

# *First year Biology complete notes*

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**By: DARAKSHAN SHEIKH**

**KAMRAN SHAUKAT**

1. Which of the following occurs in the stroma of the chloroplast?  
A. Light dependent reaction  
B. electron transport chain  
C. **calvin cycle**  
D. photolysis
2. The oxygen produced in photosynthesis comes from what molecule?  
A. glucose  
B. **water**  
C. P680  
D. ATP
3. The photosynthetic process used by some plants to survive in a hot dry climate, like the desert?  
A. C4 Photosynthesis  
B. C3 Photosynthesis  
C. Noncyclic photophosphorylation  
D. **Photorespiration**
4. Which of the following is NOT a produce of the light dependent reaction?  
A. Oxygen  
B. ATP  
C. NADPH  
D. **Sugar**
5. Which of the following is the source of the carbon in sugar produced during photosynthesis?  
A. **Carbon dioxide**

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- B. water
- C. rubisco
- D. ATP

6. Which of the following is the main difference between cyclic and noncyclic .  
photophosphorylation?

- A. They use different electron acceptors
- B. only photosystem I is used during the cyclic process
- C. noncyclic photophosphorylation occurs in the stroma
- D. noncyclic photophosphorylation does not produce ATP

7. Carbon fixation is catalyzed by what enzyme?

- A. P700
- B. NADPH
- C. phosphoglycerate
- D. rubisco

8. The calvin cycle requires each of the following inputs EXCEPT:

- A. ATP
- B. NADPH
- C. O<sub>2</sub>
- D. CO<sub>2</sub>

9. In the light dependent reactions, when light strikes the pigments (P700 or P680) what  
is the immediate result?

- A. **Excited electrons are passed to electron acceptors**
- B. electrons are fused to form ATP

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- C. glucose is produced
- D. carbon fixation occurs

12. Which of the following occurs in the stroma of the chloroplast?

- A. light dependent reaction
- B. electron transport chain
- C. calvin cycle
- D. photolysis

13. The oxygen produced in photosynthesis comes from what molecule?

- A. glucose
- B. water
- C. P680
- D. ATP

14. The photosynthetic process used by some plants to survive in a hot dry climate, like the desert?

- A. C4 Photosynthesis
- B. **C3 Photosynthesis**
- C. Noncyclic photophosphorylation
- D. Carbon fixation

15. Which of the following is NOT a produce of the light dependent reaction?

- A. Oxygen
- B. ATP
- C. NADPH
- D. Sugar

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16. Which of the following is the source of the carbon in sugar produced during photosynthesis?

- A. carbon dioxide
- B. water
- C. rubisco
- D. ATP

18. Carbon fixation is catalyzed by what enzyme?

- A. P700
- B. NADPH
- C. phosphoglycerate
- D. rubisco

19. The calvin cycle requires each of the following inputs EXCEPT:

- A. ATP
- B. NADPH
- C. O<sub>2</sub>
- D. CO<sub>2</sub>

20. In the light dependent reactions, when light strikes the pigments (P700 or P680) what is the immediate result?

- A. excited electrons are passed to electron acceptors
- B. electrons are fused to form ATP
- C. glucose is produced
- D. carbon fixation occurs

21. In the calvin cycle, more ATP than NADPH is used, how is this difference made up? the cyclic pathway creates more ATP

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the calvin cycle occurs half as often as the light dependent reaction  
additional ATP is created from glucose  
excess NADPH is reused in the light reaction

Which of the following occurs in both photosynthesis and respiration?

chemiosmosis  
glycolysis  
calvin cycle  
krebs cycle

2. Which of the following statements is FALSE?

glycolysis can occur with or without oxygen  
glycolysis occurs in the mitochondria  
glycolysis is the first step in both aerobic and anaerobic respiration  
glycolysis produces 2 ATP, 2 NADH, and 2 pyruvate

