Essentials of Psychology 7th edition Bernstein Test Bank

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MULTIPLE CHOICE

1 : Biological psychology is the study of the _____ changes that cause, or occur in response to, behavior and mental processes.
A : physical and chemical
B : naturalistic
C : social and physical
D : cognitive

Correct Answer : A

2 : The nervous system is directly responsible for all of the following activities except
A : receiving information from sensory systems.
B : secreting hormones into the bloodstream.
C : integrating new information with past experiences.
D : directing the movement of muscles.

Correct Answer : B

3 : The most basic unit of communication in the human nervous system is the _____, which begins with dendrites and ends at axon terminals.
A : neuron
B : myelin sheath
C : oligodendrocyte
D : glial cell

Correct Answer : A

4 : Neurons have some similarities with other cells in the human body. Which of the following characteristics is seen in neurons, but not in most other cells?
A : An outer membrane
B : A body with a nucleus
C : The ability to transmit signals to other cells
D : Mitochondria

Correct Answer : C

5 : Kiko plays in a sport in which he knows that there is an increased risk of developing CTE, or chronic traumatic encephalopathy. In which of these sports is Kiko most likely to participate?
A : Golf
B : Marathon running
C : Softball
D : Football

Correct Answer : D

6 : Doctor Simo is building a super-genius monster. He wants to make sure that his monsters neurons can generate and use energy, so he makes sure to give the neurons plenty of
A : dendrites.
B : mitochondria.
C : nuclei.
D : axons.

Correct Answer : B

7 : Dr. Wozniak is examining a cell from the nervous system of an animal. He notices that at one end of the cell body is a long, fibrous strand of tissue that appears to be coated in a sheath-like cover. He immediately recognizes this as an axon that is responsible for
A : carrying signals away from the cell body.
B : receiving signals from other cells and carrying them toward the cell body.
C : determining the speed at which an action potential will travel.
D : determining whether the cell inhibits or excites neighboring neurons.

Correct Answer : A

8 : Marni wants to know how neurons communicate with other neurons. She studies the neuron to find that there is a long extension called _____ that is responsible for this transmission.
A : an outer membrane
B : an axon
C : a dendrite
D : a sulcus

Correct Answer : B

9 : Eycine operated the telephone switchboard at a large company, answering calls and directing them to the appropriate extensions. Remembering her introductory psychology class, she decided that her situation was much like the _____ of neurons because numerous people could call her at one time, but she could send out only one call at a time.
A : sodium and potassium
B : dendrites and axons
C : myelin and mitochondria
D : synapses and neurotransmitters

Correct Answer : B

10 : You are looking at a neuron under a microscope. You find many structures coming off the cell body. Some of these are relatively thick and branch many times. One of the structures, however, is very thin and very long. This latter structure is most likely the neurons _____, which carries the _____.
A : dendrite; efferent signal
B : dendrite; afferent signal
C : axon; action potential
D : axon; receptors

Correct Answer : C

11 : The fact that a neuron fires in an all or nothing manner means that
A : either all neurons in a particular brain area generate action potentials or none of them do.
B : a neuron either fires a full action potential or fires none at all.
C : neurons release all of their neurotransmitters with every firing, or they release none.
D : all dendritic receptor sites are bounded by neurotransmitters, or none of them are.

Correct Answer : B

12 : If the myelin sheathing on neurons is absent or removed in a given individual, he or she will

exhibit difficulties in speaking, vision, and balance because without myelin the
A : quantity of neurotransmitters released into synapses will be reduced.
B : quantity of neurotransmitters released into synapses will be increased.
C : speed of neural conduction along critical paths will be too fast.
D : speed of neural conduction along critical paths will be too slow.

Correct Answer : D

13 : Barbara suffers from a medical condition that causes her neurons to fire message at a reduced speed as a result of the destruction of myelin cells. As a result, she does not have full sensation of her fingers or her toes. What is the best diagnosis for Barbara?
A : Multiple sclerosis
B : Muscular dystrophy
C : Cystic fibrosis
D : CTE

Correct Answer : A

14 : Ivan has discovered how to tame neurons and keep them as pets. When hes bored, he sometimes starts an action potential going down the axon of each of his four pet neurons, just to see which one will win by releasing neurotransmitters first. All of his neurons have axons of the exact same length. Ivans game got old fast, though, because one neuron always wins. The winner is always
A : Sue, the neuron with the most dendrites.
B : Harry, the neuron with the fattest axon.
C : Elspeth, the neuron with the largest axon hillock.
D : Johann, the neuron with the most potassium channels.

Correct Answer : B

15 : Ophelia suffers from epilepsy. She studies the condition and learns that neurons that fire electrical signals across _____ to other neurons may be responsible for her condition.
A : synaptic gaps
B : nodes of Ranvier
C : synaptic vesicles
D : gap junctions

Correct Answer : D

16 : Chitra, a neuron, has been sending offensive messages to neighboring neurons. The neighbors decide to perform surgery to eliminate Chitras transmissions. This could be achieved most effectively by
A : locking the gates on Chitras axon.
B : reducing the strength of Chitras action potentials.
C : decreasing Chitras refractory period.
D : placing a myelin sheath on Chitras axon.

Correct Answer : A

17 : Multiple sclerosis is a disease in which the immune system mistakenly destroys some of the myelin wrapped around nerve cell fibers. Which nerve cell fibers are being attacked by this process?
A : Synapses

B : Axons
C : Dendrites
D : Mitochondria

Correct Answer : B

18 : An action potential has just sped down one of your motor neurons to jerk your hand off the hot stove. Before an action potential will speed through this neuron again, the membrane of the neuron must become repolarized. The time between the action potentials is called the _____ period.
A : refractory
B : polarization
C : self-propagating
D : repolarization

Correct Answer : A

19 : Arthur is a young child with an old-fashioned rubber horn on his bicycle. He squeezes the horn to make a funny but annoying sound, and then has to wait for the rubber bladder to fill with air before he can honk again. The time he must wait is similar to a neurons _____ period.
A : propagating
B : refractory
C : residual
D : terminal

Correct Answer : B

20 : Nathan neuron just fired his axon, causing a release of chemicals into the synapse. More! More! shout the neurons that received Nathans chemicals. Nathan replies, I cant right now, I have to take a break known as a(n)
A : refractory period.
B : postsynaptic potential.
C : action potential.
D : self-propagation.

