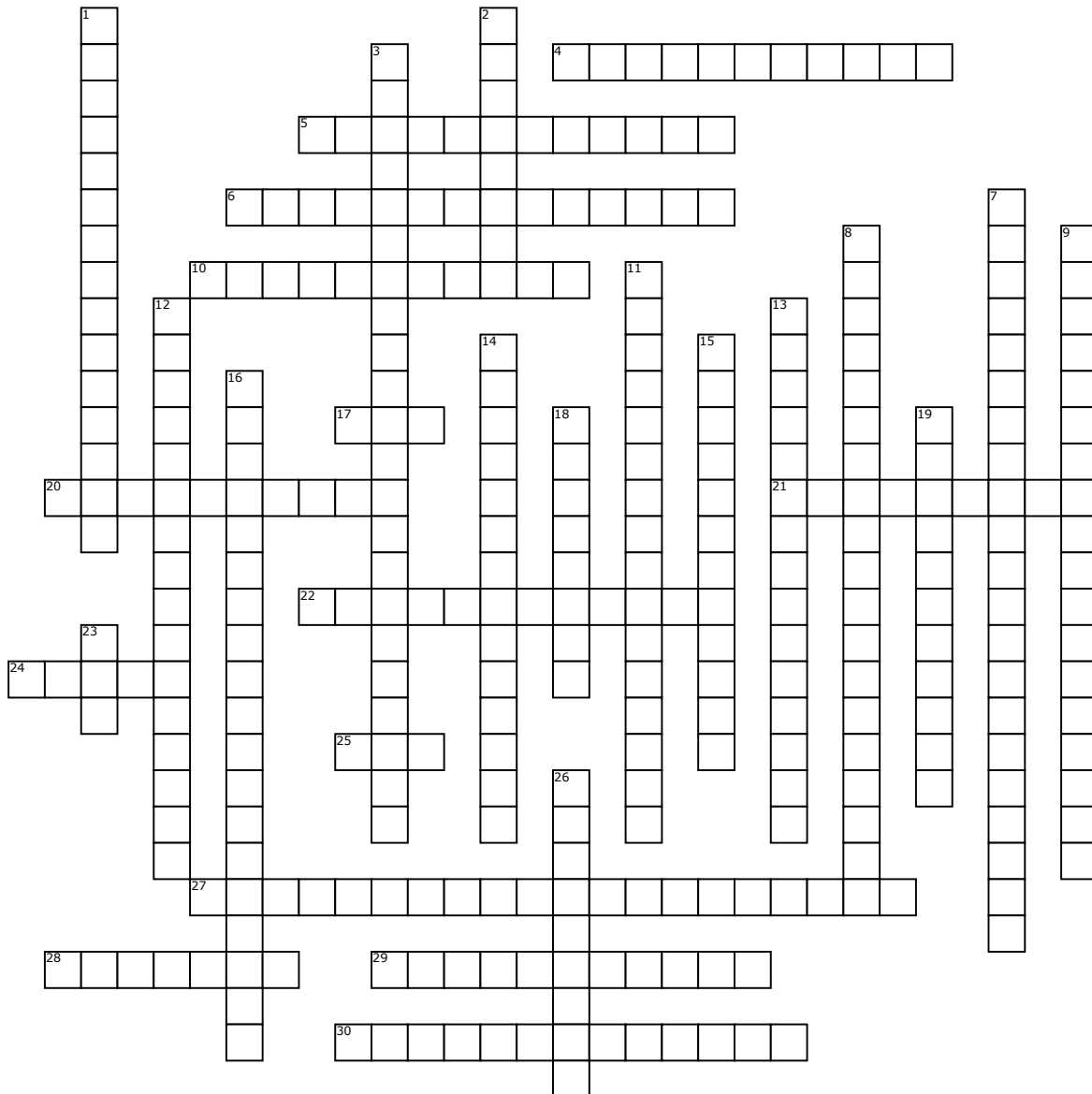


Photosynthesis and Cellular Respiration



Across

4. The photosynthetic unit where energy is absorbed and high energy electrons are generated; occurs as PSII & PSI.

5. The process by which the mitochondria and chloroplasts use energy of an electron transport chain to create a hydrogen ion gradient that drives ATP formation.

6. The _____ are the portion of photosynthesis that captures solar energy and takes place in the thylakoid membranes and produces ATP and NADPH.

10. The membrane bounded organelle, _____ in algae and land plants with chlorophyll containing membranous thylakoids are where photosynthesis takes place.

17. _____ is the coenzyme of oxidation reduction that results in a NADH, and carries electrons to the electron transport chain during cellular respiration.

20. The anaerobic breakdown of a glucose molecule into two pyruvates is also known as _____.

21. An _____ is an organism that can capture solar energy and synthesize organic molecules from inorganic nutrients.

22. _____ is the anaerobic breakdown of glucose that a net gain of 2 ATP molecules and end products such as lactate and alcohol.

24. In the chloroplast of a plant cell, _____ are stacks of the chlorophyll- containing thylakoids.

25. _____ photosynthesis is a carbon fixation pathway that has evolved in some plants as an adaptation to hot/dry conditions.

27. The _____ is a portion of photosynthesis that takes place in the stroma of the chloroplasts, and use the products of light reactions to reduce CO₂ to a carbohydrate.

28. Phase of cellular respiration that requires oxygen is _____.

29. The green pigment that absorbs solar energy is known as _____.

30. _____ is term that describes the amount of oxygen that is required to oxidize lactic acid.

Down

1. The _____ is a cycle of reactions in the mitochondria that breaks down acetyl groups and produce Carbon Dioxide, ATP, and FADH.

2. The small opening between two guard cells on the underside of a leaf epidermis through which gas passes is called the (plural) _____.

3. The _____ is a passage of electrons through along a series of membrane-bound electron carrier molecules from a higher to lower energy level; releases energy for ATP synthesis.

7. _____ is a photosynthetic reaction in which CO₂ is attached to an organic compound.

8. The _____ is the reaction that oxidizes pyruvate with the release of carbon dioxide; connects glycolysis to the citric acid cycle.

9. _____ is a complex of proteins in the cristae of the mitochondria and the thylakoid of chloroplasts that produces ATP as hydrogen flows down a concentration gradient.

11. _____ is a series of reactions that occur in plants when CO₂ levels depleted, but oxygen continues to accumulate and the enzyme RuBP carboxylase fixes oxygen instead of CO₂.

12. In a _____, the electrons flow through photosystem II and photosystem I, then move on the Calvin cycle.

13. _____ is an enzyme that starts the calvin cycle reactions by catalyzing attachment of the carbon atom from CO₂ to RuBP.

14. The process of _____ is the process by which chlorophyll-containing organelles capture solar energy to to reduce carbon dioxide to carbohydrate.

15. A _____ is a membrane bounded organelle that carries out cellular respiration, and in which ATP molecules are produced.

16. _____ is metabolic reactions that use energy from carbohydrates, fatty acids and amino acids to produce ATP molecules.

18. The end product of glycolysis is 2 _____ molecules.

19. A _____ is an organism that cannot synthesize organic compounds from inorganic substances.

23. The coenzyme of oxidation reduction that oxidizes to become FADH, and delivers electron to the ETC is _____.

26. Growing or metabolizing with an absence of oxygen would be considered to be _____.