patient also incurs moral obligations which include truthfulness, probity, tolerance and trust. Pellegrino is concerned with the good physician: "the one who can be trusted to do what is right even when no one is looking; the one who goes beyond mere duty; the one who does the right thing for the right reasons and with the right attitudes, motives and emotions; the one who can serve as a role model and teach by example." He sees physicians as capable of growing toward this ideal by the application of virtues in practical wisdom.

As described in the passage above, what is a primary difference between Pelligrino's view of a medical doctor's ethical obligations and those described by the Hippocratic oath?

A. the obligation to take a holistic approach to the patient
B. the centrality of the doctor-patient relationship
C. respect for patient autonomy
D. that the patient also has ethical obligations

Answer Key
Social Structure and Inequity

1. **C—**Middle-range theory is currently the de facto dominant approach to sociological theory construction, especially in the United States. Middle-range theory starts with an empirical phenomenon (as opposed to a broad abstract entity like the social system) and abstracts from it to create general statements that can be verified by data. This approach stands in contrast to the earlier "grand" theorizing of social theory, such as functionalism and many conflict theories.

2. **D—**Prejudice is an affective feeling toward a person or group member based solely on their group membership. The word is often used to refer to preconceived, usually unfavorable, feelings toward people or a person because of their sex, gender, beliefs, values, social class, age, disability, religion, sexuality, race/ethnicity, language, nationality, beauty, occupation, education, criminality, sport team affiliation or other personal characteristics. Prejudice refers to a positive or negative evaluation of another person based on their perceived group membership.

3. **B—**A social group has been defined as two or more people who interact with one another, share similar characteristics, and collectively have a sense of unity. A social group exhibits some degree of social cohesion and is more than a simple collection or aggregate of individuals, such as people waiting at a bus stop, or people waiting in a line.

4. **B—**Max Weber used the Gemeinschaft–Gesellschaft dichotomy (first proposed by Ferdinand Tönnies) to accentuate the key elements of a historic/social change. According to the dichotomy, social ties can be categorized, on one hand, as belonging to personal social interactions, and the roles, values, and beliefs based on such interactions (Gemeinschaft, German, commonly translated as "community"), or on the other hand as belonging to indirect interactions, impersonal roles, formal values, and beliefs based on such interactions (Gesellschaft, German, commonly translated as "society").

5. **D—**The total fertility rate (TFR) is a measure of the fertility of an imaginary woman who passes through her reproductive life subject to all the age-specific fertility rates for ages 15–49 that were recorded for a given population in a given year. The TFR represents the average number of children a woman would potentially have, were she to fast-forward through all her childbearing years in a single year, under all the age-specific fertility rates for that year. Replacement fertility is the total fertility rate at which women give birth to enough babies to sustain population levels. If there were no mortality in the female population until the end of the childbearing years then the replacement level of TFR would be very close to 2.0. The replacement fertility rate is roughly 2.0 births per woman for most industrialized countries (2.075 in the UK, for example), but ranges from 2.5 to 3.3 in developing countries because of higher mortality rates. Taken globally, the total fertility rate at replacement is 2.33 children per woman. At this rate, global population growth would tend towards zero.

6. **A—**A social identity is the portion of an individual's self-concept derived from perceived membership in a relevant social group.

7. **A—**Cultural mosaic is the mix of ethnic groups, languages, and cultures that coexist within society. The idea of a cultural mosaic is intended to suggest a form of multiculturalism, different from other systems such as the melting pot, which is often used to describe the United States' supposed ideal of assimilation. The concept of 'global culture' also fits beneath the rubric of assimilation rather than multiculturalism, for example,

in how a shared language gives people the chance to study and work internationally, not just being limited to the same cultural group. People from different countries contribute to diversity and form the "global culture" which means the culture combined by the elements from different countries. This "global culture" can be seen as a part of assimilation that causes cultures from different areas to affect each other.

8. C—Steward and others were arguing that any attempt to apply the principle of cultural relativism to moral problems would only end in contradiction: either a principle that seems to stand for tolerance ends up being used to excuse intolerance, or the principle of tolerance is revealed to be utterly intolerant of any society that seems to lack the (arguably, Western) value of tolerance. They concluded that anthropologists must stick to science, and engage in debates over values only as individuals.