Correct Answer : A

21 : Neurotransmitters are _____ that travel across the _____ to another cell.
A : electrical signals; neural receptors
B : electrical signals; synapse
C : chemicals; neural receptors
D : chemicals; synapse

Correct Answer : D

22 : Selwyn is developing a neuromuscular problem because of a shortage of certain neurotransmitters in his cells. This shortage means that
A : information cant get transmitted across his synapses.
B : his cells have too many vesicles.
C : there are only inhibitory postsynaptic potentials in his cells.
D : the depolarization of his dendrites is too strong.

Correct Answer : A

23 : A neuron evokes the action potential of another neuron by releasing the _____ into the synapse before they fit into the _____ of the other neuron.
A : neural receptors; neurotransmitters
B : neurotransmitters; receptors
C : dendrites; axon
D : axons; dendrites

Correct Answer : B

24 : Neurons communicate across the synapse by means of neurotransmitters, which bind to special proteins on the postsynaptic membrane, like a key fitting into a lock. In this analogy, the neurotransmitter is the key and the _____ is the lock.
A : receptor
B : axon
C : postsynaptic potential
D : dendrite

Correct Answer : A

25 : Hey! Its too crowded in here! Stop shoving! Boy, I cant wait til Im free! Im going to flow across that synapse and find the perfect receptor for me and you guys wont fit. Oh yeah! Youd better hope you connect soon or else youll be sucked back into this crowded room again! This conversation is taking place among
A : postsynaptic potentials.
B : dendrites connected to a neuron.
C : sodium ions in an axon.
D : neurotransmitter molecules in a vesicle.

Correct Answer : D

26 : A neurotransmitter is released into a synapse, but it has no effect on a neighboring neuron. Which of the following best accounts for the unresponsiveness of the neighboring neuron?
A : The neighboring neuron does not contain any neurotransmitters of its own.
B : The neighboring neurons vesicles are defective.
C : The neighboring neuron has an outer membrane.
D : The neighboring neurons receptors do not accept this type of neurotransmitter.

Correct Answer : D

27 : If a scientist wanted to know more about how neurons are organized, how they communicate in varying combinations, and how they are involved in producing different patterns of behavior, she would most likely focus her research on
A : feedback systems.
B : neurotransmitters.
C : postsynaptic potentials.
D : neural networks.

Correct Answer : D

28 : When you search a term on an Internet search engine, it activates different nodes on the Internet that return specific types of results. Each website is linked to other, similar websites. In the same way, the cells of your nervous system are organized into

A : fiber tracts.
B : cytokines.
C : glial cell systems.
D : neural networks.

Correct Answer : D

29 : Carlos was in a car accident and sustained a head injury that resulted in a decreased ability to produce speech. Carlos has more than likely damaged his _____ nervous system.
A : sympathetic
B : peripheral
C : central
D : sensory

Correct Answer : C

30 : After the physician taps your knee with a small hammer, your lower leg jumps in a reflexive response. The muscles of your leg then send messages back to the spinal cord to let it know that the leg has been extended. This two-way form of communication is called a(n) _____.
A : reaction arc
B : feedback system
C : somatic hierarchy
D : autonomic connection

Correct Answer : B

31 : The two major divisions of the nervous system are the
A : brain and spinal cord.
B : central and somatic nervous systems.
C : sympathetic and parasympathetic systems.
D : peripheral and central nervous systems.

Correct Answer : D

32 : When a stranger began walking behind Timothy on the dark and deserted street, his heart rate increased and the muscles in his legs began moving faster so he could gain some distance from the stranger. These mobilization and motor activities were most directly orchestrated by his _____ nervous system.
A : central
B : endocrine
C : peripheral
D : parasympathetic

Correct Answer : C

33 : As he is riding his bicycle, Miguel notices that there is a large branch in the street several meters in front of him. He pushes back on the brake pedal to slow down so he doesnt crash into the obstruction. The impulses to engage in this voluntary behavior would travel through the _____ nervous system from the spinal cord to the muscles that control the movement in Miguels legs.
A : somatic
B : autonomic
C : sympathetic

D : parasympathetic

Correct Answer : A

34 : Which nervous system is involved in allowing you to shoot a basketball, smell freshly baked bread, and push the keys on a piano?
A : Sympathetic branch of the autonomic nervous system
B : Parasympathetic branch of the autonomic nervous system
C : Both branches of the autonomic nervous system
D : Somatic nervous system

Correct Answer : D

35 : The digestion of last nights dinner is most directly controlled by the _____ nervous system.
A : autonomic
B : central
C : somatic
D : sympathetic

Correct Answer : A

36 : When you are running to catch a bus, the _____ nervous system is directly responsible for making the muscles in your legs move.
A : somatic
B : sympathetic
C : central
D : parasympathetic

Correct Answer : A

37 : Connections in Chiaras autonomic nervous system have been harmed by a mysterious infection. From which of the following areas is Chiara most unlikely to receive the usual communication?
A : Eyes
B : Muscles
C : Lungs
D : Legs

Correct Answer : C

38 : Mikel has to keep his apartment cool in the summer because he has a nervous system disorder that makes him unable to sweat. The problem is most likely in Mikels
A : somatic nervous system.
B : spinal cord.
C : mitochondria.
D : autonomic nervous system.

