Photosynthesis & Cellular Respiration

1. **Numerical response question**

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Left justify your answer in the boxes provided.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Choose from the list of chemical reagents in the box below to answer this question.     |  |  | | --- | --- | | Number | Chemical reagent | | 1 | O2(g) | | 2 | CO2(g) | | 3 | H2O(g) | | 4 | H2O(l) | | 5 | C6H12O6 |   The **products** of cellular respiration and the **reactants** of photosynthesis are \_\_\_\_\_\_ and \_\_\_\_\_\_  Express the numbers in ascending order |

1. **Numerical response question**

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Left justify your answer in the boxes provided.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Choose from the list of descriptors in the box below to answer this question.     |  |  | | --- | --- | | Number | Descriptor | | 1 | Photosynthesis | | 2 | Respiration | | 3 | Exothermic | | 4 | Released | | 5 | Absorbed | | 6 | Endothermic |  * During the process of Photosynthesis, energy is \_\_\_\_\_\_\_\_\_\_\_, an indicating an \_\_\_\_\_\_\_\_\_\_\_\_\_ change * During the process of \_\_\_\_\_\_\_\_\_\_\_\_, energy is released, indicating an \_\_\_\_\_\_\_\_\_\_\_\_\_ change.   Express the numbers in ascending order |

1. A student comparing cellular respiration and hydrocarbon combustion reactions made the following statements.

|  |  |
| --- | --- |
| Number | Statement |
| I | In both reactions, C-H bonds break and C=O bonds form |
| II | Combustion is endothermic and cellular respiration is exothermic |
| III | Only cellular respiration is an oxidation reduction reaction. |

The student's FALSE statement(s) is/are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |
| --- | --- |
| a | I and II |
| b | I and III |
| c | II and III |
| d | I, II and III |

1. Respiration occurs when a human body combusts glucose. The reaction is represented below.

**C6H12O6(s) + 6O2(g) 🡪 6CO2(g) + 6H2O(l)**

The molar heat of combustion of glucose is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

|  |  |
| --- | --- |
| a | -1849.7 |
| b | -1585.7 |
| c | -2538.5 |
| d | -2802.5 |

1. During cellular respiration \_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy found in chemical bonds is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as thermal energy to keep the cells alive.

|  |  |  |
| --- | --- | --- |
| a | Chemical | Released |
| b | Potential | Released |
| c | Chemical | Absorbed |
| d | Potential | Absorbed |

1. In the presence of light, the Euglena is an organism that can produce glucose by photosynthesis. The major energy conversion in the Euglena is an \_\_\_\_\_\_\_\_\_\_\_\_ change with \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
| a | Endothermic | An increase in potential energy |
| b | Exothermic | A decrease in potential energy |
| c | Endothermic | An increase in kinetic energy |
| d | exothermic | A decrease in kinetic energy |

1. 24
2. 5623
3. C
4. D
5. B
6. A