WSU BIOLOGY 106 EXAM 4 ACTUAL EXAM 2 LATEST VERSIONS (VERSION A & B)2023-2024 ACTUAL EXAM 210 QUESTIONS AND CORRECT DETAILED ANSWERS WITH RATIONALES |ALREADY GRADED A+

VERSION A

Which of the following scenarios would ammonia be excreted nitrogenous waste product - ANSWER- If fish living in a freshwater environment

Uric acid is the least toxic of the nitrogenous waste. Why don't all animals produce it - ANSWER- It requires a lot of energy to produce it

Which of the following areas are not involved in retaining water in the body - ANSWER- Ascending loop of henle

Where would you find the highest osmolarity in the interstitial fluid surrounding the nephron - ANSWER- At the bottom of the medulla

What molecules are moving out of the collecting duct walls - ANSWER- H2O, NaCl, and Urea

Why does water move passively out of the nephron - ANSWER- Because the interstitial fluid around the nephron has a higher concentration of salt than the fluid inside the nephron

If you made the loop of henle longer, what benefit would that have for an animal living in a very dry desert environment - ANSWER- It would allow them to reclaim more water from the nephron then if it was shorter

Drinking alcohol lead to dehydration because it affects the release of antidiuretic . Which option is best explains this phenomenon - ANSWER- Alcohol blocks the release of ADH and so the collecting duct becomes less permeable to water causing dehydration

Many different organ systems, including girls, lungs, and intestines have tissues with lots of infolding or branching. What is the primary physiological function of this infolding - ANSWER- It creates a larger surface area to volume ratio for exchange to occur

What is the role of the hill lock in a post synaptic nerve - ANSWER- It's summarizes all incoming signals and determines whether the axon will undergo an action potential or not

Which description accurately describes an axon at resting potential - ANSWER- Sodium ions have a higher concentration on the outside wall potassium ions have a higher concentration on the inside of the axon

During an action potential, what is moving into the neuron - ANSWER- Na+

These are activated to open when neurotransmitters bind of them - ANSWER- Chemically sensitive gates

These are located along the axon of the presynaptic cell - ANSWER- Voltage sensitive gates

These open in response to a change in charge across the membrane - ANSWER- Voltage sensitive gates

At some point, the K plus gates open and K plus moves down its concentration gradient. How does this change the dynamics of the axon - ANSWER- The voltage difference will get restored

What is the role of the sodium/potassium pump - ANSWER- It restores that Ion gradient across the membrane and resets the resting potential

Why doesn't the action potential travel backwards up the axon - ANSWER- Because the sodium channels won't open for a set amount of time and the sellers hyperpolarized making it more difficult to reach threshold

The action potential arrives at the terminal end. At this point, what new ion moves into a cell in response to the action potential arriving - ANSWER- Ca 2+

What is the role of Ca2+ in a nerve signal - ANSWER- It causes neurotransmitters to be released into the synaptic cleft

Which statement is true about the synapse - ANSWER- The action potential ends of the presynaptic cell and neurotransmitters carry the signal across the synaptic cleft to the postsynaptic cell

A post synaptic cell receives the signal that causes it to hyperpolarized. Which of the following gates must have opened to cause this - ANSWER- K+ (IPSP)

Which scenario describes temporal summation in the postsynaptic cell - ANSWER- The incoming signal fire rapidly in succession

What is the function of a Schwann cell - ANSWER- It allows the action potential to travel along the axon more rapidly

Which of the following describes the peripheral nervous system - ANSWER- The sensory cells of nervous leading to the spinal cord

Given what you know about the functions of each muscle type, which one would be associated with the arteries and veins to help to move blood through the circulatory system - ANSWER- Smooth muscle