Correct Answer : D

39 : The main divisions of the peripheral nervous system are the _____ and the _____.
A : somatic; autonomic

B : sympathetic; parasympathetic
C : afferent; efferent
D : reticular; limbic

Correct Answer : A

40 : Tisha has a disorder that affects the functioning of her somatic nervous system. Of the following, Tisha probably experiences the most trouble while
A : digesting food.
B : thinking.
C : moving her limbs.
D : breathing.

Correct Answer : C

41 : If a person had a diseased autonomic nervous system, the kinds of functions most directly affected would be things such as _____ and _____.
A : decision making; problem solving
B : getting dressed; driving a car
C : reflexive movements; receiving sensory input
D : digestion; breathing

Correct Answer : D

42 : Nilam accidentally touches the hot burner on the stove. Sensory information about the pain and heat will be carried to her brain by the _____ nervous system, her heart rate will increase as a result of activation by the _____ nervous system, and when she calms down, the _____ nervous system will slow her heart rate down.
A : peripheral; central; autonomic
B : somatic; autonomic; central
C : central; sympathetic; parasympathetic
D : somatic; sympathetic; parasympathetic

Correct Answer : D

43 : Rashaun saw something terrifying. His muscles tensed, he began breathing more rapidly, and he began to sweat. Having taken introductory psychology course, Rashaun knew that the _____ division of his _____ nervous system had been activated.
A : sympathetic; limbic
B : parasympathetic; somatic
C : peripheral; central
D : sympathetic; autonomic

Correct Answer : D

44 : Francis has had a crush on Justin for some time but has been scared to ask for a date. He has decided that he is definitely asking Justin out today, but as the moment approaches, his hands are sweaty, his heart is racing, and his stomach is turning in knots. This results from activity of the _____ nervous system.
A : somatic
B : sympathetic
C : ancillary
D : parasympathetic

Correct Answer : B

45 : While Bonnie is getting ready for her first date with Juan, her heart is racing and her blood pressure is high because she is excited and nervous. While dining, Bonnie becomes calm and relaxed. While getting ready, Bonnies _____ nervous system was activated. While dining, Bonnies _____ nervous system was activated.
A : peripheral; autonomic
B : autonomic; peripheral
C : parasympathetic; sympathetic
D : sympathetic; parasympathetic

Correct Answer : D

46 : Claudia has just come home from a long, difficult day of writing questions for this test. As she sits down on the sofa, her heart rate and breathing slow down, her muscles relax, and her digestive system starts getting ready for food. It appears as though Claudias _____ has been activated.
A : thalamus
B : parasympathetic nervous system
C : sympathetic system
D : somatic nervous system

Correct Answer : B

47 : During a job interview, Samira realizes that she is sweating a little bit and she feels her heart pounding against her chest. Her stomach is also a little bit upset and she hasnt felt like eating all day. From this information, it appears that the _____ division of Samiras _____ nervous system is very active.
A : parasympathetic; autonomic
B : autonomic; parasympathetic
C : sympathetic; autonomic
D : autonomic; sympathetic

Correct Answer : C

48 : When a man grabbed Opals purse, she ran after him, tackled him, and retrieved her purse. Then, she realized that her heart was racing, her breathing was irregular, and she was trembling. Opals _____ nervous system was responsible for this reaction.
A : sympathetic
B : central
C : parasympathetic
D : somatic

Correct Answer : A

49 : In the fiber tracts of the central nervous system, you are most likely to find _____ of neurons.
A : axons
B : nuclei
C : dendrites
D : cell bodies

Correct Answer : A

50 : Dr. Zomboss plans to overtake all of humankind by shutting down the fiber tracts of their brains. To do this, Dr. Zomboss will set his brain zappers to target
A : sections of the limbic system involved in emotion.
B : collections of cell bodies.
C : collections of axons that travel together in bundles.
D : afferent neurons that line the reflex pathways.

Correct Answer : C

51 : If your central nervous system were a city, then the nuclei would be the _____, and the fiber tracts would be the _____.
A : highways; neighborhoods
B : cars; passengers
C : neighborhoods; highways
D : passengers; cars

Correct Answer : C

52 : After Les touches a hot iron, he pulls his hand away almost instantaneously. The command that instructed Less muscles to pull his arm away so quickly most likely came from his
A : brain.
B : spinal cord.
C : sensory neurons.
D : motor neurons.

Correct Answer : B

53 : You have been up all night studying for an important midterm examination and are a little tired. As you reach for your hot chocolate, you accidentally touch the hot burner on the stove. You quickly pull your hand away from the burner. Which of the following statements about your action is true?
A : The medulla oblongata and cerebellum played major parts in your response.
B : The reflexive command came from the spinal cord.
C : Glial cells did most of the work necessary to move your hand.
D : Your brain sent instructions, via the spinal cord, to pull away from the burner.

Correct Answer : B

54 : Casey got up one morning after only a few hours of sleep and plugged in the iron to press his shirt. When he heard a ringing sound, he grabbed the iron by the hot part, and before he could say hello, he dropped it with a crash. The parts of Caseys nervous system that caused him to drop the hot iron were his
A : substantia nigra and sensory neurons.
B : spinal cord, sensory neurons, and motor neurons.
C : cerebral cortex and motor neurons.
D : amygdala and sensory neurons.

Correct Answer : B

55 : All of the following statements about reflexes are true except that
A : they are controlled by the spinal cord.

B : they occur without instructions from the brain.
C : they are not voluntary.
D : they do not send signals to the brain.

Correct Answer : D

56 : Mitch tripped and fell near the campfire. When he reflexively drew back his hand, which had touched a hot coal, the signal sent throughout his nervous system went from his hand to his
A : spinal cord, then to his brain, and then back to his hand.
B : brain, then to his spinal cord, and then back to his hand.
C : spinal cord, then back to his hand, and then to his brain.
D : brain, and then simultaneously to his hand and spinal cord.

