**MCB 1000 Applied Microbiology**
**Chapter 8 Study Questions**

1. Define

| | |
|---|---|
| metabolism | anabolism |
| catabolism | metabolites |
| enzyme | catalyst |
| substrate | holoenzyme |
| apoenzyme | coenzyme |
| cofactor | exoenzyme |
| endoenzyme | constitutive enzyme |
| induced enzyme | synthesis reaction |
| hydrolysis reaction | oxidation |
| reduction | labile |
| denaturation | exergonic |
| endergonic | redox |
| phosphorylate | dehydrogenation |
| aerobic respiration | fermentation |
| anaerobic respiration | chemiosmosis |
| amphibolic | |

2. Briefly describe how enzymes work.

3. Describe what is meant by a metabolic pathway and give examples of metabolic pathways.

4. Describe how enzymes are controlled through competitive inhibition, feedback inhibition, enzyme repression, and enzyme induction.

5. Describe how electron carriers contribute to energy production.

6. Explain how ATP is formed and utilized by cells as an energy source.

7. List the three pathways that are primarily involved in catabolism. For each pathway list the initial reactants and final products and describe the overall reaction.

8. Describe the phosphogluconate pathway.

9. Describe the process of anaerobic respiration.

10. Explain the importance of fermentation.

11. Describe the processes involved in biosynthesis of the major macromolecules.