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**Exam** : **PCAT**

**Title** : Pharmacy College  
Admission Test

**Version** : **DEMO**

1. Which of the following would NOT occur during sympathetic stimulation?

- A. secretion of glucagon
- B. dilation of bronchioles
- C. dilation of intestinal blood vessels
- D. dilation of pupils

**Answer: C**

**Explanation:**

The blood flow to visceral organs decreases during sympathetic stimulation, but increases under parasympathetic stimulation. One function of the sympathetic nervous system is to increase blood flow to organs in demand of air or nutrients. During the fight-or-flight response, vasodilation works to move blood away from the digestive system and towards the muscles.

2. Which of the following would increase the pH of the blood?

- A. severe damage to the kidneys
- B. the digestion of a big meal
- C. an increase in anaerobic respiration
- D. an increase of the blood pCO<sub>2</sub>

**Answer: B**

**Explanation:**

During the digestion of a large meal, parietal cells in the stomach generate hydrochloric acid (HCl) in exchange for a bicarbonate ion which enters the blood plasma, increasing the pH.

3. Which of the following yields the least ATP directly?

- A. TCA cycle
- B. oxidative phosphorylation
- C. glycolysis
- D. Beta Oxidation

**Answer: A**

**Explanation:**

The TCA cycle yields 2 GTPs (molecules that can be converted to ATP but are not ATP themselves), oxidative phosphorylation, which includes the ETC, can yield from 32 to 34 ATP. Glycolysis yields 2 ATP. Beta oxidation yields a range over 100 ATP that depends on the length of the fatty acid being degraded.

4. The T-tubules transmit an action potential, causing the opening of \_\_\_\_ channels in the \_\_\_\_.

- A. Na<sup>+</sup>, Sarcoplasm
- B. Ca<sup>2+</sup>, Sarcoplasmic Reticulum
- C. Na<sup>+</sup>, Sarcoplasmic Reticulum
- D. Ca<sup>2+</sup>, Sarcoplasm

**Answer: B**

**Explanation:**

The T-tubules conduct action potentials that cause channels to open on the surface of the sarcoplasmic reticulum. The opening of these channels results in a release of Ca<sup>2+</sup> into the sarcoplasm of the muscle fiber.

5. Which of the following decompose disaccharides into monosaccharides?

- A. salivary amylase
- B. pancreatic enzymes
- C. gastrin
- D. brush border enzymes

**Answer:** D

**Explanation:**

Disaccharides such as sucrose, maltose, and lactose, etc., are broken down further into monosaccharides (primarily glucose) in the small intestine by way of brush border enzymes lining microvilli of the small intestine.