

EXAM 3 Fall 2009
Review Exam
BCHS3304, SECTION # 21734,
GENERAL BIOCHEMISTRY I

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- I. (2 points each) True (A) or False (B)? Bubble in the circle marked "A" if the following statement is True or bubble in the circle marked "B" if the following statement is False.

- | | | |
|---|---|--|
| T | F | 1. Formation of glycosidic bonds results in the elimination of a water molecule. |
| T | F | 2. Cyclization of D-fructose to form a hemiketal results in the elimination of a water molecule. |
| T | F | 3. An allosteric effect occurs when the binding of one ligand or substrate influences the binding of a second or additional ligand or substrate. |
| T | F | 4. D-glucose and D-mannose are epimers. |
| T | F | 5. An enzyme of gluconeogenesis which yields ATP is phosphofructokinase. |
| T | F | 6. NADH is a high energy compound produced by the Pentose Phosphate Pathway. |
| T | F | 7. Phosphorylation always down-regulates (inactivates) enzymes. |
| T | F | 8. Glucose-6-phosphate can be used to synthesize ATP through substrate-level phosphorylation. |
| T | F | 9. Under aerobic conditions in muscle NADH reduces pyruvate to lactate. |
| T | F | 10. Hydrolysis of ATP to ADP and P_i is an exergonic process |
| T | F | 11. Glycolysis occurs in the cytosol. |
| T | F | 12. Sucrose is a disaccharide formed from an (α 1,2 β) glycosidic linkage between D-glucose and D-fructose. |
| T | F | 13. In metabolism the three main pathways for energy production are gluconeogenesis, Citric Acid Cycle, and oxidative phosphorylation. |
| T | F | 14. Peptidoglycans are an essential component of bacterial cell walls |
| T | F | 15. Oxidation describes the loss of electrons from an atom, compound or molecule. |

II. Matching

The enzymatic mechanism of aldolase is shown below. For questions 16-24, match the correct substrate/product/intermediate/group or point along the enzyme-catalyzed reaction pathway by selecting "A-J". Note: "A-J" may be used more than once.

- A. water
- B. FBP
- C. Free Enzyme
- D. DHAP
- E. protonated Schiff base
- F. conjugate base
- G. Lys
- H. GAP
- I. Enediolate
- J. Enamine

