

**Answer Key**

**IB BIOLOGY HL**

**Mrs. Jensen**

**Respiration and Fermentation Review**

**Part 1: Match the next set of terms with the description below.**

- a. cellular respiration The complete breakdown of glucose to carbon dioxide and water with the result of 36 ATP molecules.
- b. anaerobic respiration Anaerobic breakdown of glucose that results in a gain of 2 ATP molecules and end products such as alcohol and lactate.
- c. glycolysis First set of reactions present in both aerobic and anaerobic metabolic pathways.
- d. kreb's cycle Cycle of reactions in mitochondria that begins with citric acid, produces carbon dioxide, ATP, NADH, FADH<sub>2</sub>.
- e. mitochondria Organelle where Cellular Respiration takes place.
- f. aerobic process Metabolic pathway that uses oxygen.
- g. anaerobic process Metabolic pathway that does not use oxygen.
- h. acetyl CoA Molecule made up of a 2-carbon molecule bonded with CoEnzymeA.
- i. electron transport chain Passage of electrons along a series of protein carriers from a higher to a lower energy level.
- j. NAD Carrier that must be recycled during the process of fermentation.
- k. FAD Carrier only found in the Citric Acid Cycle but not found in the process of fermentation.
- l. Pyruvic acid Final product of glycolysis, first reactant of the Krebs cycle.
- m. CoEnzyme A Major enzyme involved in the Krebs Cycle.

**Part 2: Answer the following set of questions**

- 1. A reduction reaction is associated with a  
Gain of    electrons                     ,    hydrogen                     , and  
           energy                       
Loss of                      oxygen
  
- 2. An oxidation reaction is associated with a  
Loss of    electrons                     ,    hydrogen                     , and  
           energy