

Review of Key Terms

Name: _____

Afferent nerve fibers
 Agonist
 Antagonist
 Autonomic nervous system (ANS)
 Axon
 Behavioral genetics
 Central nervous system (CNS)
 Cerebral cortex
 Cerebral hemispheres
 Cerebrospinal fluid (CSF)
 Chromosomes
 Corpus callosum
 Critical period
 Dendrites
 Dominant gene
 Efferent nerve fibers
 Electrical stimulation of the brain (ESB)
 Electroencephalograph (EEG)
 Endocrine System
 Endorphins
 Excitatory PSP
 Family studies

Fitness
 Forebrain
 Fraternal (dizygotic) twins
 Genes
 Genetic mapping
 Genotype
 Heterozygous condition
 Hindbrain
 Homozygous condition
 Hormones
 Hypothalamus
 Identical (monozygotic) twins
 Inclusive fitness
 Inhibitory PSP
 Lesioning
 Limbic system
 Midbrain
 Myelin sheath
 Natural selection
 Nerves
 Neurons
 Neurotransmitters

Parasympathetic division
 Perceptual asymmetries
 Peripheral nervous system
 Phenotype
 Pituitary gland
 Polygenic traits
 Postsynaptic potential (PSP)
 Recessive gene
 Resting potential
 Reuptake
 Soma
 Somatic nervous system
 Split-brain surgery
 Sympathetic division
 Synapse
 Synaptic cleft
 Terminal buttons
 Thalamus
 Transcranial magnetic stimulation (TMS)
 Twin studies
 Zygote

1. A technique that temporarily enhances or depresses neural activity in a specific area of the brain.
2. A limited time span for the development of an organism that is optimal for certain capacities to emerge because the organism is especially responsive to certain experiences.
3. Refers to the reproductive success of an individual organism relative to the average reproductive success in the population.
4. Individual cells in the nervous system that receive, integrate, and transmit information.
5. Neuron part that contains the cell nucleus and much of the chemical machinery common to most cells.
6. Branchlike parts of a neuron that are specialized to receive information.
7. A long, thin fiber that transmits signals away from the soma to other neurons, or to muscles or glands.
8. An insulating jacket, derived from glia cells that encases some axons.
9. Small knobs at the end of the axon that secrete chemicals called neurotransmitters.
10. A junction where information is transmitted between neurons.
11. The stable, negative charge of an inactive neuron.
12. A process in which neurotransmitters are sponged up from the synaptic cleft by the presynaptic neuron.
13. Posits that heritable characteristics that provide a survival or reproductive advantage are more likely than alternative characteristics to be passed on to subsequent generations and thus come to be "selected" over time.
14. A microscopic gap between the terminal buttons of the sending neuron and the cell membrane of another cell.
15. Chemicals that transmit information from one neuron to another.

16. A voltage change at the receptor site of a neuron.
17. An electric potential that increases the likelihood that a postsynaptic neuron will fire action potentials.
18. An electric potential that decreases the likelihood that a postsynaptic neuron will fire action potentials.
19. A technique for assessing hereditary influence by examining blood relatives to see how much they resemble each other on a specific trait.
20. A chemical that mimics the action of a neurotransmitter.
21. A chemical that opposes the action of a neurotransmitter.
22. An entire family of internally produced chemicals that resemble opiates in structure and effects.
23. System that includes all those nerves that lie outside the brain and spinal cord.
24. Bundles of neuron fibers (axons) that travel together in the peripheral nervous system.
25. System made up of the nerves that connect to voluntary skeletal muscles and sensory receptors.
26. Axons that carry information inward to the central nervous system from the periphery of the body.
27. Axons that carry information outward from the central nervous system to the periphery of the body.
28. System made up of the nerves that connect to the heart, blood vessels, smooth muscles, and glands.
29. The branch of the autonomic nervous system that mobilizes the body's resources for emergencies.
30. The branch of the autonomic nervous system that generally conserves bodily resources.
31. System that consists of the brain and spinal cord.
32. A solution that fills the hollow cavities (ventricles) of the brain and circulates around the brain and spinal cord.
33. A device that monitors the electrical activity of the brain over time by means of recording electrodes attached to the surface of the scalp.
34. Assessing hereditary influence by comparing the resemblance of identical twins and fraternal twins on a trait.
35. Method that involves destroying a piece of the brain by means of a strong electric current delivered through an electrode.
36. Method that involves sending a weak electric current into a brain structure to stimulate (activate) it.
37. Part of the brain that includes the cerebellum and two structures found in the lower part of the brainstem, the medulla and the pons.
38. The segment of the brainstem that lies between the hindbrain and the forebrain.
39. Part of the brain encompassing the thalamus, hypothalamus, limbic system, and cerebrum.
40. A structure in the forebrain through which all sensory information (except smell) must pass to get to the cerebral cortex.
41. A structure found near the base of the forebrain that is involved in the regulation of basic biological needs.
42. A densely connected network of structures located beneath the cerebral cortex, involved in the control of emotion, motivation, and memory.
43. The convoluted outer layer of the cerebrum.