Correct Answer : C

57 : Chirags spinal cord was completely severed at the neck in an auto accident. He would still be able to
A : wiggle his toes.
B : exhibit the knee-jerk reflex in response to a tap on the knee.
C : feel the pain of a pin prick on his foot.
D : snap his fingers.

Correct Answer : B

58 : Athea was a subject in a study in which the glucose in her brain was marked with a radioactive substance. Then radiation detectors identified where these markers become highly concentrated. Athea participated in a study that employed
A : electroencephalograms (EEGs).
B : magnetic resonance imaging (MRI).
C : psychophysical radiograms (PPRs).
D : positron emission tomography (PET).

Correct Answer : D

59 : Alfred the brain was in a car accident, and the doctor suspects that Alfred may have suffered structural damage. Which of the following tests would be the most appropriate to find out whether there is structural damage?
A : Electrical stimulation
B : Electroencephalogram (EEG)
C : Positron emission tomography (PET)
D : Magnetic resonance imaging (MRI)

Correct Answer : D

60 : Yao is participating in a study investigating sleep patterns. As part of the study, researchers paste electrodes to Yaos scalp. The electrodes are then hooked up to an electroencephalograph (EEG), which will provide information about the
A : specific areas of the brain involved with sleep.
B : general electrical activity of the brain during sleep.
C : changes in blood flow that occur within the brain during sleep.
D : physical shape of the brain structures involved with sleep.

Correct Answer : B

61 : To study brain activity, Dr. Nu Rho uses a new scanning technique that traces the activity of axon pathways. Dr. Rhos brain imaging procedure is known as
A : diffusion tensor imaging (DTI).
B : electroencephalograph (EEG).
C : positron emission tomography (PET).
D : transcranial magnetic stimulation (TMS).

Correct Answer : A

62 : To understand how to better treat depression, Dr. Kloss and his team plan to use transcranial magnetic stimulation (TMS). By using this technology, the research team will be able to
A : detect changes in blood flow within the brain.
B : measure general electrical activity in the brain.
C : disrupt the activity of neurons in a particular brain region.
D : trace the activity of axon pathways.

Correct Answer : C

63 : Doctor Emarih wants to know what conclusions he can draw from fMRI research. He has been reviewing criticisms of this technology and found one of them to be incorrect. According to your textbook, which criticism is false?
A : An fMRI scan does not necessarily reveal how the mind works.
B : An fMRI shows only where brain activity occurs, not what is causing it.
C : Researchers may be accepting the value of fMRI too readily.
D : This technology shows us how the brain produces thoughts and feelings, but it is not precise enough yet to draw accurate conclusions.

Correct Answer : D

64 : Based on the Thinking Critically section in the textbook, we know that fMRI technology
A : directly measures brain activity.
B : can reveal the brain areas that are active when a person experiences an emotion.
C : can detect any neuronal activity, even if increases and decreases of activity in the same region cancel each other out.
D : is not very susceptible to experimenter bias because the images are difficult to misinterpret.

Correct Answer : B

65 : With the advent of fMRI, researchers have been able to explore mirror neuron mechanisms in the human brain. Based on this research, psychologists have discovered all of the following except
A : mirror systems have been found in humans that correspond to the F5 region in monkeys.
B : Brocas area may be important in many skills that involve imitation.
C : language development and empathy seem to operate independently from mirror neuron mechanisms.
D : certain parts of the brain are activated similarly when a person witnesses an emotion as when he or she directly experiences that emotion.

Correct Answer : C

66 : Which of the following is the most accurate statement about the hindbrain?

A : It is a continuation of the spinal cord.
B : It is broken into two halves, called hemispheres.
C : It is divided into four main areas, called lobes.
D : It controls most of our higher, human-like functions.

Correct Answer : A

67 : Mathias was playing ice hockey with his friends, and in a very foolish moment decided to take off his helmet during the game. Just a few minutes later, he was knocked backward and slammed the back of his head into the ice. For several weeks after, Matthias has had difficulty with balance and coordinated movement. He has most likely damaged his
A : medulla oblongata.
B : reticular formation.
C : cerebellum.
D : locus coeruleus.

Correct Answer : C

68 : Blesdo keeps falling asleep at odd times. He is having trouble with arousal and attention. His doctors have ruled out sleep disorders and are now concentrating on certain brain structures. The one that is most likely malfunctioning is the
A : thalamus.
B : reticular formation.
C : substantia nigra.
D : hippocampus.

Correct Answer : B

69 : While waiting to begin his college entrance exam, John becomes nervous. As a result, his medulla oblongata begins to function differently. This will cause a change in his
A : emotional experience.
B : balance and coordination.
C : heart rate and breathing.
D : memory.

Correct Answer : C

70 : Herman suffers a stroke that destroys the connections between the reticular formation and the rest of his brain. Herman will most likely
A : be in a permanent coma.
B : have increased activity in the locus coeruleus.
C : lose automatic control of his heart rate, breathing, and blood pressure.
D : lose all reflexes.

Correct Answer : A

71 : After consuming a few alcoholic beverages, Sejal finds it hard to tie her shoes. This is most likely because the alcohol has affected her
A : corpus callosum.
B : hypothalamus.
C : cerebellum.
D : hippocampus.

Correct Answer : C

72 : Jerod was in an automobile accident and can no longer control his own heart rate or breathing. Jerod most likely has damage to his
A : cerebellum.
B : hippocampus.
C : amygdala.
D : medulla oblongata.

Correct Answer : D

73 : Andre was in a terrible car accident and had a serious head injury. As a result, he is now in a permanent coma. Andre most likely has damage to his
A : cerebellum.
B : hypothalamus.
C : corpus callosum.
D : reticular formation.

