

Cell Structure and Function Question Set #3

1. What does glycolysis mean?
2. In eukaryotic cells, where does glycolysis occur?
3. Which stores more potential energy: one molecule of glucose or two molecules of pyruvic acid? Explain.
4. List the final products of glycolysis.
5. What two products of glycolysis may be transported into mitochondria for further processing?
6. How do ADP and ATP differ in structure and energy content?
7. Describe the function of NAD^+ and FAD in cellular respiration.
8. What are the final products of aerobic cellular respiration?
9. Why is aerobic respiration a more efficient energy-extracting process than glycolysis alone?
10. List two differences between aerobic respiration and fermentation.
11. A student regularly runs 3 km each afternoon at a slow, leisurely pace. One day, she runs 1 km as fast as she can. Afterward, she is winded and feels pain in her chest and leg muscles. What is responsible for her symptoms?
12. Name a nonalcoholic final product of alcoholic fermentation, other than ATP.
13. In addition to ATP, name the other final products of both types of fermentation.
14. How many molecules of ethanol are produced by the fermentation of one molecule of glucose?
15. How many molecules of carbon dioxide are produced during the fermentation of one molecule of glucose?
16. How much oxygen is used during the fermentation of one glucose molecule?
17. Name an organism in which alcoholic fermentation takes place.