- _____ 44. The right and left halves of the cerebrum.
- _____ 45. The structure that connects the two cerebral hemispheres.
- _____ 46. The process of determining the location and chemical sequence of specific genes or chromosomes.
- _____ 47. Surgery in which the corpus callosum is severed to reduce the severity of epileptic seizures.
- _____ 48. System of glands that secrete chemicals into the bloodstream that help control bodily functioning.
- _____ 49. The chemical substances released by the endocrine glands.
- _____ 50. The "master gland" of the endocrine system.
- _____ 51. Threadlike strands of DNA molecules that carry genetic information.
- _____ 52. A one-celled organism formed by the union of a sperm and an egg.
- _____ 53. DNA segments that serve as the key functional units in hereditary transmission.
- _____ 54. A gene that is expressed when the paired genes are different (heterozygous).
- _____ 55. A gene that is masked when paired genes are heterozygous.
- _____ 56. A person's genetic makeup.
- _____ 57. The ways in which a person's genotype is manifested in observable characteristics.
- _____ 58. Characteristics that are influenced by more than one pair of genes.
- _____ 59. The sum of an individual's own reproductive success, plus the effects the organism has on the reproductive success of related others.
- _____ 60. Twins that result when two eggs are fertilized simultaneously by different sperm cells, forming two separate zygotes.
- _____ 61. Left-right imbalances between the cerebral hemispheres in the speed of visual or auditory processing.
- _____ 62. Twins that emerge from one zygote that splits.
- _____ 63. An interdisciplinary field that studies the influence of genetic factors on behavioral traits.
- _____ 64. The two genes in a specific pair are the same.
- _____ 65. The two genes in a specific pair are different.

Review of Key People

Charles Darwin
Alan Hodgkin & Andrew Huxley

James Olds & Peter Milner
Candice Pert & Solomon Snyder

Robert Plomin
Roger Sperry & Michael Garzzaniga

- _____ 1. Unlocked the mystery of the neural impulse.
- _____ 2. Known for their work with the split-brain.
- _____ 3. Showed that morphine works by binding to specific receptors.
- _____ 4. Discovered "pleasure-centers" in the limbic system.
- _____ 5. One of the leading behavior genetics researchers in the last decade.
- _____ 6. Identified natural selection as the mechanism that orchestrates the process of evolution.

Self-Quiz

1. Most neurons are involved in transmitting information:
 - a. from one neuron to another
 - b. from the outside world to the brain
 - c. from the brain to the muscles
 - d. from the brain to the glands
2. Which part of the neuron has the responsibility for receiving information from other neurons?
 - a. the cell body
 - b. the soma
 - c. the axon
 - d. the dendrites
3. The myelin sheath serves to:
 - a. permit faster transmission of the neural impulse
 - b. keep neural impulses on the right track
 - c. add structural strength
 - d. permit faster transmission and keep neural impulses on track
4. The change in the polarity of a neuron that results from the inflow of positively charged ions and the outflow of negatively charged ions is called the:
 - a. presynaptic potential
 - b. postsynaptic potential
 - c. synaptic potential
 - d. action potential
5. The task of passing a message from one neuron to another is actually carried out by:
 - a. the myelin sheath
 - b. the glia cells
 - c. the action potential
 - d. neurotransmitters
6. Which of the following techniques is often used by neurosurgeons to map the brain when performing brain surgery?
 - a. EEG recordings
 - b. ESB
 - c. lesioning
 - d. all of the above
7. The seat of emotion is to be found in the:
 - a. reticular formation
 - b. hindbrain
 - c. limbic system
 - d. forebrain
8. Persons having difficulty with language and speech following an accident that resulted in injury to the brain are most likely to have sustained damage in the:
 - a. right cerebral hemisphere
 - b. left cerebral hemisphere
 - c. right cerebral hemisphere if they are a male and left cerebral hemisphere if they are a female
 - d. I have no idea what you are talking about
9. In carrying out the "fight or flight" response, the role of supervisor is assigned to the:
 - a. adrenal gland
 - b. pituitary gland
 - c. hypothalamus
 - d. parasympathetic nervous system

10. A person's current weight and height could be said to exemplify his or her:
- genotype
 - phenotype
 - both of the above
 - none of the above
11. Which of the following kinds of studies can truly demonstrate that specific traits are indeed inherited?
- family studies
 - twin studies
 - adoption studies
 - none of the above
12. Current evidence indicates that schizophrenia results from:
- genetic factors
 - environmental factors
 - multiple causes that involve both genetic and environmental factors
 - completely unknown factors
13. Psychology as a science can be said to be:
- empirical
 - rational
 - analytic
 - both b and c
14. Which of the following statements is/are correct?
- The right side of the brain is the creative side.
 - The right and left brains are specialized to handle different kinds of information.
 - The left side of the brain always handles language tasks.
 - Most schooling overlooks the education of the right brain.
15. Which of the following is not one of Darwin's four key insights?
- Some characteristics are heritable.
 - Organisms vary in endless ways.
 - Genetic drift is a major factor in the evolution of species.
 - Organisms tend to reproduce faster than available resources.
16. The evolution of species is:
- a fact
 - a theory with a few flaws
 - a theory with many flaws
 - a speculation not open to empirical verification
17. Which of the following is correct?
- Human beings begin life with an insufficient number of synapses.
 - Human beings begin life with an overabundance of synapses.
 - Synaptic density is associated with intelligence.
 - Brain development is only malleable during the first 3 years of life.