

UNIT 3- Biological Bases of Behaviour
Practice Questions /70

Name: _____ Date: _____ Block: _____

1. Who believed that bumps on the skull reveal mental abilities and character traits?
 - A) Sir Charles Sherrington
 - B) Stephen Kasslyn
 - C) Franz Gall
 - D) Candace Pert
 - E) Solomon Snyder

2. An axon is
 - A) a cell that serves as the basic building block of the nervous system.
 - B) a layer of fatty tissue that encases the fibers of many neurons.
 - C) an antagonist molecule that blocks neurotransmitter receptor sites.
 - D) the extension of a neuron that carries messages away from the cell body.
 - E) a junction between a sending and receiving neuron.

3. The slowdown of neural communication in multiple sclerosis involves a degeneration of the
 - A) thresholds.
 - B) dendrites.
 - C) endocrine gland.
 - D) myelin sheath.
 - E) pituitary gland.

4. Resting potential is to action potential as _____ is to _____.
 - A) adrenal gland; pituitary gland
 - B) sensory neuron; motor neuron
 - C) temporal lobe; occipital lobe
 - D) polarization; depolarization
 - E) dendrite; axon

5. The movement of positively charged ions across the membrane of a neuron can produce a(n)
- A) action potential.
 - B) synapse.
 - C) neurotransmitters.
 - D) myelin sheath.
 - E) interneuron.
6. A synapse is a(n)
- A) chemical messenger that triggers muscle contractions.
 - B) automatic response to sensory input.
 - C) neural network.
 - D) junction between a sending neuron and a receiving neuron.
 - E) neural cable containing many axons.
7. Prozac, a drug commonly prescribed to treat depression, prevents the sending neuron from taking in excess serotonin. Which process does this drug prevent from taking place?
- A) depolarization
 - B) reuptake
 - C) the all-or-none response
 - D) an action potential
 - E) a refractory period
8. An undersupply of serotonin is most closely linked to
- A) Alzheimer's disease.
 - B) schizophrenia.
 - C) Parkinson's disease.
 - D) depression.
 - E) euphoria.
9. Motor neurons are an important part of the
- A) limbic system.
 - B) reticular formation.
 - C) peripheral nervous system.
 - D) brainstem.
 - E) motor cortex.

10. The peripheral nervous system is to sensory neurons as the central nervous system is to
- A) motor neurons.
 - B) neurotransmitters.
 - C) interneurons.
 - D) the sympathetic nervous system.
 - E) the parasympathetic nervous system.
11. The somatic nervous system is a component of the _____ nervous system.
- A) peripheral
 - B) autonomic
 - C) central
 - D) sympathetic
 - E) parasympathetic
12. Neural networks refer to
- A) the branching extensions of a neuron.
 - B) interconnected clusters of neurons in the central nervous system.
 - C) neural cables containing many axons.
 - D) junctions between sending and receiving neurons.
 - E) neurons that connect the central nervous system to the rest of the body.
13. A simple, automatic, inborn response to a sensory stimulus is called a(n)
- A) neural network.
 - B) action potential.
 - C) neurotransmitter.
 - D) reflex.
 - E) threshold.
14. Endocrine glands secrete hormones directly into
- A) synaptic gaps.
 - B) the bloodstream.
 - C) dendrites.
 - D) sensory neurons.
 - E) interneurons.
15. Epinephrine and norepinephrine are released by the
- A) thyroid gland.
 - B) pituitary gland.
 - C) parathyroids.
 - D) adrenal glands.
 - E) pancreas.

16. Mandy came home late. As she reached to turn on the kitchen light, her hand brushed against something unexpected. Her adrenal glands, as a part of the “fight-or-flight” response, released epinephrine and norepinephrine, which increased her heart rate and blood pressure. Even after she realized it was just the curtain, her excited feelings lingered. This example illustrates
- A) how chemicals can amplify or block a neurotransmitter's activity.
 - B) that a resting axon has gates that block positive sodium ions.
 - C) how the myelin sheath insulates and increases the speed of neural messages.
 - D) the all-or-none response in neural firing.
 - E) that endocrine messages tend to outlast the effects of neural messages.
17. A brain lesion refers to _____ of brain tissue.
- A) electrical stimulation
 - B) X-ray photography
 - C) radioactive bombardment
 - D) destruction
 - E) development
18. To identify which specific brain areas are most active during a particular mental task, researchers would be most likely to make use of a(n)
- A) fMRI.
 - B) hemispherectomy.
 - C) ACh agonist.
 - D) brain lesion.
 - E) MRI.
19. The sequence of brain regions from the evolutionarily oldest to newest is
- A) limbic system; brainstem; cerebral cortex.
 - B) brainstem; cerebral cortex; limbic system.
 - C) limbic system; cerebral cortex; brainstem.
 - D) brainstem; limbic system; cerebral cortex.
 - E) cerebral cortex; brainstem; limbic system.
20. What is the main difference between an MRI scan and an fMRI scan?
- A) MRI scans are able to show internal structures of the brain, fMRI scans can also show external structures.
 - B) MRI scans use X-rays, fMRI scans use gamma rays.
 - C) MRI scans measure glucose levels in the brain, fMRI scans measure oxygen levels.
 - D) MRI scans show structural details of the brain, fMRI scans show structure and activity levels.
 - E) MRI scans measure brain wave activity, fMRI scans use a series of X-ray images to show structural details.