Correct Answer : D

74 : Trisha is gradually developing an impairment in her ability to perform finely coordinated movements, such as cutting a clove of garlic into very small pieces. Doctors will probably discover a problem in her
A : medulla oblongata.
B : hypothalamus.
C : cerebellum.
D : amygdala.

Correct Answer : C

75 : During a recent study session, your friend asks you to explain what the locus coeruleus does. You explain the locus coeruleus is part of the hindbrain responsible for
A : emotional response.
B : sexual arousal.
C : balance.
D : directing attention.

Correct Answer : D

76 : Damage to the locus coeruleus has been linked to all of the following except
A : posttraumatic stress disorder.
B : attention deficit hyperactivity disorder.
C : memory loss.
D : sleep disorders.

Correct Answer : C

77 : When a balloon pops near Tylers head, the circuits in his _____ cause him to reflexively turn his head toward the source of the startling noise.
A : hindbrain
B : midbrain
C : forebrain
D : lateral brain

Correct Answer : B

78 : The largest level of brain tissue in the human being is the _____, which includes such structures as the thalamus and hypothalamus, amygdala, and cerebral cortex.
A : anterobrain
B : midbrain
C : hindbrain
D : forebrain

Correct Answer : D

79 : After an accident, Stella was left with brain damage. Now Stella has trouble judging the emotions of others, even when she can see their facial expressions. Stella has most likely damaged her
A : cerebellum.
B : amygdala.
C : hypothalamus.
D : thalamus.

Correct Answer : B

80 : Traviss hypothalamus was injured in an accident. Travis will have trouble regulating all of the following except his
A : sex drive.
B : weight.
C : breathing.
D : hydration.

Correct Answer : C

81 : Bert and Ernie have very different sleeping patterns. Bert always wakes up early in the morning, but he starts to get tired early in the evening. Ernie, on the other hand, prefers to stay up late and then sleep until noon. Berts and Ernies different sleeping preferences are most likely due to their
A : thalamus.
B : amygdala.
C : suprachiasmatic nuclei.
D : corpus callosum.

Correct Answer : C

82 : After a freak boating accident, Arlos hippocampus was lost at sea. Although he has recovered in all other respects, Arlo will have difficulty
A : forming new memories of events after the accident.
B : speaking fluently in his native language.
C : making controlled, purposeful movements.
D : smiling.

Correct Answer : A

83 : After an evil scientist destroys part of Patricks brain, Patrick finds that he is constantly hungry and he eats much more than before. The scientist destroyed Patricks

A : amygdala.
B : hypothalamus.
C : thalamus.
D : hippocampus.

Correct Answer : B

84 : Recent animal studies have shown that removal of the hippocampus several days after a mildly painful experience will not erase the memory of the experience. This evidence suggests that
A : the hippocampus is necessary only for long-term memory.
B : the hippocampus is not necessary for forming new memories.
C : memories are transferred and stored somewhere other than the hippocampus.
D : memories of pain are stored in different areas of the brain than other memories.

Correct Answer : C

85 : After a freak accident involving a falling piano, Dr. Diart informs you that you have sustained damage to your limbic system. Which of the following functions will be most affected?
A : Emotion
B : Vision
C : Intelligence
D : Perception

Correct Answer : A

86 : Suppose that you have just been abducted by aliens from the planet Zeebo. The Zeeboians are very interested in life on Earth, and one of them asks you how humans are different from other species. In terms of brain anatomy, which of the following structures would you say best differentiates humans from the so-called lower species?
A : Reticular formation
B : Cerebral cortex
C : Cerebellum
D : Medulla oblongata

Correct Answer : B

87 : When Cade was tackled during a football game, he hit the back of his head on the turf, which resulted in a concussion. Cade now has trouble with his vision. Cade most likely injured his _____ lobe.
A : frontal
B : parietal
C : temporal
D : occipital

Correct Answer : D

88 : Veronica bent over in her garden to pick a squash but bumped her head on a fence post and passed out. When she came to, she could not let go of the squash in her left hand; the hand would not open or close. She most likely injured cells in her _____ lobe.
A : frontal
B : temporal
C : parietal

D : occipital

Correct Answer : A

89 : Luke is learning to play the guitar. Recent research suggests that the organization of Lukes somatosensory cortex may change to allow more of the neurons there to respond to touch. Which lobe of Lukes cerebral cortex contains the somatosensory cortex?
A : Frontal
B : Parietal
C : Temporal
D : Occipital

Correct Answer : B

90 : In the brains motor cortex, the region of cells responsible for moving the index finger of the right hand is near the region that moves the
A : right ring finger.
B : upper lip.
C : right foot.
D : left thumb.

Correct Answer : A

91 : If the person sitting beside you were to tap your shoulder, neurons in _____ would become active in response to the tap.
A : Wernickes area
B : the occipital lobe
C : the motor cortex
D : the somatosensory cortex

Correct Answer : D

92 : Voshon is programming a computer to think like humans. His big challenge is to get the computer to integrate information from a variety of sources and relate this information (words and images) to abstract concepts. What area of the cerebral cortex accomplishes these tasks for humans?
A : Association cortex
B : Sensory cortex
C : Somatosensory cortex
D : Integrative cortex

Correct Answer : A

93 : When she walks into her kitchen in the morning, Ilene sees that the coffeepot is full and simultaneously smells the heavenly aroma of her favorite beverage. The part of her brain that receives input from both of these senses at the same time is the _____ cortex.
A : suprachiasmatic
B : association
C : primary sensory
D : secondary integrative

Correct Answer : B

94 : Just before the glee club performance at Regionals, Finn Hudson sustains damage to his association cortex during a football game. At glee club practice, he sings, The baby is a fortitude. Ice is calling. Finn must have received damage to his
A : Wernickes area.
B : Brocas area.
C : thalamus.
D : hypothalamus.

