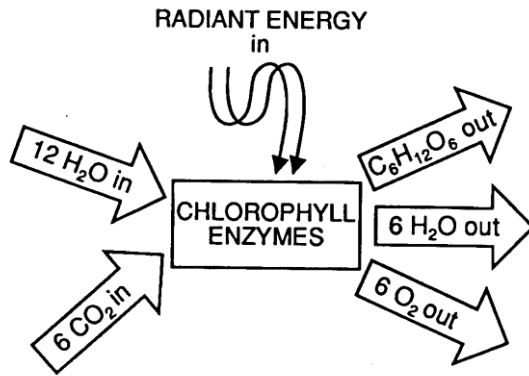


Photosynthesis and Cellular Respiration Survey

Multiple Choice - Choose the best and most complete answer.

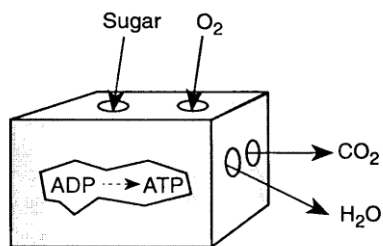
1. Which type of energy transformation occurs in photosynthesis?
 - A. heat to electrical
 - B. light to chemical
 - C. mechanical to electrical
 - D. chemical to mechanical
2. The potential energy of organic molecules is most readily available to cells in the form of
 - A. ribonucleic acid.
 - B. ATP.
 - C. water.
 - D. minerals.
3. The sum of all of the chemical reactions occurring in a cell is called
 - A. photosynthesis.
 - B. diffusion.
 - C. oxidative respiration.
 - D. metabolism.
4. Which could be used to monitor the rate of photosynthesis in a plant?
 - A. oxygen production
 - B. water production
 - C. hydrogen production
 - D. carbon dioxide production
5. Respiration takes place in the
 - A. chloroplasts.
 - B. thylakoid.
 - C. mitochondria.
 - D. cytoplasm.
6. Fermentation of glucose by yeast produces
 - A. ethyl alcohol and carbon dioxide.
 - B. lactic acid and carbon dioxide.
 - C. lactic acid and oxygen.
 - D. ethyl alcohol and oxygen.

7. Which process is best illustrated by the diagram?



- A. cellular respiration
 - B. digestion
 - C. photosynthesis
 - D. fermentation
8. Aerobic cellular respiration requires an adequate supply of
- A. carbon dioxide.
 - B. oxygen.
 - C. ethyl alcohol.
 - D. starch.
9. Which statement regarding cellular respiration is correct?
- A. Cellular respiration in plants occurs only during the day.
 - B. All living organisms carry out some form of cellular respiration.
 - C. Fungi and bacteria carry out aerobic cellular respiration only.
 - D. Only plants and animals use glucose and oxygen for cellular respiration.
10. Which of the following statements is **not** true of energy production in cells?
- A. Cells release large amounts of energy in the form of heat.
 - B. ATP is the primary form of energy for the cell.
 - C. Energy is released when ATP is converted to ADP.
 - D. In cells, energy is released in small, controlled amounts.
11. What gas is given off during cellular respiration?
- A. oxygen
 - B. methane
 - C. hydrogen
 - D. carbon dioxide
12. A green plant is kept in a brightly lighted area for 48 hours. What will most likely occur if the light intensity is then reduced slightly during the next 48 hours?
- A. The rate at which nitrogen is used by the plant will increase.
 - B. Photosynthesis will stop completely.
 - C. The rate at which oxygen is released from the plant will decrease.
 - D. Glucose production inside each plant cell will increase.

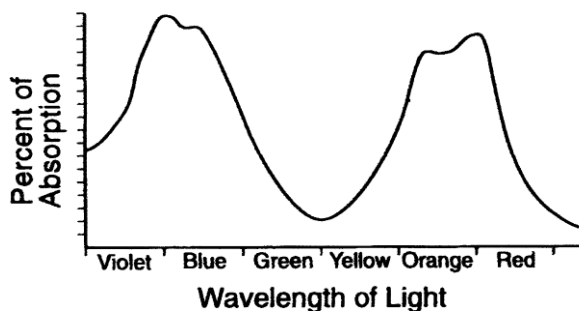
13. The diagram below represents some events that take place in plant cells.



