

Below are assessment questions from Codon Learning's autonomic nervous system unit that you can use to test your student's knowledge before class or after class. The correct answers and Bloom's Taxonomy levels are given after each question.

Visit www.codonlearning.com to learn about our high structure anatomy and physiology course designed by Justin Shaffer at the Colorado School of Mines that uses evidence-based teaching practices to improve student learning and outcomes.

1. Which of the following effects occur due to sympathetic innervation?

- A. Release of epinephrine from adrenal medulla
- B. Increase in digestive tract motility
- C. Decrease in strength of heart contractions
- D. Increases strength of contractions in uterine wall

Correct answer: A

Blooms Level: 1 (Knowledge)

2. Which of the following effects occur due to parasympathetic innervation?

- A. Erection of the penis
- B. Contraction of arrector pili muscles
- C. Inhibition of salivary glands
- D. Constriction of blood vessels

Correct answer: A

Blooms Level: 1 (Knowledge)

3. Imagine that you got very scared watching a super scary movie. Which of the following might have occurred in your body as a result?

- A. Your blood pressure decreased due to sympathetic innervation
- B. Your sweat glands released sweat due to parasympathetic innervation
- C. Your arrector pili muscles contracted due to sympathetic innervation
- D. Your heart rate decreased due to parasympathetic innervation

Correct answer: C

Blooms Level: 2 (Comprehension)

4. Muscle tissue is innervated by both the somatic motor and autonomic nervous systems. Which type(s) of muscle tissues is(are) innervated by the autonomic nervous system?

- A. Skeletal muscle only
- B. Smooth muscle only
- C. Cardiac muscle only
- D. Cardiac and smooth muscle only
- E. Skeletal, cardiac, and smooth muscle

Correct answer: D

Blooms Level: 1 (Knowledge)

5. Which of the following is an example of a negative feedback loop related to the autonomic nervous system?

- A. Your muscles feel tired after a strenuous exercise regime
- B. Your body cools off after being exposed to high temperatures
- C. Your leg jerks forward when your doctor taps your kneecap
- D. Your blood pressure rises after eating a large bowl of salty popcorn

Correct answer: B

Blooms Level: 2 (Comprehension)

6. Which of the following statements about the structures of the autonomic nervous system is *false*?

- A. Cranial nerve X is the major nerve that carries parasympathetic outflow from the brain
- B. Parasympathetic outflow from the spinal cord is carried in spinal nerves S2, S2, and S4
- C. Sympathetic neurons that innervate the head and neck synapse in collateral ganglia
- D. Gray rami emerge from ventral rami along the entire length of the spinal cord

Correct answer: D

Blooms Level: 2 (Comprehension)

7. Which of the following are locations where cholinergic receptors are found in the autonomic nervous system? Select all that apply.

- A. Synaptic clefts between neurons
- B. Neuromuscular junctions
- C. Cardiac muscle
- D. Smooth muscle
- E. Sweat glands

Answers: A, B, and E

Blooms Level: 2 (Comprehension)

8. Mydriasis is the physiological action of dilation of the pupil and is under control of α -1 receptors in the sympathetic nervous system. Which of the following would likely occur if a patient was treated with an α -1 blocking drug?

- A. Mydriasis would not occur
- B. Mydriasis would occur to a greater extent than normal
- C. Mydriasis would occur normally

Answer: A

Blooms Level: 3 (Application)

9. Which of the following are roles of the sympathetic nervous system? Select all that apply.

- A. Increasing rate of cardiac muscle contraction
- B. Relaxing smooth muscle in bladder
- C. Decreasing secretion of bile from gall bladder
- D. Constricting pupil size

Answers: A, B, and C

Blooms Level: 1 (Knowledge)

10. Which of the following best describes autonomic innervation of the heart?

- A. The heart is only innervated by the sympathetic nervous system
- B. The heart is only innervated by the parasympathetic nervous system
- C. The heart is innervated by both the sympathetic and parasympathetic nervous systems and they have complementary effects on the heart
- D. The heart is innervated by both the sympathetic and parasympathetic nervous systems and they have opposite effects on the heart

Answer: D

Blooms Level: 2 (Comprehension)

11. The defecation reflex is a parasympathetic polysynaptic reflex that leads to elimination of feces through relaxation of the internal anal sphincter. Where is(are) the synapses in this reflex arc located?

- A. Lateral horn only
- B. Collateral ganglion only
- C. Intramural ganglion only
- D. Lateral horn and collateral ganglion only
- E. Lateral horn and intramural ganglion only

Answer: E

Blooms Level: 2 (Comprehension)