Name _____

Chem 352 - Spring 2009 - Quiz 5

1. There are seven reactions in glycolysis which are also used in gluconeogenesis.

   a. What is the function of glycolysis?

   b. What is the function gluconeogensis?

   c. Name four of the seven reactions in glycolysis that are used in gluconeogensis:

      i) _____

      ii) _____

      iii) _____

      iv) _____

   d. Using structural formulas for the intermediates, write a balanced chemical equation for one of these reactions:

   e. What is the enzyme classification for this reaction? _____

2. The glycolytic pathway contains two reactions that lead to substrate-level phosphorylation of ADP. *Using structures*, write a *balanced chemical reaction* for one of these reactions, *label* the glycolytic intermediates and *name* the enzyme that catalyzes this reaction.

3. Pyruvate is the end product of glycolysis.

   a. Using words, describe three possible fates for the pyruvate. Indicate the purpose for each.

      i)

      ii)

      iii)

   b. Using structural formulas draw a balanced chemical equation that illustrates one of these fates.

4. Glycolysis and gluconeogenesis must be coordinately regulated in order to prevent substrate cycling.

   a. Describe an example of how this is done at the cellular level using allosteric regulation.