Correct Answer : A

95 : After a stroke, Juanita has great difficulty with speech. Words come slowly and haltingly, and her speech is often grammatically incorrect. The stroke probably damaged
A : Wernickes area.
B : Brocas area.
C : the cerebellum.
D : the hippocampus.

Correct Answer : B

96 : A neurologist is examining a patient and asks him, What sound does a lion make? The patient replies, Lionhe roars. The patient has great trouble producing those three words, which come in a very halted manner. What region of the patients brain is most likely damaged?
A : Wernickes area
B : The motor cortex
C : Brocas area
D : Wundts area

Correct Answer : C

97 : Tyra has a brain tumor that affects her language capabilities. When Tyras doctor asks her about a picture of a bird, Tyra responds, Wings in the sky fly high. Soar through air with a suitcase. Tyras fluent but confused response indicates that she most likely suffers from
A : Wernickes aphasia.
B : Huntingtons disease.
C : Brocas aphasia.
D : Parkinsons disease.

Correct Answer : A

98 : Jerry is playing a video game. He sees a bad guy on the screen that he is supposed to zap by pushing buttons A and B simultaneously. Jerry is able to coordinate vision with his hand movements due to his _____ cortex.
A : sensory
B : temporal
C : motor
D : association

Correct Answer : D

99 : Wayne was injured when a rotary saw blade was accidentally used in a game of Frisbee golf. Wayne seemed all right, except for a large vertical cut through the middle of his skull. However, when he was asked to place his left hand into his left pocket and verbally describe the contents, he couldnt. Having taken introductory psychology course, his friend Garth deduced,

Waynes _____ must be cut!
A : hypothalamus
B : occipital lobe
C : corpus callosum
D : frontal lobe

Correct Answer : C

100 : Adrian is recovering from a skiing accident. When an apple is shown to his left cerebral hemisphere, he can name it, but when shown to the right hemisphere, he cannot explain it. Adrian most likely damaged his _____ in the accident.
A : locus coeruleus
B : suprachiasmatic nuclei
C : reticular formation
D : corpus callosum

Correct Answer : D

101 : The two hemispheres of the brain sometimes perform different tasks (lateral dominance). However, information is passed back and forth between hemispheres so that the brain can function as a whole. This interhemispheric communication depends on the
A : association cortex.
B : thalamus.
C : somatosensory cortex.
D : corpus callosum.

Correct Answer : D

102 : Juan had his corpus callosum severed to prevent whole-brain seizures. He sits in front of a screen and stares at a dot in the middle, while simple visual stimuli are flashed briefly to the left and right of the dot. Juan would
A : be able to name stimuli on the left, but not on the right.
B : be able to name stimuli on the right, but not on the left.
C : not be able to name any of the stimuli.
D : be able to name all of the stimuli.

Correct Answer : B

103 : Jacob had severe epilepsy, so a surgeon cut through his corpus callosum to prevent seizures from crossing to the other side of Jacobs brain. After surgery, if Jacob sees a picture of a ball in his left visual field, he cannot
A : choose a ball from among several objects with his right hand.
B : spell out BALL with letter magnets.
C : make a throwing motion with his right hand.
D : correctly identify the ball in words.

Correct Answer : D

104 : Suppose that the left hemisphere of Jamals brain is damaged, but the right hemisphere is left intact. Jamal would be most likely to experience a deficit in his ability to
A : compose new songs on his piano.
B : feel an insect bite his left hand.
C : converse with friends.

D : follow a map.

Correct Answer : C

105 : The fact that each of the cerebral hemispheres has certain functions that it can perform more efficiently than (and in some cases independently of) the other hemisphere is called
A : lateralization.
B : cross-dominance.
C : plasticity.
D : neurilemma.

Correct Answer : A

106 : Identifying certain types of brain functions (language skills, for instance) as lateralized means that
A : areas responsible for these functions are located at a uniform depth throughout the cerebral cortex.
B : all human beings possess the ability to perform these functions.
C : the entire cerebrum is involved in performing these functions.
D : they are performed most efficiently by one or the other of the two cerebral hemispheres.

Correct Answer : D

107 : The right hemisphere gets information from the _____ side of the body and has better _____ abilities than the left hemisphere.
A : left; logical
B : right; language
C : left; spatial
D : right; artistic

Correct Answer : C

108 : As part of a new government program, U.S. citizens can donate part of their brains to the supercomputer development fund in exchange for a Statue of Liberty commemorative coin set. If you decide to donate a significant chunk of the right hemisphere of your brain (for the gold coin set, of course), which of the following abilities would be least affected?
A : Language abilities
B : Spatial skills
C : Musical ability
D : Artistic abilities

Correct Answer : A

109 : In fourth grade, Tate joins the school band and learns to play the trumpet. After a year of practice, the cortical regions in Tates brain responsible for motor coordination of the hands have increased dramatically. This phenomenon demonstrates that the brain has
A : neural plasticity.
B : lateral dominance.
C : myelination.
D : a refractory period.

Correct Answer : A

110 : As part of Jeremiahs occupation, he restores buildings that have been damaged by natural disasters. He likens his job to that of _____ in the brain, which clean up after brain damage is sustained.
A : efferent neurons
B : hormones
C : interneurons
D : glial cells

Correct Answer : D

111 : If a scientist implanted some cells into an adult patients brain and this caused stimulation and growth of new neurons, thus reversing brain damage, you could assume that the implanted cells produced
A : nerve growth factor.
B : fetal tissue.
C : L-dopa.
D : glial cells.

Correct Answer : D

112 : Donovan had a stroke last year, and doctors were unsure whether he would ever fully recover. Donovan did very little physical exercise to speed up his recovery, but the damaged cells in his nervous system still managed to regenerate and reestablish their network connections. Donovans system has a naturally high level of
A : neural plasticity.
B : lateral dominance.
C : autoimmune functioning.
D : autonomic restructuring.