In which organelle would the above events most likely occur?

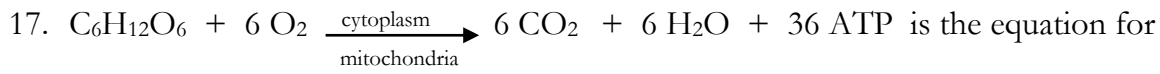
- A. lysosome
- B. mitochondrion
- C. ribosome
- D. chloroplast

14. The graph below represents the absorption spectrum of chlorophyll.



The graph indicates that the energy used in photosynthesis is most likely obtained from which regions of the spectrum?

- A. yellow and orange red
 - B. violet blue and green
 - C. orange red and violet blue
 - D. green and yellow
15. Which of the following is an example of a pigment?
- A. sucrase
 - B. pyruvate
 - C. chlorophyll
 - D. NADPH
16. Two reactants that are used in the process of photosynthesis are
- A. water and carbon dioxide.
 - B. glucose and water.
 - C. carbon dioxide and oxygen.
 - D. oxygen and water.

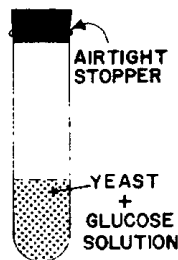


- A. photosynthesis.
- B. cellular respiration.
- C. fermentation.
- D. ATP breakdown.

18. Carbon dioxide is converted into carbohydrates during the

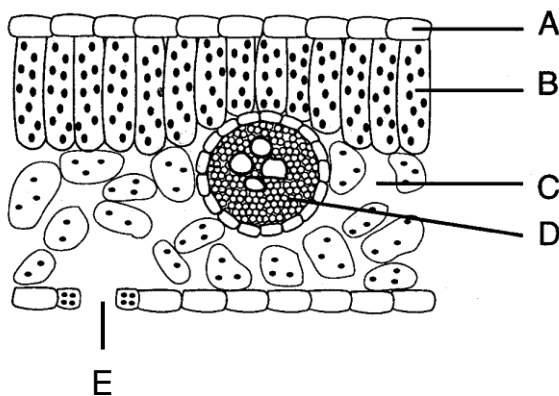
- A. Krebs cycle.
- B. electron transport chain.
- C. Calvin cycle.
- D. fermentation.

19. If the test tube below were allowed to stand at room temperature for several hours, what process would be occurring in the test tube?



- A. oxidative respiration
- B. fermentation
- C. photosynthesis
- D. evolution

Use the following diagram to answer questions 20 and 21. The diagram represents a cross section of a leaf.

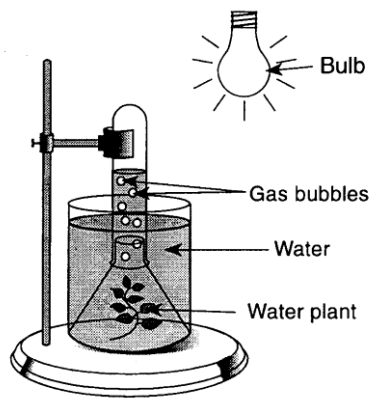


20. The largest amount of carbohydrates would be manufactured by structure

- A. A.
- B. B.
- C. C.
- D. E.

21. The largest amount of sunlight would enter the leaf through structure
- A.
 - B.
 - C.
 - E.
22. $C_6H_{12}O_6 \rightarrow \text{lactic acid} + \text{energy}$ is an equation for
- fermentation.
 - photosynthesis.
 - cellular respiration.
 - ATP breakdown.

Use the following diagram to answer questions 23.



23. The gas released in this investigation is
- carbon dioxide.
 - hydrogen.
 - nitrogen.
 - oxygen.
24. Which of the following diagrams represents the correct cycling of gases?

