**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

1. Elodea is a fresh water plant. What energy source is used by Elodea?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Heat | c. | Oxygen |
| b. | Light | d. | Carbon dioxide |

2. The scientists put a plant in a sealed glass container and placed it in the sunlight for several hours. Which of these increased inside the container?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | a. | Water | c. | Oxygen gas | | b. | Nitrogen gas | d. | Carbon dioxide gas | |

3. Energy from sunlight is trapped by chlorophyll located in the \_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | citric acid cycle | c. | electron transport chain |
| b. | mitochondria | d. | thylakoid membranes of chloroplasts |

4. Which of the following equations best represents photosynthesis?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | C + O2 + H2O  CO2 + HOH + Light | c. | 6C + 6H2O + Light C6H12O6 |
| b. | 6CO2 + 6H2O + Light  C6H12O6 + 6O2 | d. | C6H12O6  6CO2 + 6H2O + Light |

5. Cells store energy when \_\_\_\_\_.

|  |  |
| --- | --- |
| a. | the third phosphate group breaks off from an ATP molecule to make ADP |
| b. | they break down sucrose to glucose and fructose |
| c. | a third phosphate group is bonded to an ADP molecule to make ATP |
| d. | ions are released into the bloodstream |

6. In a recent experiment, scientists studied the effects of increased carbon dioxide levels on the growth of pine trees. The scientists observed that increased levels of carbon dioxide resulted in an increase in the average circumference of the tree trunks. The change in circumference is a result of the process of

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Osmosis | c. | Transpiration |
| b. | Adaptation | d. | Photosynthesis |

7. A scientist wants to study photosynthesis in a newly discovered species. Which of these cell structures should the scientist study?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Chloroplasts | c. | Ribosomes |
| b. | Vacuoles | d. | Mitochondria |

8. What molecules control the reaction rate of photosynthesis?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Nucleic Acid | c. | Enzymes |
| b. | Lipids | d. | Fatty Acids |

9. During photosynthesis, trees convert carbon dioxide and other materials to

|  |  |  |  |
| --- | --- | --- | --- |
| a. | lipids. | c. | amino acids. |
| b. | sugars. | d. | nucleic acids. |

10. Which of the following are the phases in photosynthesis?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Kreb’s Cycle and Calvin Cycle | c. | ETC and Light dependent reactions |
| b. | Light independent reactions and Calvin Cycle | d. | Light dependent reactions and Calvin Cycle |

11. Which of the following NOT a phase in cellular respiration?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Glycolysis | c. | Light Independent Reactions |
| b. | Kreb’s Cycle | d. | Electron Transport Chain |

12. Where does cellular respiration occur in the cell?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Chloroplast | c. | Nucleus |
| b. | Vacuole | d. | Mitochondria |

13. Which of the following correctly lists the order of steps in cellular respiration?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Glycolysis, Kreb’s Cycle, ETC | c. | ETC, Kreb’s Cycle, Calvin Cycle |
| b. | Kreb’s Cycle, ETC, Glycolysis | d. | Glycolysis, Calvin Cycle, ETC |

14. In which of the following phases are 32 ATP **made**?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Glycolysis | c. | Electron Transport Chain |
| b. | Kreb’s /Citric Acid Cycle | d. | Fermentation |

15. Which of the following is the main energy source for cellular respiration?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Sunlight | c. | Oxygen |
| b. | Glucose | d. | Carbon Dioxide |

16. One of the organelles in a eukaryotic cell releases energy from sugars. What is this process called?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Cellular Respiration | c. | Photosynthesis |
| b. | Transpiration | d. | Chemosynthesis |

17. Which of these statements about photosynthesis and respiration is true?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Both processes produce food. | c. | Photosynthesis produces oxygen; respiration does not. |
| b. | Both processes release energy from food. | d. | Photosynthesis produces carbon dioxide; respiration does not. |

18. Which of the following is more efficient in producing ATP?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Calvin Cycle | c. | Anaerobic Respiration |
| b. | Aerobic Respiration | d. | Kreb’s Cycle |

19. Which of the following phases occurs regardless of whether it is anaerobic or aerobic respiration?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Glycolysis | c. | ETC |
| b. | Kreb’s Cycle | d. | Fermentation |

20. Where does glycolysis occur

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Chloroplast | c. | Cytoplasm |
| b. | Mitochondria | d. | Stroma |