Correct Answer : A

113 : Which of the following developmental changes in the brain occurs after birth?
A : The number of dendrites and synapses increases until adolescence, after which it reduces.
B : The number of axons increases and the number of dendrites decreases throughout adolescence and adulthood.
C : No developmental changes occur after birth because all the neurons the brain will ever have are present at birth.
D : New neurons grow until adolescence, after which they begin to die.

Correct Answer : A

114 : Bob is nine months old. Carol is nine years old. Ted is twenty-nine years old. Alice is ninety years old. Whose brain is most likely overproducing synapses?
A : Bob
B : Carol
C : Ted
D : Alice

Correct Answer : A

115 : A study found that rats raised in stimulating environments have more dendrites and synapses than rats raised in boring environments. This study suggests that
A : experience plays an important part in the structure and functioning of the brain.

B : neural plasticity occurs only during the first few years of life.
C : connections in the brain are determined by genetic factors.
D : the brains of rats are more lateralized than those of humans.

Correct Answer : A

116 : Which of the following is not one of the three main classes of neurotransmitters used in the nervous system?
A : Small molecules
B : Hormones
C : Peptides
D : Gases

Correct Answer : B

117 : Alcohol slows down the speed with which messages travel through the nervous system. This is best explained by the fact that alcohol increases the amount of _____ in the brain.
A : GABA
B : acetylcholine
C : glutamate
D : norepinephrine

Correct Answer : A

118 : Belinda has been depressed lately and is having suicidal thoughts. We might correctly assume that her brain has low levels of
A : endorphins.
B : serotonin.
C : glutamate.
D : adrenaline.

Correct Answer : B

119 : Dennis is an anesthesiologist. Before a patient undergoes surgery, Dennis administers an opiate to numb the pain. The opiate works by mimicking the effects of the neurochemical substance called
A : norepinephrine.
B : endorphin.
C : acetylcholine.
D : dopamine.

Correct Answer : B

120 : Eating a diet that is high in carbohydrates can increase the levels of _____ in the brain.
A : acetylcholine
B : glutamate
C : serotonin
D : dopamine

Correct Answer : C

121 : Donald is seventy years old. For the past few years, he has developed a memory loss that

is getting worse, and his personality has become very erratic. His doctors say he has Alzheimers disease, but you arent sure. What finding should most convince you that the doctors are right?
A : A loss of GABA neurons in Donalds brain
B : An absence of myelin in Donalds brain
C : A loss of acetylcholine neurons in Donalds brain
D : Below-normal levels of norepinephrine in Donalds brain

Correct Answer : C

122 : Dr. Chens patient describes her main symptoms as sleeplessness and mood difficulties. Dr. Chen suspects that a neurotransmitter is malfunctioning. Which neurotransmitter should he look at?
A : Norepinephrine
B : Dopamine
C : Acetylcholine
D : ACTH

Correct Answer : A

123 : Dr. Wiancek was on duty in the emergency room when a brain trauma patient arrived. To try to prevent permanent brain damage, Dr. Wiancek injected the patient with the neurotransmitter called
A : glutamate.
B : serotonin.
C : GABA.
D : norepinephrine.

Correct Answer : A

124 : Devin has been having trouble initiating movements lately and has also developed a tremor in his hands. He is diagnosed with Parkinsons disease and put on medication. To help alleviate Devins symptoms directly, the drugs would need to increase the effects of which of the following?
A : GABA
B : Acetylcholine
C : Serotonin
D : Dopamine

Correct Answer : D

125 : Sam has schizophrenia. He started taking medication to decrease his symptoms. However, he now has difficulty initiating smooth movement. The drug that Sam took blocked his _____ receptors.
A : dopamine
B : glutamate
C : norepinephrine
D : serotonin

Correct Answer : A

126 : Nancy neurotransmitter and Heather hormone were having an argument over which of them is more powerful. Defending her stance that hormones are more powerful, Heather

correctly states that neurotransmitters
A : can affect only cells that have special receptorshormones can affect all cells equally!
B : can be found only in the brainhormones are found everywhere in the body!
C : carry their message across the synapsehormones are carried in the bloodstream and can affect many more cells!
D : control the autonomic nervous systemhormones control the sympathetic nervous system!

Correct Answer : C

127 : Harry, the hormone, and Nadia, the neurotransmitter, can both exert physiological effects on their target organs. Which of the following is true about Harry and Nadia?
A : Harry doesnt affect behavior, while Nadia does.
B : Nadia acts at a site away from where she was released, while Harry acts locally.
C : Harry acts at a site away from where he was released, while Nadia acts locally.
D : Neither Harry nor Nadia affects behavior.

Correct Answer : C

128 : Scientists have just discovered a new hormone that appears to have very specific effects. This specificity of effects is most likely due to
A : a small distance between the gland and the target organs.
B : unique receptors on the target organ.
C : the hormone being secreted by the target organs.
D : the hormone being active in the bloodstream.

Correct Answer : B

129 : In the nervous system, neurotransmitters are the main means of communication between neurons. The main means of communication between organs in the endocrine system is by
A : glands.
B : cytokines.
C : hormones.
D : thalamus.

