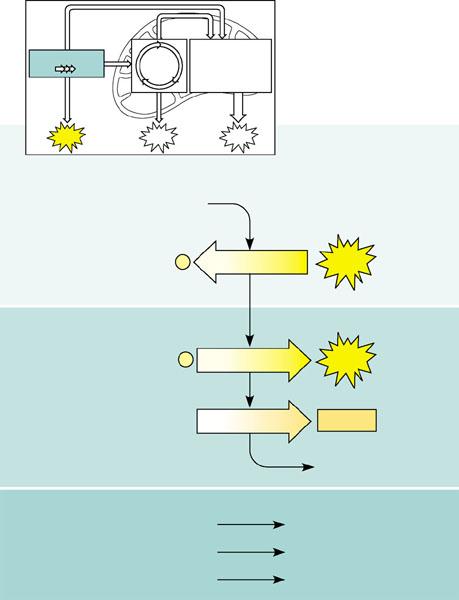
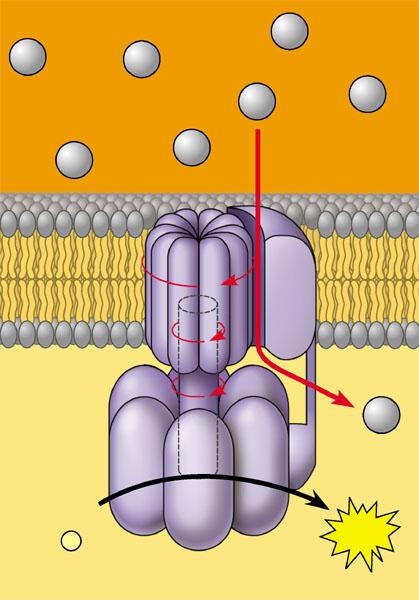
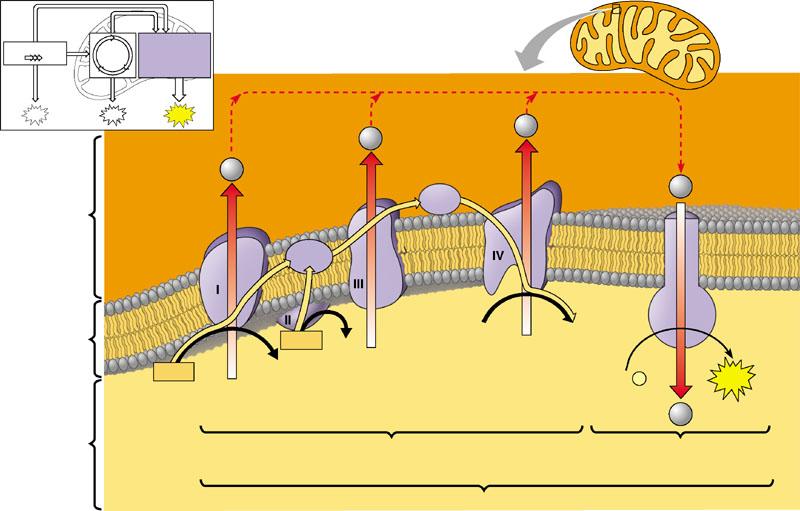
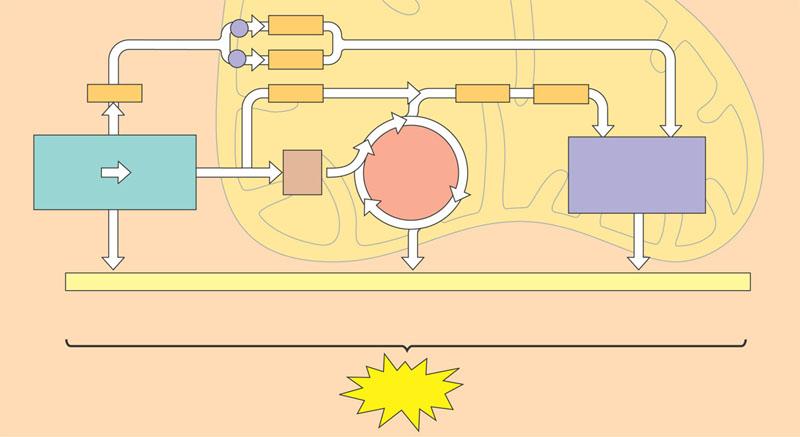
**AP Biology- Cellular Respiration Study Guide**

**Unit 3: Ch 7**

1. Compare the two catabolic pathways:
   1. Fermentation
   2. Cellular respiration
2. Use the following terms correctly in a sentence: redox reactions, oxidation, reduction, reducing agent and oxidizing agent.
3. Why is being “reduced” equivalent to having a greater potential energy?
4. In cellular respiration, what is being oxidized and what is being reduced?
5. Explain the use of coenzymes NAD+ and FAD+
6. Why is having electron transport chains an advantage to living systems?

1. What are the three stages of aerobic cellular respiration?
2. What is substrate-level phosphorylation?

1. Complete the chart below re: glycolysis  
     
     
   
2. Describe the transition reaction converting pyruvate to acetyl coA.
3. Regarding the Kreb’ cycle, where does the C “go” that is removed?
4. What is happening when NAD+ 🡪 NADH + H+?
5. What is oxidative phosphorylation and where does it occur during respiration?

1. What is chemiosmosis and apply it to the diagram below.  
   
2. Label the diagram below of the activities occurring on the ECT.  
     
   
3. Complete the summary diagram of cellular respiration.   
   
4. Does aerobic cellular respiration happen in prokaryotic organisms – if yes – where?
5. What is the overall purpose of fermentation? Why does it have to occur?
6. What is a facultative anaerobe?
7. What is the evolutionary significance of glycolysis?

1. Why do fats provide a little more than twice as many calories per gram as compared to carbohydrates or proteins? Hint: Think of the output of the Citric Acid Cycle.