9. D—Culture shock is an experience a person may have when one moves to a cultural environment which is different from one's own. It is also the personal disorientation a person may feel when experiencing an unfamiliar way of life due to immigration or a visit to a new country, a move between social environments, or simply transition to another type of life. One of the most common causes of culture shock involves individuals in a foreign environment. Culture shock can be described as consisting of at least one of four distinct phases: honeymoon, negotiation, adjustment, and adaptation.

10. A—The stereotype content model hypothesizes that stereotypes possess two dimensions: warmth and competence. Social groups are perceived as warm if they do not compete with the ingroup for the same resources and they are considered competent if they are high in status. The combination of warm but not competitive leads Richard to view Mexican workers with a paternalistic stereotype.

11. B—Ultimate attribution error is the best answer. The ultimate attribution error is a group-level attribution error that offers an explanation for how one person views different causes of negative and positive behavior in ingroup and outgroup members. In fact, this particular study, Taylor and Jaggi (1974), was one of those that established the foundation of ultimate attribution error and support its general prediction that negative behaviors by outgroup members are more likely to be attributed to internal causes than negative behaviors of ingroup members.

12. D—Implicit stereotypes operate without conscious intention. Explicit stereotypes are the result of intentional, conscious, and controllable thoughts and beliefs.

13. A—If powerful people are less prone to empathy but, nevertheless, more likely to intervene to help a victim when others are present, then it is logical to infer that the bystander effect is not necessarily due to a lack of empathy among those who fail to render assistance.

14. C—Social reproduction is a concept originally proposed by Karl Marx in Das Kapital refering to the emphasis on the structures and activities that transmit social inequality from one generation to the next. It has been proposed that there are four types of capital that contributes to social reproduction in society: financial capital, cultural capital, human capital, and social capital.

15. A —The Robbers Cave Experiment by Muzafer Sherif represents one of the most widely known demonstrations of Realistic Conflict Theory. Sherif's study was conducted over three weeks in a 200-acre summer camp in Robbers Cave State Park involving 22 eleven- and twelve-year-old boys who

had never previously met and had comparable backgrounds. Sherif made several conclusions. From the study, he determined that because the groups were created to be approximately equal, individual differences are not necessary or responsible for intergroup conflict to occur. Sherif noted that hostile and aggressive attitudes toward an outgroup arise when groups compete for resources that only one group can attain. Sherif also establishes that contact with an outgroup is insufficient, by itself, to reduce negative attitudes. Finally, he concludes that friction between groups can be reduced along with positive intergroup relations maintained, only in the presence of superordinate goals that promote united, cooperative action.

16. B—The out-group homogeneity effect describes how a person's perception of outgroup members as more similar to one another than are in-group members.

17. C—The key term in the passage is 'sub-optimal'. When cognitive resources are more limited, the results suggest that people are more apt to behave as cognitive misers and imply stereotyping heuristics.

18. C—The debate regarding relative vs. absolute deprivation has important consequences for social policy, particularly on whether poverty can be eliminated simply by raising total wealth and regarding the role of egalitarian measures in promoting well-being.

19. A—Implicit Association Tests reveal stereotypes which are not subject to conscious awareness, ie. implicit stereotypes. Compared to self-report surveys, IAT procedures are much less prone to social-desirability bias. Both IAT procedures and closed question self-report surveys (questions which provide a limited choice) lend themselves to easy quantitation.

20. C—Within the theoretical framework of ambivalent sexism, hostile sexism reflects overtly negative evaluations and stereotypes about a gender (e.g., the ideas that women are incompetent and inferior to men). Benevolent sexism represents evaluations of gender that may appear subjectively positive (subjective to the person who is evaluating), but are actually damaging to people and gender equality more broadly (e.g., the ideas that women need to be protected by men).

21. A—Medicare provides health insurance for Americans aged 65 and older who have worked and paid into the system through the payroll tax. In contrast, Medicaid provides healthcare for families and individuals with limited resources.

22. D—Using this mode of reasoning, Ramaswamy can exclude Prime Minister Modi from the outgroup. This is a an attribution strategy within the context of ultimate attribution error to individuate the outgroup member and dissociate them from the group. Compared to the other answer choices, this is the one that allows dissonance between Ramaswamy's prejudice and his support for Prime Minister Modi to be resolved. This view allows for the maintenance of prejudicial beliefs through categorizing the "good" member as an exceptional case, while the other lower caste people are still seen as "bad".

