Shapes Specific Interaction Star 1

Name: _____ **Date:** _____

1. A characteristic shared by all enzymes, hormones, and antibodies is that their function is determined by the

   A. shape of their molecules

   B. DNA they contain

   C. inorganic molecules they contain

   D. organelles present in their structure

2. Antibody molecules and receptor molecules are similar in that they both

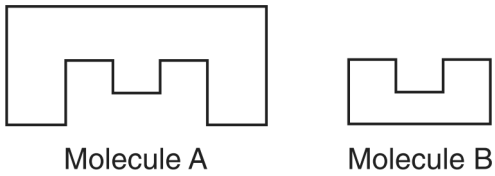
   A. control transport through the cell membrane

   B. have a specific shape related to their specific function

   C. remove wastes from the body

   D. speed up chemical reactions in cells

3. The diagram below represents two molecules that can interact with each other to cause a biochemical process to occur in a cell.



   Molecules *A* and *B* most likely represent

   A. a protein and a chromosome

   B. a receptor and a hormone

   C. a carbohydrate and an amino acid

   D. an antibody and a hormone

4. Two primary agents of cellular communication are

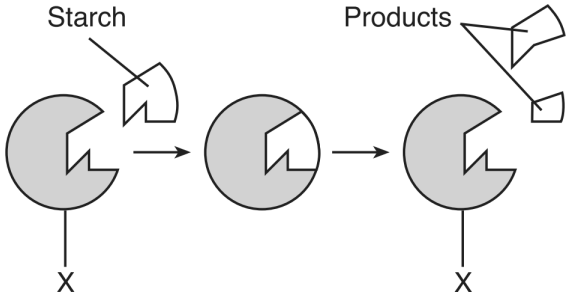
   A. chemicals made by blood cells and simple sugars

   B. hormones and carbohydrates

   C. enzymes and starches

   D. hormones and chemicals made by nerve cells

5. Base your answer(s) to the following question(s) on the diagram below, which represents stages in the digestion of a starch, and on your knowledge of biology.



The products would most likely contain

A. simple sugars
B. fats
C. amino acids
D. minerals

6. Many biological catalysts, hormones, and receptor molecules are similar in that, in order to function properly, they must

A. interact with each other at a high pH
B. interact with molecules that can alter their specific bonding patterns
C. contain amino acid chains that fold into a specific shape
D. contain identical DNA base sequences

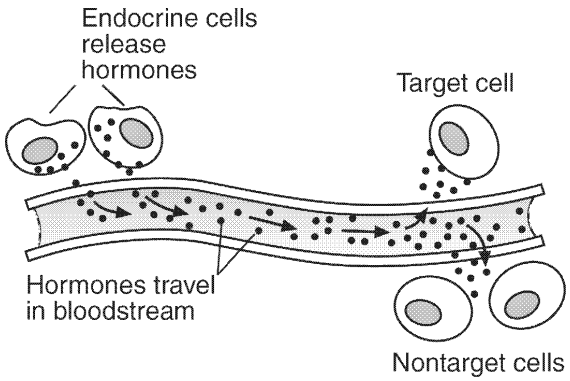
7. The enzyme amylase will affect the breakdown of carbohydrates, but it will not affect the breakdown of proteins. The ability of an enzyme molecule to interact with specific molecules is most directly determined by the

A. shapes of the molecules involved
B. number of molecules involved
C. sequence of bases present in ATP
D. amount of glucose present in the cell

8. A characteristic of hormones and enzymes that allows them to work effectively with other organic molecules is their

A. specific shape
B. small size
C. concentration of carbon and hydrogen atoms
D. high-energy bonds

9. The accompanying diagram shows a biological process.



Explain why the hormones attach to the target cell and not to other cells in the diagram.

10. Enzyme molecules normally interact with substrate molecules. Some medicines work by blocking enzyme activity in pathogens. These medicines are effective because they

A. are the same size as the enzyme

B. are the same size as the substrate molecules

C. have a shape that fits into the enzyme

D. have a shape that fits into all cell receptors

Shapes Specific Interaction Star 1 05/28/2015

1.
Answer: A

2.
Answer: B

3.
Answer: B

4.
Answer: D

5.
Answer: A

6.
Answer: C

7.
Answer: A

8.
Answer: A

9.
Answer: Target cells have receptors that are specific for that hormone.

10.
Answer: C