

Biology I Advanced
Obj Chapter 6
Cellular Respiration

1. Draw a diagram of a mitochondria. Label all structures and compartments.
2. Write an over-all chemical equation for cellular respiration. Use arrows to show the fate of each reactant. Indicate light energy on the equation.
3. Describe the overall purpose of cellular respiration.
4. Describe each of the following molecules and explain its role in respiration:

ATP	NADH	Oxygen gas	ATP synthase	FADH ₂
glucose	PYR	G3P (PGAL)	ETC proteins	
5. List the events of the glycolysis. Describe the overall purpose of these events in terms of cellular respiration.
6. List the events of the transition reactions. Describe the overall purpose of these events in terms of cellular respiration.
7. List the events of the Krebs (citric acid) cycle. Describe the overall purpose of these events in terms of cellular respiration.
8. List the events of the oxidative phosphorylation. Describe the overall purpose of these events in terms of cellular respiration.
9. In terms of cellular respiration, write a paragraph that describes chemiosmosis including the terms *active transport*, *concentration gradient*, *protonmotive force*, *ATP synthase*, and other pertinent terms. Indicate how compartmentalization plays a role in this process.
10. Describe how molecules other than glucose can enter the respiratory pathway.
11. Explain the relationship between photosynthesis and respiration in terms of the individual and the ecosystem.
12. Define these terms:

Oxidation reaction	Reduction reaction	oxidative phosphorylation
aerobic respiration	anaerobic respiration	fermentation
Obligate anaerobe	facultative anaerobe	
13. Describe conditions that interrupt respiration including poisons and lack of oxygen.
14. Describe the overall purpose of anaerobic respiration. Differentiate between lactic acid fermentation and alcohol fermentation in terms of where it occurs, products, purpose, role in ecosystem.