21. Severing a cat's reticular formation from higher brain regions causes the cat to
- A) become violently aggressive.
 - B) cower in fear.
 - C) experience convulsive seizures.
 - D) lapse into a coma.
 - E) become sexually preoccupied.
22. After Kato's serious motorcycle accident, doctors detected damage to his cerebellum. Kato is most likely to have difficulty
- A) experiencing intense emotions.
 - B) reading printed words.
 - C) understanding what others are saying.
 - D) tasting the flavors of foods.
 - E) playing his guitar.
23. The neural system located at the border between the brainstem and the cerebral hemispheres is known as the
- A) sensory cortex.
 - B) limbic system.
 - C) reticular formation.
 - D) peripheral nervous system.
 - E) cerebellum.
24. The secretions of the pituitary gland are most directly regulated by the
- A) reticular formation.
 - B) hypothalamus.
 - C) amygdala.
 - D) cerebellum.
 - E) thalamus.
25. One function of the glial cells is to
- A) control heartbeat and breathing.
 - B) mimic the effects of neurotransmitters.
 - C) provide nutrients to interneurons.
 - D) stimulate the production of hormones.
 - E) control the muscle movements involved in speech.

26. Which lobes of the brain receive the input that enables you to feel someone scratching your back?
- A) parietal
 - B) temporal
 - C) occipital
 - D) frontal
 - E) cerebral.
27. In 1848, Phineas Gage, a railroad construction foreman, survived when an explosion drove an iron rod through his head. The once friendly, soft-spoken Gage became irritable and dishonest. Gage's case provided evidence that which region of the brain plays a role in personality and behavior?
- A) temporal lobes
 - B) sensory cortex
 - C) frontal lobes
 - D) parietal lobes
 - E) Broca's area
28. To trigger a person's hand to make a fist, José Delgado stimulated the individual's
- A) motor cortex.
 - B) hypothalamus.
 - C) sensory cortex.
 - D) reticular formation.
 - E) limbic system.
29. The sensory cortex is most critical for our sense of
- A) taste.
 - B) sight.
 - C) hearing.
 - D) touch.
 - E) smell.
30. Which part of your brain receives information that you are moving your legs?
- A) amygdala
 - B) motor cortex
 - C) sensory cortex
 - D) hypothalamus
 - E) Broca's area

31. A PET scan of a patient looking at a photograph of a painting would most likely indicate high levels of activity in which brain structure?
- A) sensory cortex
 - B) Broca's area
 - C) corpus callosum
 - D) occipital lobes
 - E) frontal lobes
32. The region of your cerebral cortex that enables you to recognize a person as your own mother is
- A) Wernicke's area.
 - B) the limbic system.
 - C) the angular gyrus.
 - D) Broca's area.
 - E) an association area.
33. In 1861, Paul Broca studied a stroke patient he called "Tan." He was called this because as a result of brain damage it was the only word he could pronounce. Based on Broca's early work, which of the following brain regions is involved in speech production?
- A) angular gyrus
 - B) left temporal lobe
 - C) sensory cortex
 - D) left frontal lobe
 - E) auditory cortex
34. Which brain area is primarily involved with understanding and producing meaningful speech?
- A) sensory cortex
 - B) angular gyrus
 - C) association areas
 - D) Wernicke's area
 - E) hypothalamus
35. Someone who has difficulty speaking after a stroke is suffering from which of the following?
- A) neurogenesis
 - B) lesion
 - C) aphasia
 - D) angular gyrus
 - E) interneurons

