Types of Reactions and Equilibrium

Introduction
1. Describe the relationship between chemical bonds and chemical reactions. How is energy involved?

2. Define reactants and products of a chemical reaction. Use water production as an example.

Activation Energy
3. Define energy of reactants, activation energy, and energy of products.

Factors Influencing Bond Formation
4. Explain how these two factors affect bond formation.
   temperature -
   concentration -

Activation Energy and Reactions
5. Why is increasing temperature or concentration not compatible solutions for increasing chemical reactions within living things?
Enzymes

6. What type of molecule are enzymes? What is their function? 

7. Define substrate. 

8. What is the enzyme active site? 


Types of Reactions - Synthesis

10. a. What occurs during a synthesis reaction? 

b. Use dipeptide synthesis as an example. 

c. Why is this called a dehydration synthesis? 

Types of Reactions - Decomposition

11. a. What occurs during a decomposition reaction? 

b. Use dipeptide decomposition as an example. 

c. Why is this called hydrolysis? 

Types of Reactions - Exchange

12. a. What occurs during an exchange reaction? 

b. What importance do exchange reactions have in the body?
Hydrolysis of ATP

13. Use the ATP $\rightarrow$ ADP reaction as an example. (The key is what happens to the water molecule.)

Reversible Reactions and Equilibrium

14. a. What occurs during a reversible reaction? __________________________________________________________________________

b. What is equilibrium? __________________________________________________________________________________________

c. Use carbon dioxide and carbonic acid in solution as an example of equilibrium.

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