

**Practice Questions Ch 4, part 1: (updated 2/15/22)**

- The supporting cells that form myelin sheath in the peripheral nervous system.
  - Oligodendrocytes.
  - Satellite cells
  - Schwann cells
  - Astrocytes
  - Microglia
- Depolarization of a cell (neuron, muscle, or glandular) is produced by
  - opening of Cl<sup>-</sup> ion channels
  - opening of Na<sup>+</sup> channels
  - opening of Ca<sup>+2</sup> channels
  - opening of K<sup>+</sup> channels
  - both A & D
  - both B & C
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- A drug that inactivates acetylcholinesterase
  - inhibits the release of ACh from a presynaptic neuron.
  - inhibits the attachment of ACh to its receptor.
  - inhibits ACh breakdown and causes excessive muscle contraction.
  - does all of these.
- Repolarization (a.k.a. hyperpolarization) of the postsynaptic membrane in response to glycine or GABA is produced by the opening of
  - Na<sup>+</sup> channels
  - K<sup>+</sup> channels
  - Ca<sup>+2</sup> channels
  - Cl<sup>-</sup> channels
  - H<sup>+</sup> channels
- Which of these statements about ACh receptors is false?
  - Skeletal muscles contain nicotinic ACh receptors.
  - The heart contains muscarinic ACh receptors.
  - The heart contains nicotinic ACh receptors
  - ACh receptors can be either nicotinic or muscarinic.
- Which of these statements about adrenergic receptors is false?
  - β1-adrenergic receptors are found in the heart.
  - β2-adrenergic receptors are found on skeletal muscles.
  - α-adrenergic receptors are found in smooth muscle of the GI tract.
  - β2-adrenergic receptors are found in smooth muscle of bronchioles.

Match the description on the left with answer choices on the right for questions 8 -12. It is possible for answer choices to be used more than once.

- |   |  |
|---|--|
| 8. Will increase heart rate.                          | A. ACh binding to muscarinic cholinergic receptors.        |
| 9. Will cause bronchodilation.                        | B. ACh binding to nicotinic cholinergic receptors.         |
| 10. Will slow activity of GI tract smooth muscle.     | C. Epinephrine binding to nicotinic cholinergic receptors. |
| 11. Will speed up activity of GI tract smooth muscle. | D. Epinephrine binding to $\beta$ 2-adrenergic receptors.  |
| 12. Will decrease heart rate.                         | E. Epinephrine binding to $\alpha$ -adrenergic receptors.  |
|   | F. Epinephrine binding to $\beta$ 1-adrenergic receptors.  |

13. Which of the following neurotransmitters a monoamine produced from tryptophan?

- |             |                |
|-------------|----------------|
| A. ACh      | D. Glycine     |
| B. Dopamine | E. Serotonin   |
| C. GABA     | F. Epinephrine |

14. Exposure to which of the following produces hypertonia and cholinergic syndrome?

- |                   |                                 |
|-------------------|---------------------------------|
| A. Botulism toxin | E. Sarin gas                    |
| B. Tetanus toxin  | F. Organophosphate insecticides |
| C. Saxitoxin      | G. answers A, C, and D          |
| D. Tetrodotoxin   | H. answers B, E and F.          |

15. Which of the following is a disorder involving autoimmune destruction of ACh receptors on muscles?

- |                                  |                        |
|----------------------------------|------------------------|
| A. Alzheimer's disease           | E. Myasthenia gravis   |
| B. Amyotrophic lateral sclerosis | F. Parkinson's disease |
| C. Multiple sclerosis            | G. Cystic fibrosis     |
| D. Huntington's disease          |                        |

**Ch 4. Answers:**

1. C
2. F
3. E
4. C
5. D
6. C
7. B
8. F
9. D
10. E
11. A
12. A
13. E
14. H
15. E

*How did you do?*