

Review Sheet

Biology 1

Cellular Respiration and Photosynthesis

Key Terms:

Cellular respiration	Photosynthesis
Glycolysis	autotroph
Alcoholic fermentation	heterotroph
Lactic acid fermentation	light dependent reactions
Krebs Cycle	chloroplast
Electron transport chain	stroma
ATP synthase	thylakoid
Metabolism	Calvin cycle

Objectives

- 1) Write the overall equations for both cellular respiration and photosynthesis and explain how they are related to each other.
- 2) Explain the difference between anaerobic and aerobic respiration
- 3) Describe the conditions under which both types of fermentation (lactic acid and alcoholic) occur and describe the benefits and drawbacks of fermentation vs. aerobic energy pathways.
- 4) Explain how energy is stored in the form of ATP and how that energy can be released.
- 5) Describe what is produced in the three main processes involved in aerobic cellular respiration (glycolysis, Krebs cycle, and the electron transport chain) as well as where they occur within the mitochondria (for Krebs and electron transport)
- 6) What is the role of NADH and FADH₂ in cellular respiration
- 7) Explain the role of hydrogen ions (H⁺) in the production of ATP
- 8) Explain the relationship between the color of chlorophyll and visible light.
- 9) List the reactants and products of both the light dependent reactions and the Calvin cycle as well as where they occur within the chloroplast
- 10) Describe what happens in the Calvin cycle and explain why the Calvin cycle depends on the light-dependent reactions
- 11) List the factors that affect the rate of photosynthesis.