

Biology-Chapter2 (Biology-Chapter2)

Name: _____ Date: _____

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1.

Carbohydrates are used by the body as a source of quick energy, and are made up of

- A. carbon, hydrogen, and oxygen.
- B. oxygen, hydrogen, and protein.
- C. potassium, oxygen, and carbon.
- D. hydrogen, cholesterol, and oxygen.

2. Which is the primary energy source for **most** animals?

- A. carbohydrates
- B. proteins
- C. fiber
- D. fats

3.

Which class of biomolecule includes monosaccharides such as the blood sugar glucose, and the fruit sugar, fructose, which is found in energy drinks?

- A. carbohydrates
- B. lipids
- C. nucleic acids
- D. proteins

4.

Which statement about the function enzymes in living systems is MOST accurate?

- A. Enzymes are proteins that raise the activation energy for chemical reactions.
- B. Enzymes are proteins that lower the activation energy for chemical reactions.
- C. Enzymes are nucleic acids that raise the activation energy of chemical reactions.
- D. Enzymes are nucleic acids that lower the activation energy of chemical reactions.

5.

Grizzly bears, such as the ones shown, gain 200 to 500 pounds of fat every summer, feasting on salmon, berries, and honey. In winter, almost all of this stored weight is lost during hibernation. What type of stored biomolecules allow the grizzly to hibernate this way, without starving to death?

- A. carbohydrates
- B. lipids
- C. nucleic acids
- D. proteins

6.

Which statement regarding proteins is true?

- A. Proteins are used to carry the genetic code in the nucleus of a cell.
- B. Proteins make up most of the cell and tissue structures in animals.
- C. Proteins are synthesized in the mitochondria of the cell.
- D. Proteins are the building blocks of amino acids.

7.

Which statement is correct, with regard to the catalase enzyme catalyzing the breakdown of hydrogen peroxide into water and oxygen?

- A. Water is a substrate in this reaction.
- B. Bonds in the hydrogen peroxide are weakened in catalase's active site, allowing the chemical reaction to occur.
- C. Hydrogen peroxide is produced by the catalase enzyme.
- D. The breakdown of hydrogen peroxide would still occur naturally, but occurs less rapidly with the catalase enzyme.

8.

The diagram shows a stepwise reaction for the enzyme coagulase, which is involved in blood clotting. Which of the substances is the product?

- A. coagulase enzyme
- B. protein A
- C. protein B
- D. clot protein

9.

Edgar, a biochemist, claims to have found a new variety of a type of small biomolecule. Edgar notes that there are now 21 types of this biomolecule instead of the old known 20. The molecule can also be combined with others in its class to produce a wide variety of proteins, some liquid and others solid. What type of biomolecule did Edgar find?

- A. a nucleic acid
- B. a monosaccharide
- C. an amino acid
- D. a fatty acid

10.

The enzyme amylase is found in saliva and assists with the break down of starch into glucose. Explain how this occurs without affecting the chemical makeup of the amylase.

- A. Amylase bonds to the starch to speed up the reaction and detaches itself when complete, without being affected.
- B. Amylase does not take place in the starch reaction, but raises the temperature of the saliva to speed up the reaction.
- C. Amylase changes starch into a vapor which increases the reaction rate, but is recreated by the glucose.
- D. Amylase transfers all of its energy to the starch molecules to speed the reaction, but does not take place in the reaction.

11. Which of the following macromolecules are a prominent part of animal tissues that function in insulation, helping animals conserve heat?

- A. Carbohydrates
- B. Lipids
- C. Proteins
- D. Nucleic acids