23. D—The study demonstrates the role of illusory correlation in stereotype formation. Illusory correlation is the phenomenon of perceiving a relationship between variables (typically people, events, or behaviors) even when no such relationship exists. A common example of this phenomenon is the formation of a false association between membership in a statistical minority group (e.g., African-Americans) and a rare, typically negative, behavior (e.g., drug abuse). This false association is formed because rare or novel occurrences are more salient and therefore tend to capture one's attention.

24. B—Attributional ambiguity as an element of conceptual terminology might be a step beyond the scope of the MCAT. It's difficult to say. It's on the border. Be that as it may, the other three answer choices are basic terms for the MCAT and you should be able to eliminate them. Understanding why the answer is not 'stereotype threat', for example, is especially salient. Stereotype threat is a situational predicament in which the fear of conforming to a stereotype produces anxiety and hinders performance, most likely by depleting working memory.

25. A—Medicare provides health insurance for Americans aged 65 and older who have worked and paid into the system through the payroll tax. Part A covers inpatient hospital stays. Part B medical insurance helps pay for some services and products not covered by Part A. What this means in a general sense are outpatient services. Part C is optional. Part C offers Medicare recipients the option of receiving Medicare benefits through a capitated health insurance Part C plan. About 30% of Medicare beneficiaries choose to participate in Part C. Part D is the prescription drug benefit portion of Medicare.

26. D—Symbolic racism is a form of modern racism against black people in the United States, as it is more subtle and indirect than more overt forms of racism, such as those characterized in Jim Crow Laws. As symbolic racism develops through socialization and its processes occur without conscious awareness, an individual with symbolic racist beliefs may genuinely oppose racism and believe he is not racist. Symbolic racism is perhaps the most prevalent racial attitude today. Symbolic racism as the expression or endorsement of four specific themes or beliefs: 1) Blacks no longer face much prejudice or discrimination. 2) The failure of blacks to progress results from their unwillingness to work hard enough. 3) Blacks are demanding too much too fast. 4) Blacks have gotten more than they deserve.

27. C—As structures or mechanisms of social order, institutions govern the behaviour of a set of individuals within a given community. Institutions are identified with a social purpose, transcending individuals and intentions by mediating the rules that govern living behavior. The term "institution" commonly applies to both informal institutions such as customs, or behavior patterns important to a society, and to particular formal institutions created by entities such as the government and public services. Primary or meta-institutions are institutions such as the family that are broad enough to encompass other institutions.

28. C—In perception, an individual's master status supersedes other identifying traits. The master status is often the most important architecture of individual identity.

29. C—Status is a social phenomenon rather than a biological one. Ascribed status is the social status a person is assigned at birth or assumed involuntarily later in life. It is a position that is neither earned nor chosen but assigned.

30. B—Most sociologists associate the term 'anomie' with Durkheim, who used the concept to describe how a person is integrated within a system of social norms and practices. Normlessness and anomie are not synonyms because anomie is a mismatch of norms and practices as much as an absence. For example, anomie could be used to describe the cultural results of the mismatch between middle class norms and the actual economic opportunities of young people during periods of economic stagnation. The concept of anomie is important to strain theory, which seeks to develop the relationship between criminal behavior and social structure.

31. A—Conflict theory represents one of the 'four paradigms' of sociology. The other three are represented by the other answer choices. Karl Marx is the father of conflict

theory. Social conflict theory argues that individuals and groups within society interact on the basis of conflict rather than consensus. Marxist theory views class conflict as an engine of historical change, since conflict produces contradictions which are sometimes resolved, creating new conflicts and contradictions in an ongoing dialectic.

32. B—Social reproduction refers to the emphasis on the structures and activities that transmit social inequality from one generation to the next.

33. C—Slavery, in which principles of property law are applied to people, allowing individuals to own, buy and sell other individuals, represents the most extreme form of social stratificaiton.

34. C—An ethnic group or ethnicity is a category of people who identify with each other based on similarities, such as common ancestral, language, social, cultural or national experiences. The linguistic and cultural diversity within Catholicism is too great for Catholicism to be considered an ethnicity.

