

General Biology A

Test Study Guide: Unit 2 – Photosynthesis

Objective 1: Explain the function and purpose of ATP.

Students will be able to:

- 1) Draw and label all the parts of an ATP molecule.
- 2) Describe the purpose of ATP.
- 3) Describe the differences between an ATP and ADP molecule (both structurally and energy levels).

How to study:

- a) Read pages: 98 – 100
- b) Define the following terms:
 - Adenine:
 - Ribose:
 - Phosphate group:
 - Adenosine:
 - ATP (Adenosine Triphosphate):
 - ADP (Adenosine Diphosphate):
- c) Know this diagram: Visual Vocabulary diagram on Page 98 and Figure 1.2 on page 99.
- d) Review PowerPoint Lecture Notes on ATP molecule (Slides #1 - 11).
- e) Complete Schoology Unit 2: Assignment 1 – ATP Molecule.

Objective 2: Describe the process of photosynthesis.

Students will be able to:

- 1) Describe the function and purpose of photosynthesis.
- 2) Explain where photosynthesis occurs in the cell (light and dark reactions).
- 3) Diagram the parts of the light dependent and independent reactions of photosynthesis.

How to study:

- a) Read pages: 101 – 103 and 106 – 110
 - Light Dependent Reaction: 102 – 103 and 106 – 108
 - Light Independent Reaction: 103 and 109 - 110
- b) Define the following terms:
 - Photosynthesis:
 - Chlorophyll:
 - Chloroplast:
 - Light Independent reactions (Dark):
 - Light Dependent reactions (Light):
 - Calvin Cycle:
 - NADPH: (Nicotinamide adenine dinucleotide phosphate)

- Electron Transport Chain (ETC):
- Pigment:
- Thylakoids:
- Photolysis:
- Stroma:
- ATP Synthase:
- G3P:

- c) Know this diagram: Figure 2.2 on Page 102 and Figure 3.4 on Page 109
- d) Review PowerPoint Lecture Notes on Photosynthesis (Slides #12 - 39).
- e) Complete Schoology Unit 2: Assignment 2 – Process of Photosynthesis (Light and Dark Reactions)

Objective 3: Explain what molecules are used and what is produced in the process of photosynthesis.

Students will be able to:

- 1) Identify the parts of the equation of photosynthesis
- 2) Write out the equation for photosynthesis
- 3) Identify what parts of the equation are used (reactants) and produced (products) in the light dependent and independent reactions.

How to study:

- a) Read Pages: 103
- b) Define the following vocabulary terms:
 - Photosynthesis Equation:
- c) Know these diagrams: Figure 2.2 on Page 102.
- d) Review PowerPoint Lecture Notes on Photosynthesis (Slide #13 and 43-44).
- e) Complete Schoology Unit 2: Assignment 3 – What is used and produced in Photosynthesis.

Objective 4: Explain how the molecules which are produced in photosynthesis are used to produce larger molecules such as proteins or DNA.

Students will be able to:

- 1) Describe what the products of photosynthesis are.
- 2) Explain how the products of photosynthesis are used by the body.
- 3) Describe the role of G3P in the production of macromolecules.

How to study:

- a) Read Pages: 101-110 and review Pages 46 – 50.
- b) Define the following vocabulary terms:
 - Photosynthesis Equation:
 - Oxygen:

- Glucose:
- ATP:
- GP3:
- Carbohydrates
- Proteins
- Lipids
- Nucleic Acids
- Amino Acids
- Nucleotides
- Glycerol
- Fatty Acids
- Monosaccharides
- Disaccharides
- Polysaccharides

- d) Review PowerPoint Lecture Notes on Photosynthesis (Slide #39 - 41).
- e) Complete Schoology Unit 2: Assignment 3 – What is used and produced in Photosynthesis.