**A. Photosynthesis**

1. Write down the word equation for photosynthesis.

2. Copy and complete this table.

|  |  |
| --- | --- |
| **Name of molecule** | **Chemical Symbol** |
| Water |  |
| Oxygen |  |
| Carbon dioxide |  |
| Glucose |  |

3. Photosynthesis is affected by limiting factors.

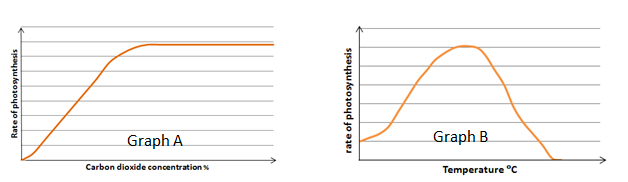
What is meant by the term ‘limiting factor’?

4. Name the raw materials needed by a plant for photosynthesis?

5. Name the green pigment present in plant cells.

6. What is the role of this green pigment?

7. For the graphs below - identify what the limiting factor(s) might be in the experiments.



8. Sketch out Graph A and draw a line onto it showing what might occur if the experiment was repeated at a lower light intensity.

9. List three ways commercial farmers improve the environmental conditions to maximise photosynthesis and ensure they make a profit.

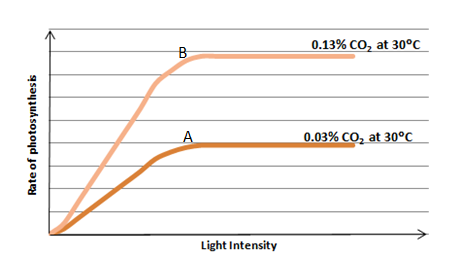
10. How is the glucose produced by photosynthesis used in plants?

**Higher Tier Questions**

**HT 11. Calculate the light intensity for the following student data. Use the formula:**



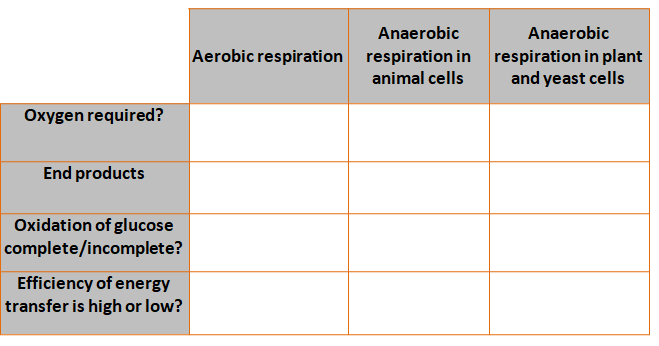
|  |  |  |
| --- | --- | --- |
| **Distance (d) of lamp from pond weed (m)** | **0.3** | **0.5** |
| **Light Intensity 1/d2** |  |  |

**HT 12. a) What is the limiting factor at A?**

**b) What might the limiting factor(s) be at point B?**

**B. Respiration**

1. When does respiration occur in cells?
2. Copy and complete the table below:



3. Name **three** processes that organisms require energy for.

4. What does the chemical formula **C6H12O6** represent?

5. Write down the word equation for aerobic respiration in a plant cell.

6. Write down the word equation for anaerobic respiration in a yeast cell.

7. Why is fermentation of economic importance?

8. Describe **three** ways in which the body responds to vigorous exercise in order to ensure sufficient oxygen reaches the muscle cells.

9. If exercise carries on for a long time, what happens to the muscles?

10. Why is respiration described as an endothermic reaction?

11. Copy and complete the table below:

|  |  |
| --- | --- |
| **Name of large molecule** | **Made from subunits of:** |
| Carbohydrate |  |
| Lipid |  |
| Protein |  |

12. What is the definition of metabolism?

**Higher tier questions**

**HT 13. Describe the process for removing lactic acid from the body.**

**HT 14. What is meant by the term ‘oxygen debt’?**