35. D—Symbolic interactionism is a sociological perspective which developed around the middle of the twentieth century. Within the framework of symbolic interactionism, people act toward things based on the meaning those things have for them, and these meanings are derived from social interaction and modified through interpretation.

36. D—The melting pot is a metaphor for a heterogeneous society becoming more homogeneous, the different elements "melting together" into a harmonious whole with a common culture or vice versa, for a homogeneous society becoming more heterogeneous through the influx of foreign elements with different cultural background with a potential creation of disharmony with the previous culture. Historically, it is often used to describe the assimilation of immigrants to the United States.

37. A—Community rating is a concept which requires health insurance providers to offer health insurance policies within a given territory at the same price to all persons without medical underwriting, regardless of their health status. Community rating, as a basis for premium calculation, is fundamentally different from the usual method of determining insurance premiums, i.e. risk rating. The other three answer choices are also provisions of the ACA. The individual mandate is the requirement to buy insurance or pay a penalty for everyone not covered by an employer sponsored health plan or public insurance program. Guaranteed issue prohibits insurers from denying coverage to individuals due to pre-existing conditions. Essential health benefits are the set of benefits that health insurance plans are required to cover for patients.

38. B—*Regents of the University of California v. Bakke* was a landmark decision by the Supreme Court of the United States. It upheld affirmative action, allowing race to be one of several factors in college admission policy. However, the court ruled that specific racial quotas, such as the 16 out of 100 seats set aside for minority students by the University of California, Davis School of Medicine, were impermissible.

39. C—'Authority' means the right to exercise power.

40. A—Radical movements are dedicated to changing value systems in a fundamental way. The Civil Rights Movement which demanded full civil rights and equality under the law to all Americans, regardless of race, exemplifies the concept of a radical social movement. A reform movement is the kind of social movement that aims to make gradual change, or change in certain aspects of

society, rather than rapid or fundamental changes.

41. C—Queer theory has been associated most prominently with bisexual, lesbian and gay subjects, but its analytic framework also includes such topics as cross-dressing, intersex, gender ambiguity and gender-corrective surgery. Queer theory's general approach is to question the concept of stable sexes, genders, and sexualities.

42. A—Social constructionism examines the development of jointly constructed understandings of the world that form the basis for shared assumptions about reality. A social construct or construction concerns the meaning, notion, or connotation placed on an object or event by a society, and adopted by the inhabitants of that society with respect to how they view or deal with the object or event. In that respect, a social construct as an idea would be widely accepted as natural by the society, but may or may not represent a reality shared by those outside the society, and would be an "invention or artifice of that society." A major focus of social constructionism is to uncover the ways in which individuals and groups participate in the construction of their perceived social reality. It involves looking at the ways social phenomena are created, institutionalized, known, and made into tradition by humans.

43. B—Deprivation amplification occurs when an individual's disease risks are amplified by social factors such as inequality.

44. A—Of OECD member countries, only the Unites States and Mexico do not have universal health care.

45. C—Epidemiology is the study and analysis of the patterns, causes, and effects of health and disease conditions in groups of people and populations.

46. D—Epidemiological transition describes the replacement of infectious diseases by chronic diseases over time due to expanded public health and sanitation as a country undergoes demographic transition through stages of development.

47. A—Health equity falls into two major categories: horizontal equity, the equal treatment of individuals or groups in the same circumstances; and vertical equity, the principle that individuals who are unequal should be treated differently according to their level of need. In addition to level of need, there are other morally relevant considerations which are relevant in vertical equity such as, in the case of the question, the ability to benefit.

48. B—Durkheim used the concept of anomie to speak of the ways in which an individual's actions are matched, or integrated, with a system of social norms and practices. Anomie can occur during periods of economic transition where dysjunction between norms of behavioral expectations and economic conditions leads to normlessness, alienation and social breakdown.

49. C—The study found that 'the association between disconnectedness and mental health seems to operate mainly through the strong relationship between perceived isolation and mental health.' In other words, social disconnectedness is most strongly associated with worse mental health when it prompts feelings of loneliness or a perceived lack of social support.

50. C—One of the most frequently criticized aspects of the Hippocratic Oath is that the principle of patient autonomy is noticeably absent, both in its original version and the modernized version of the code. Note that choice 'D' is correct in the sense that the Hippocratic Oath does not discuss the obligations that patients have. However, the question is specifically dealing with the ethical obligations of medical doctors.