3. This process uses NADH and FADH<sub>2</sub> to produce ATP

oxidative phosphorylation  
fermentation  
glycolysis  
**krebs cycle**

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4. This process begins with the production of Acetyl-CoA:

chemiosmosis

glycolysis

fermentation

**krebs cycle**

5.. Cramps during exercise are caused by:

alcohol fermentation

glycolysis inhibition

**lactic acid fermentation**

chemiosmosis

8. Which of the following processes produces the most ATP?

glycolysis

oxidative phosphorylation

fermentation

**Krebs cycle**

9. Which of the following is necessary for oxidative phosphorylation to occur?

ATP

oxygen

carbon dioxide

lactic acid

10. Which of the following are the products of the Krebs cycle?

ATP

NADH

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FADH  
all of these

## PHOTOSYNTHESIS QUIZ-2

1. What are the products of photosynthesis?

- a) water and carbon dioxide
- b) oxygen and carbohydrate
- c) water and oxygen
- d) carbohydrate and water

2. What organisms are capable of photosynthesis?

- a) plants only
- b) plants and some bacteria only
- c) plants and algae only
- d) plants, algae, and some bacteria

3. Sunlight arrives at a plant in units of light energy called

- a) protons
- b) photons
- c) electrons
- d) wavelengths

4. The Greek root that means "light" is

- a) synthesis
- b) logos
- c) kytos
- d) phos
- e) elektr A

6. Which of these is **Not** a major photosynthetic pigment in plants?

- a) chlorophyll "a"
- b) chlorophyll "b"
- c) chlorophyll "c"
- d) carotenoid pigments

7. Why are plants green?

- a) They absorb only green wavelengths of light.
- b) They absorb only yellow and blue wavelengths of light.
- c) They reflect nearly all wavelengths of light.
- d) They reflect green wavelengths of light.
- e) They reflect yellow and blue wavelengths of light.

8. The term "chloroplast" is derived in part from the Greek root that means

- a) plant
- b) light
- c) green
- d) photosynthetic
- e) oxygen

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9. To what does the term stroma refer?

- a) the double membrane of the chloroplasts
- b) a flattened disk or sac in the chloroplast
- c) a central fluid filled space in the chloroplast
- d) the cytochrome system in the membranes of the thylakoids
- e) a stack of thylakoid membrane structures

10. To what does the term grana refer?

- a) the cytochrome system in the membranes of the thylakoids
- b) a central fluid filled space in the chloroplast
- c) a flattened disk or sac in the chloroplast
- d) the double membrane of the chloroplasts
- e) a stack of thylakoid membrane structures

11. Which of these is most closely associated with the process of electron transport?

- a) a stack of thylakoid membrane structures
- b) a flattened disk or sac in the chloroplast
- c) the double membrane of the chloroplasts
- d) **the cytochrome system in the membranes of the thylakoids**
- e) a central fluid filled space in the chloroplast

12. Which statement is **Not** true about photosystems?

- a) **Photosystem I passes electron on to photosystem II.**
- b) Each photosystem contains numerous pigment molecules that act as antennas to capture light.
- c) Photosystem I contains a reaction center molecule that absorbs light best around 700 nm, so it is called P700.
- d) Electrons in the reaction center molecule are excited by absorbing photons of light and are passed along to an acceptor molecule.

16. Which is **Not** true about photosynthesis?

- a) In the noncyclic photophosphorylation, water is split and oxygen is released.
- b) Photosystem II makes noncyclic photophosphorylation more efficient than does cyclic photophosphorylation.

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- c) The cyclic system is used when there is insufficient NADP<sup>+</sup> present to absorb electrons in plants cells.
- d) More carbohydrate is produced during cyclic photophosphorylation than during noncyclic photophosphorylation.
17. Which is most closely associated with the Calvin cycle?
- ATP production
  - oxygen production
  - carbon dioxide fixation
  - carbon dioxide production
  - removal of electrons from water for passage through an electron transport system
18. The end product of the Calvin cycle is
- ATP
  - ribulose biphosphate (RuBP)
  - phosphoglyceraldehyde (PGAL)
  - PEP carboxylase (PEPcase)
  - carbon dioxide
19. When the stomates in a leaf close, then
- carbon dioxide in the air spaces in the leaf decreases.
  - oxygen in the air spaces in the leaf increases.
  - C3 plants carry on photorespiration. using oxygen and producing PGA and carbon dioxide.
  - all photosystems as well as photorespiration come to a halt.
  - A, B, and C are correct.
20. The major enzyme that catalyzes the reduction of carbon dioxide is called
- ribulose biphosphate (RuBP)
  - phosphoglyceraldehyde (PGAL)
  - PEP carboxylase (PEPcase)
22. Most food plants, such as wheat, oats, and rice, are in the group of
- CAM plants
  - C3 plants
  - C4 plants**
  - I don't know?