Correct Answer : C

130 : You see a vicious-looking squirrel getting ready to attack you. What specific part of the nervous system would be activated to prepare you for this fight-or-flight encounter?
A : Somatic
B : Sympathetic
C : Parasympathetic
D : Central

Correct Answer : B

131 : Jacelyn is wandering through a national park when she sees a bear lumbering toward her. As her fight-or-flight reaction is triggered, what hormones are being released in her body in response to the perceived threat?
A : Melatonin and progesterone
B : ACTH and cortisol
C : Estradiol and testosterone
D : Insulin and corticosteroids

Correct Answer : B

132 : Lately, Buck has been gaining weight, even though his diet and activity levels have not changed. If his doctor suspects that there is an endocrine problem affecting Bucks metabolism, he would start by examining Bucks _____.
A : adrenal medulla
B : pineal gland
C : adrenal cortex
D : thyroid

Correct Answer : D

133 : Eric has been suffering from diabetes for his entire life. This illness involves incorrect functioning of the gland that controls levels of insulin and glucagon and regulations of blood sugar levels. What part of the endocrine system gives Eric a problem?
A : His pancreas
B : The thyroid
C : One of his testes
D : The pituitary gland

Correct Answer : A

134 : Devina really enjoys eating salty snacks. Pretzels, peanuts, and potato chips are her favorite. If her body is to metabolize this salt intake effectively, Devina should hope that her _____ is working properly.
A : pancreas
B : adrenal medulla
C : adrenal cortex
D : thyroid

Correct Answer : C

ESSAY

135 : Explain why the human nervous system (including the brain) can be considered an information-processing system and identify the parts of the nervous system that perform the major functions of an information-processing system.

Correct Answer : The three fundamental functions of any information-processing system are receiving inputs, processing those input signals, and producing outputs that are based on the processed inputs. In humans, our sense organs perform the input functions by converting signals from the environment into nerve impulses. Once converted to nerve impulses by the sense organs, these nerve impulses are transmitted electrochemically from one neuron to another along the appropriate paths to the spinal cord and then on to particular parts of the brain specialized to receive those signals. Various specialized structures in the brain interpret those inputs into nerve impulses that control motor movements of various parts of the body, including those organs associated with speech. Except for some reflex signals that don’t pass through the brain, the output signals flow electrochemically from neuron to neuron along paths from the brain through the spinal cord to the nerves that control muscle movements. The peripheral nervous system performs the initial input function and the final output function and contains the sensory system and the motor system. The central nervous system consists of the

brain and spinal cord and performs the major processing functions.

136 : Compare and contrast the functions and characteristics of the endocrine system.

Correct Answer : There are several similarities between neurons and the endocrine system. Both secrete chemicals that are used for communication: Neurons secrete neurotransmitters, and the endocrine system secretes hormones. Some chemicals, such as adrenaline, act as both neurotransmitters and hormones. Both neurotransmitters and hormones have their own receptor sites.There are also several differences between neurons and the endocrine system. Neurons secrete neurotransmitters into synapses, while the endocrine system secretes hormones into the bloodstream. Glands in the endocrine system can stimulate remote cells to which they have no direct connection, while neurons can stimulate only other neurons to which they have direct connections. The endocrine system produces its effects through chains of several hormones. In contrast, a group of neurons uses a characteristic neurotransmitter; for example, cholinergic neurons communicate by using acetylcholine.

137 : Dr. S. White is currently working with seven patients. Each patient has abnormally high production of a neurotransmitter, and for each patient, it is a different neurotransmitter that is affected. Dr. White wants to write up her research using nicknames to hide the true identities of her patients. Choose an appropriate nickname for each patient. Be sure to explain why the nickname is appropriate, as well as the symptoms one would expect to see in that patient.

Correct Answer : The nicknames for Dr. S. White’s patients could be the following:Happy. Happy has high dopamine production. Dopamine is related to pleasure. It is also related to hallucinations and delusions. Happy may very well suffer from schizophrenia.Zippy. Zippy has high norepinephrine production. Norepinephrine is related to energy. It is also related to anxiety and panic attacks. Zippy is probably getting treatment for stress and anxiety.Boozer. Boozer looks like he’s drunk because he has high amounts of GABA. GABA is the major inhibitory neurotransmitter. Boozer needs to be watched carefully because he may pass out.Coolie. Coolie has high levels of serotonin. High serotonin is related to relaxation and emotional wellness. Coolie is probably in Dr. White’s care because he feels so little anxiety he may take great risks or be involved in illegal activity that would make most people very nervous.The Professor. The Professor has high levels of glutamate. Glutamate is the major excitatory neurotransmitter and is related to learning and memory. The Professor is probably being watched carefully by Dr. White because too much glutamate can overexcite neurons to the points where they are destroyed.Poppy. Poppy has high amounts of endorphins. Endorphins act like opiates, which come from opium (poppy seeds!). Poppy is probably numb to pain and feels pretty good. He needs to be watched carefully because he could lose consciousness and possibly die if levels get too high.Pokey. Pokey has high acetylcholine, which is related to the parasympathetic nervous system. Pokey would just hang out, rest, and digest his food. His lack of energy and inability to properly react to stressful situations would explain why he is being seen by Dr. White.

138 : Identify the lobes of the cerebral cortex and note some functions that are controlled in each lobe.

Correct Answer : The cerebral cortex is divided into four different lobes, including the occipital, parietal, frontal, and temporal lobes. The visual cortices that control our sense of sight are located in the occipital lobe. The somatosensory cortex which processes touch, pain, and temperature sensations is found in the parietal lobe. The auditory cortices, which regulate our sense of hearing, are found in the temporal lobe. The frontal lobes contain the motor cortices, which control voluntary movements in each part of the body.(Though not contained in the text, instructors may wish to give credit for students identifying the location of the olfactory and

gustatory cortices if that information is covered in course presentations.)

139 : Identify at least three different ways that a clinician might study the functioning of your brain if you were suffering from symptoms that suggested a brain injury. Discuss how each of those techniques is performed, and identify a disadvantage of each technique.

Correct Answer : Students can select from a variety of techniques presented in the textbook, including EEG, PET scan, MRI, TMS, or Optogenetics. Students might also opt to select fMRI. The general methods and advantages/disadvantages of each approach are found in Table 2.1, though fMRI is discussed in the “Thinking Critically” section. Instructors may also give credit for students who identify DTI (diffusion tensor imaging), though that is technically a form of MRI.