

Name _____

WORKSHEET #I
Human Physiology
Due at time of Exam I

Choose the one alternative that BEST completes the statement or answers the question. If a True or False statement is false you need to rewrite it to make it true.

1. _____ is a response mechanism that serves to maintain a state of internal consistency, or _____.
 - a. Negative feedback, homeostasis
 - b. Positive feedback, homeostasis
 - c. Positive feedback, regulators
 - d. Negative feedback, regulators

2. The osmoreceptors in the hypothalamus detect a decrease in blood volume and signal the posterior pituitary to release the hormone ADH. In this instance the posterior pituitary function as
 - a. an intrinsic (sensor) regulatory mechanism.
 - b. an extrinsic (sensor) regulatory mechanism.
 - c. a sensor
 - d. an integrating center
 - e. an effector.

3. Which feature is seen with a simple columnar epithelium? Circle ALL that apply.
 - a. single layer of cells
 - b. cells are flattened and tightly bound
 - c. function is excretion
 - d. cells are cube-shaped
 - e. line kidney tubules

4. Draw and label a nitrogen atom. Be sure to include the electron shells/clouds, nucleus, protons, neutrons, and electrons.

5. Draw and label 5 water molecules held together by hydrogen bonds.
6. T or F Solution A has a pH of 10^{-5} and solution B has a pH of 10^{-3} . Solution A has 100 times more H^+ than Solution B.
7. The organelle that metabolizes nonpolar compounds and stores Ca^{2+} in striated muscle cells is
- the Golgi complex.
 - the rough (granular) endoplasmic reticulum.
 - the smooth (agranular) endoplasmic reticulum.
 - the ribosome.
 - the mitochondria.
8. The plasma membrane consists of a double layer of phospholipids. Proteins may completely or partially span the membrane. _____ proteins are specific for a particular messenger.
- Receptor
 - Phagocytic
 - Marker
 - a and b are correct
 - a and c are correct
9. The process by which molecules leave the cell is/are called
- phagocytosis.
 - endocytosis.
 - pinocytosis.
 - exocytosis.
 - a and b are correct
 - a, b, and c are correct
 - a, b, c, and d are correct

10. Enzymes are biological catalysts. Which of the following is *not* a function of a catalyst?
- increases the rate of a reaction
 - does not change the nature of the reaction or its final result
 - lowers the activation energy required for the reaction
 - is changed at the end of the reaction
 - All of the above are correct
11. T or F The rate of a chemical reaction is independent of temperature.
12. _____ reactions release energy as they proceed while _____ reactions need the addition of energy to proceed. $\text{ATP} \rightarrow \text{ADP} + \text{P}_i$ is an example of an _____ reaction.
- Exergonic, endergonic, exergonic
 - Exergonic, endergonic, endergonic
 - Endergonic, exergonic, endergonic
 - Endergonic, exergonic, exergonic
13. According to the law of mass action, which of these conditions will drive the reaction $\text{A} + \text{B} \leftrightarrow \text{C}$ to the right?
- an increase in the concentration of A and B
 - a decrease in the concentration of C
 - an increase in the concentration of enzyme
 - a and b are correct
 - b and c are correct
 - None of the above are correct
14. When lactic acid is converted to glucose in the liver, this process is called
- glycolysis.
 - glycogenesis.
 - glycogenolysis.
 - gluconeogenesis.
 - ketogenesis.
15. In the mitochondria, it takes _____ protons to produce 1 ATP that enters the cytoplasm.
- 2
 - 4
 - 6
 - 8
 - 10