36. The capacity of one brain area to take over the functions of another damaged brain area is known as brain
- A) tomography.
 - B) phrenology.
 - C) hemispherectomy.
 - D) aphasia.
 - E) plasticity.
37. Split-brain patients have had their _____ surgically cut.
- A) hippocampus
 - B) limbic system
 - C) corpus callosum
 - D) sensory cortex
 - E) reticular formation
38. A picture of a cat is briefly flashed in the left visual field and a picture of a mouse is briefly flashed in the right visual field of a split-brain patient. The individual will be able to use her
- A) right hand to indicate she saw a cat.
 - B) left hand to indicate she saw a mouse.
 - C) right hand to indicate she saw a mouse.
 - D) left or right hand to indicate she saw a cat.
 - E) left or right hand to indicate she saw a mouse.
39. Damage to the left cerebral hemisphere is most likely to reduce people's ability to
- A) speak fluently.
 - B) copy drawings.
 - C) recognize faces.
 - D) recognize familiar melodies.
 - E) see colors.
40. Someone trying to add a long series of three digit numbers is probably experiencing increased brain waves and bloodflow to which brain structure?
- A) left hemisphere
 - B) thalamus
 - C) reticular formation
 - D) right hemisphere
 - E) medulla

41. A patient who suffered a stroke says that she no longer recognizes herself in a mirror. Which brain structure was likely damaged in the stroke?
- A) occipital lobes
 - B) temporal lobes
 - C) left hemisphere
 - D) right hemisphere
 - E) reticular formation
42. What is the interdisciplinary study of how brain activity is linked with our mental processes called?
- A) social-cultural perspective
 - B) psychodynamic perspective
 - C) cognitive neuroscience
 - D) industrial-organizational psychology
 - E) biopsychosocial approach
43. Assessing the relative effects of nature and nurture on individual differences in personality would be of most direct interest to
- A) evolutionary psychologists.
 - B) humanistic psychologists.
 - C) behavior geneticists.
 - D) Freudian psychologists.
 - E) psychometricians.
44. The threadlike structures that contain genes are called
- A) synapses.
 - B) hormones.
 - C) neurons.
 - D) chromosomes.
 - E) genomes.
45. DNA is a complex
- A) sex hormone.
 - B) action potential.
 - C) molecule.
 - D) synapse.
 - E) neuron.

46. Chromosomes are located within human
- A) bone cells.
 - B) genes.
 - C) neurotransmitters.
 - D) gender schemas.
 - E) unconscious.
47. Depending on environmental conditions, specific genes can be either
- A) nature or nurture.
 - B) active or inactive.
 - C) identical or fraternal.
 - D) chromosomes or genomes.
 - E) sperm or eggs.
48. The complete set of genetic instructions in an organism's chromosomes is called the
- A) heritability index.
 - B) DNA molecule.
 - C) genome.
 - D) schema.
 - E) zygote.
49. Identical twins originate from the fertilization of
- A) a single egg cell by a single sperm cell.
 - B) two egg cells by a single sperm cell.
 - C) a single egg cell by two sperm cells.
 - D) two egg cells by two sperm cells.
 - E) either two egg cells or two sperm cells.
50. The genome is the complete
- A) collection of sexual characteristics regulated by the X and Y chromosomes.
 - B) range of traits that contribute to reproductive success.
 - C) set of genetic material in an organism's chromosomes.
 - D) set of interactions between genes and environments.
 - E) collection of genetic and hormonal influences on behavior.
51. Fraternal twins originate from the fertilization of
- A) a single egg cell by a single sperm cell.
 - B) two egg cells by a single sperm cell.
 - C) a single egg cell by two sperm cells.
 - D) two egg cells by two sperm cells.
 - E) a divided egg cell and one sperm cell.

52. Compared with identical twins, fraternal twins are
- A) less likely to be the same sex and more likely to be similar in extraversion.
 - B) more likely to be the same sex and more likely to be similar in extraversion.
 - C) more likely to be the same sex and less likely to be similar in extraversion.
 - D) less likely to be the same sex and less likely to be similar in extraversion.
 - E) less likely to be the same sex and equally likely to be similar in extraversion.
53. Studies of identical twins who had been reared apart most clearly highlight the importance of _____ in personality development.
- A) natural selection
 - B) mutation
 - C) adoptive relatives
 - D) home environments
 - E) genetic predispositions
54. Adopted children are more likely to demonstrate levels of agreeableness and extraversion, more similar to that of their biological parents than their adoptive parents. This finding suggests that personality traits are more strongly influenced by
- A) genes than by heredity.
 - B) home environment than by genes.
 - C) environmental relatives than by genetic relatives.
 - D) nurture than by nature.
 - E) genes than by the home environment.
55. Heritability refers to the extent to which
- A) unrelated individuals share common genes.
 - B) genetic mutations can be transmitted to one's offspring.
 - C) trait differences among individuals are attributable to genetic variations.
 - D) adult personality is determined by infant personality.
 - E) nurture controls a trait rather than nature.
56. Who are likely to show the greatest similarity in personality?
- A) Ruth and Ramona, identical twins
 - B) Philip and Paul, fraternal twins
 - C) Larry and Laura, brother and sister
 - D) Vincent Sr. and Vincent Jr., father and son
 - E) Elizabeth and Betsy, mother and daughter

