Biology Chapter 9: Study Guide

Section 1

- Definitions

Calorie	Cellular respiration	Fermentation
Glycolysis	NAD^+	anaerobic

- Know what food provides to living organisms
- Know which pathways follows glycolysis if oxygen is present and if oxygen is not present
- Know where glycolysis takes place
- Know the reactants and the products of glycolysis including the number of ATP and NADH produced (and required)
- Know the advantages and disadvantages of glycolysis
- Know the three steps of cellular respiration
- Know the advantages and disadvantages of cellular respiration
- Know the products and reactants of cellular respiration including the number of ATP, NADH and $FADH_2$ produced
- Know how fermentation differs from cellular respiration
- Know the purpose of fermentation
- Know the two types of fermentation and how they got their names
- Know the reactants and products of alcoholic fermentation and lactic acid fermentation
- Know why a human muscle cell would go through lactic acid fermentation
- Know the advantages and disadvantages of fermentation
- Know which processes are anaerobic and which are aerobic

Section 2

- Definitions

Aerobic	Krebs Cycle	ETC

- Know who discovered the Krebs Cycle
- Know the other name for the Krebs Cycle
- Know ALL of the steps of the Krebs Cycle in great detail
- Be able to determine how many carbons are in pyruvic acid, carbon dioxide, an acetyl group and citric acid
- Know the products and reactants of the Krebs Cycle
- Know how many NADHs and $FADH_2$ are produced and where
- Know how many ATPs are produced and where
- Know the purpose of the electron transport chain (ETC)
- Know ALL of the steps of the ETC in great detail
- Know how many more ATP are produced in the Krebs Cycle and the ETC combined
- Know how many ATP are produced in all of cellular respiration
- Know the products and reactants of the ETC
- Know what happens to the rest of the energy contained in a glucose molecule

- Know which pathway a human muscle cell will take when exercising for a short period of time
- Know which pathway a human muscle cell will take when exercising for an extended period to time
- Be able to compare photosynthesis and cellular respiration

Packet

- Be able to label the interior of the mitochondrion
- Know where each step of cellular respiration occurs
- Be able to compare glycolysis, fermentation and cellular respiration
- Be able to answer all of the questions on the worksheets *except* for page 111