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27. A photosystem contains

- a) pigments, a reaction center, and an electron acceptor
- b) ADP, phosphate, and hydrogen ions (H<sup>+</sup>).
- c) protons, photons, and pigments.
- d) cytochromes only.
- e) Both B and C are correct.

28. Which of these should be associated with the electron transport system?

- a) chloroplasts
- b) cytochromes
- c) movement of H<sup>+</sup> into the thylakoid space
- d) formation of ATP
- e) absorption of solar energy

29. The NADPH and ATP from the light-dependent reactions are used to

- a) split water
- b) cause RuBP carboxylase to fix carbon dioxide
- c) re-form the photosystems
- d) cause electrons to move along their pathways
- e) convert PGA to PGAL

35. This process has as its products NADP<sup>+</sup> and ADP, and sugar.

- a) glycolysis
- b) chemiosmosis
- c) fermentation
- d) Calvin cycle
- e) photolysis

37. Which of the following photosynthetic reactions is known to occur in the thylakoid membrane?

- a) carbon fixation
- b) light reactions
- c) dark reactions
- d) Calvin cycle
- e) transpiration

40. The process in which O<sub>2</sub> (oxygen) is released as a by product of oxidation-reduction reactions.

- a) glycolysis
- b) Krebs cycle (citric acid cycle)
- c) Calvin cycle (light-independent reactions of photosynthesis)
- d) light dependent reactions of photosynthesis

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41. Process in which carbon from CO<sub>2</sub> is incorporated into organic molecules.

- a) glycolysis
- b) Krebs cycle (citric acid cycle)
- c) Calvin cycle (light-independent reactions of photosynthesis)
- d) light dependent reactions of photosynthesis

42. Process found in both photosynthesis and cellular respiration.

- a) glycolysis
- b) Krebs cycle (citric acid cycle)
- c) Calvin cycle (light-independent reactions of photosynthesis)
- d) light dependent reactions of photosynthesis

43. The products of the light reactions in photosynthesis are

- a) oxygen and NADP<sup>+</sup>
- b) water and NADPH
- c) oxygen and NADPH
- d) water and oxygen
- e) oxygen and NAD<sup>+</sup>

44. Which of the following statements is **True** about RuBP (ribulose bisphosphate)

- a) It is a 3 carbon product of the Calvin cycle.
- b) It is the final oxidizing agent in the light reaction.
- c) It is the CO<sub>2</sub> acceptor in the Calvin cycle.
- d) It is the rarest substrate in the Calvin cycle and therefore a limiting reagent.
- e) None of the above.

47. The basic photosynthetic unit in a chloroplasts is the

- a) stroma
- b) stoma
- c) thylakoid
- d) granum
- e) chlorophyll

48. All of the following are end products of the light-dependent reactions of photosynthesis **Except**.

- a) NADPH
- b) ATP
- c) O<sub>2</sub> (oxygen)
- d) H<sup>+</sup> (protons)
- e) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> (glucose)

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51. The products of the light reactions, in photosynthesis are

- a) oxygen and water.
- b) oxygen and ATP.
- c) oxygen, ATP, and NADPH.
- d) water, ATP, and NADPH.
- e) water, ATP, and  $\text{NADP}^+ + \text{H}^+$ .

53. Which of the following is a specialized feature of plants that live in hot dry regions?

- a) Stomata that open and close
- b) Transpiration
- c) Photophosphorylation
- d) **C4 photosynthesis**
- e) Carbon fixation

54. The light -dependent reactions of photosynthesis occur in the

- a) nucleus
- b) cytoplasm
- c) mitochondria
- d) thylakoid membrane
- e) stroma