57. Two plants are grown under the same environmental conditions, including the same soil conditions and the same amount of light and water, but one grows to 2 feet tall and the other is 1 foot tall. In this case, the heritability would be closest to
- A) 5 percent.
 - B) 25 percent.
 - C) 50 percent.
 - D) 80 percent.
 - E) 95 percent.
58. Gender differences in heritable personality traits cannot necessarily be attributed to male-female genetic differences because
- A) physical maturation proceeds at a different rate for males and females.
 - B) variations in personality contribute to gender differences.
 - C) heritable traits can be influenced by social environments.
 - D) males and females are also affected by their different sex hormones.
 - E) chromosomal adaptation has not been accounted for.
59. People have always responded so positively to Alyssa's good looks that she has developed a socially confident and outgoing personality. This best illustrates
- A) the impact of personality on gender identity.
 - B) that ideas about gender and social roles are complementary.
 - C) the interaction of nature and nurture.
 - D) the reciprocal influence of norms and roles.
 - E) the importance of nurture rather than nature.
60. Molecular behavior geneticists seek links between _____ and specific disorders.
- A) chromosomes
 - B) proteins
 - C) genes
 - D) environment
 - E) behavior
61. Evolutionary psychology studies the evolution of behavior and the mind using principles of
- A) humanism.
 - B) behaviorism.
 - C) naturalistic observation.
 - D) natural selection.
 - E) genome mapping.

62. Evolutionary psychology studies the evolution of behavior and the mind using principles of
- A) humanistic psychology.
 - B) psychotherapy.
 - C) self-regulation.
 - D) natural selection.
 - E) interaction.
63. Natural selection acts on
- A) proteins.
 - B) cells.
 - C) individuals.
 - D) siblings.
 - E) populations.
64. Evolutionary psychologists are most likely to emphasize that human adaptiveness to a variety of different environments has contributed to human
- A) naturalistic observation.
 - B) genetic mutations.
 - C) behavior correlations.
 - D) reproductive success.
 - E) prenatal development.
65. Dmitry Belyaev and Lyudmila Trut successfully domesticated wild foxes by means of
- A) heritability.
 - B) selective mating.
 - C) gene splicing.
 - D) hormone injections.
 - E) training.
66. An adaptation is an inherited physical or behavioral characteristic that
- A) increases an organism's chance for survival.
 - B) is ecologically disruptive.
 - C) enables an organism to control its environment.
 - D) may or may not benefit the organism.
 - E) has no effect on fitness.

67. According to evolutionary psychologists, our predisposition to overconsume fatty junk foods illustrates that we are biologically prepared to behave in ways that promoted the _____ of our ancestors.
- A) mutation
 - B) heredity
 - C) reproductive success
 - D) neuroticism
 - E) intelligence
68. An evolutionary psychologist would be likely to suggest that human preferences for sweet-tasting foods
- A) have hindered human reproduction.
 - B) are genetically predisposed.
 - C) correlate to climate conditions.
 - D) vary widely across cultures.
 - E) are not passed genetically to children.
69. Evolutionary psychologists have suggested that men are _____ likely than women to prefer mates with a fertile-looking appearance and _____ likely than women to prefer mates with wealth and social status.
- A) more; more
 - B) less; less
 - C) more; less
 - D) less; more
 - E) more; equally
70. Critics of evolutionary psychology are most likely to suggest that it underestimates the
- A) impact of genetic predispositions on human sexual behavior.
 - B) impact of cultural expectations on human sexual behavior.
 - C) variety of traits that contribute to reproductively successful behaviors.
 - D) extent to which certain gender differences in sexual behavior are common to all cultures.
 - E) number of human traits influenced by genetics.

Answer Key

1. C
2. D
3. D
4. D
5. A
6. D
7. B
8. D
9. C
10. C
11. A
12. B
13. D
14. B
15. D
16. E
17. D
18. A
19. D
20. C
21. D
22. E
23. B
24. B
25. C
26. A
27. C
28. A
29. D
30. C
31. D
32. E
33. D
34. D
35. C
36. E
37. C
38. C
39. A
40. A
41. D
42. C
43. C
44. D
45. C
46. A
47. B
48. C
49. A
50. C
51. D
52. D
53. E
54. E
55. C
56. A
57. E
58. C
59. C
60. C
61. D
62. D
63. E
64. D
65. B
66. A
67. C
68. B
69. C
70. B

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