Anatomy & Physiology I

Self Quiz Ch 12

Pro: Manhal Chbat, MD

1. The nervous system

A) works with the endocrine system to maintain homeostasis.

B) communicates with the body via action potentials.

C) is responsible for thoughts and behaviors.

D) initiates voluntary movements.

E) All of these are correct.

2. Which of the following correctly describes a function of the nervous system?

A) sensory: detect changes in the environment; relays information to the brain and spinal cord.

B) integrative : response system; causes muscles to contract or glands to empty based

C) motor: process and make decisions regarding sensory input; responsible for perception.

D) A and B are correct.

E) A, B and C are correct.

3. The central nervous system

A) excludes the cranial and spinal nerves, ganglia and sensory receptors.

B) is the source of thoughts and emotions.

C) is the destination of action potentials from motor neurons.

D) A and B are correct.

E) A, B and C are correct.

4. The somatic nervous system

A) provides motor signals and conscious control to skeletal muscles.

B) includes sympathetic and parasympathetic divisions.

C) regulates the gastrointestinal tract.

D) is dependent on the autonomic system for control.

E) includes motor neurons to smooth muscles.

5. Which of the following is true of a synapse?

A) The presynaptic neuron carries a nerve impulse away from a synapse.

B) The postsynaptic neuron carries a nerve impulse toward a synapse.

C) A synapse is the site of where two neurons or a neuron and an effector meet.

D) The presynaptic neuron releases chemical messengers called hormones.

E) The synapse of a neuron and a gland is called a neuromuscular junction.

6. Neuroglia

A) comprise about one-half of the tissue in the CNS.

B) retain mitotic potential but do not conduct nerve impulses.

C) support and protect neurons.

D) A and B are correct.

E) A, B and C are correct.

7. When ions move across the plasma membrane,

A) they pass though specific phospholipids that serve as ion channels.

B) they flow up their concentration gradient toward an area of the same charge.

C) they create a flow of electrical current that can disturb the resting membrane potential.

D) A and B are correct.

E) A, B and C are correct.

8. Place the events involved in generating an action potential in the order in which they occur”

1. K+ moves out of the cell.

2. Na+ activation gates open.

3. Excess K+ leaves cell causing hyperpolarization.

4. Na+ enters cell and voltage becomes less negative.

5. K+ channels close.

6. threshold stimulus arrives.

7. Leakage channels restore resting membrane potential.

8. Na+ inactivation gates close and K+ open.

A) 6, 4, 2, 8, 1, 3, 5, 7

B) 6, 4, 8, 2, 1, 3, 5, 7

C) 6, 2, 4, 8, 1, 3, 5, 7

D) 6, 2, 4, 8, 3, 1, 5, 7

E) 6, 2, 4, 3, 8, 1, 5, 7

9. Some governments execute convicts using lethal injections that contain high concentrations of KCl. At the cellular level, how does the high concentration of KCl kill the convict?

A) The excess K+ disrupts the electrochemical gradient, preventing neurons from depolarizing.

B) The excess K+ disrupts the electrochemical gradient, preventing neurons from repolarizing.

C) The excess K+ enhances generation of action potentials, causing cells to run out of energy.

D) A and B are correct.

E) B and C are correct.

10. Place the events at a chemical synapse in the order in which they occur:

1. action potential arrives at pre-synaptic neuron's end bulbs; Ca2+ channels to open

2. Ca2+ binds to synaptic vesicles; vesicles fuse with presynaptic neuron's membrane

3. postsynaptic potential develops

4. neurotransmitter binds to receptors (ligand-gated channels) on postsynaptic membrane

5. neurotransmitter exocytosed; diffuses across synaptic cleft

A) 1, 2, 4, 5, 3

B) 1, 4, 2, 5, 3

C) 1, 2, 5, 4, 3

D) 1, 2, 4, 3, 5

E) 1, 3, 2, 4, 5

11. Which of the following is NOT classified as a small molecule neurotransmitter?

A) acetylcholine

B) aspartate

C) substance P

D) adenosine triphosphate

E) norepinephrine

12. Acetylcholine

A) is released from some CNS neurons and most PNS neurons.

B) is excitatory at skeletal muscle motor end plates.

C) is inhibitory where the vagus (X) nerve synapses with cardiac fibers.

D) is removed from synapses by the enzyme, acetylcholinesterase.

E) All of these are correct.

13. Each of the following is an amino acid that functions as a neurotransmitter EXCEPT:

A) enkephalin

B) glycine

C) GABA

D) aspartate

E) glutamate

14. Norepinephrine

A) is required for the loss of consciousness that allows us to sleep.

B) is used by fewer neurons in the brain; more neurons use epinephrine.

C) and epinephrine are also made by the adrenal glands and can be considered hormones.

D) A and B are correct.

E) A, B and C are correct.

Use the following to answer questions 15-17.

Choose the answer that best matches the description or term.

A) afferent neurons

B) central nervous system

C) efferent neurons

D) interneurons

E) peripheral nervous system

15. serve integrative function; majority of neurons in body

16. deliver response signals to muscles, glands and other tissues

17. any part of the nervous system other than the brain and spinal cord

Use the following to answer questions 18-20.

Choose the answer that best matches the description or term.

A) autonomic nervous system

B) enteric nervous system

C) parasympathetic division

D) somatic nervous system

E) sympathetic division

18. relays sensory information from skin and muscles to CNS

19. provides “fight or flight” response

20. provides unconscious control of cardiovascular system