OCR 21st Century Science

**Unit B4 Statements**

Animal & Plant cells and Photosynthesis & Respiration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | The word equation for photosynthesis is … |  | is used to start a reaction between carbon dioxide and water to produce glucose (a sugar) and oxygen gas is produced as a waste product |  |
| **2** | In photosynthesis light energy is absorbed by the green chemical chlorophyll. This energy … |  | Temperature, light and photosynthesis  |  |
| **3** | The Glucose made in Photosynthesis can be used for … |  | sunlight to build large food molecules in plant cells and some microorganisms (eg phytoplankton) |  |
| **4** | 3 factors that can limit photosynthesis are … |  | 1. using a light meter
2. using a quadrat
3. using an identification key
 |  |
| **5** | Photosynthesis is a series of chemical reactions that use energy from … |  |  *Light energy* carbon dioxide + water 🡪 glucose + oxygen |  |
| **6** | The techniques used in fieldwork to investigate the effect of light on plants can include … |  | 1. converted into chemicals needed for growth of plant cells, for example cellulose, protein and chlorophyll
2. converted into starch for storage
3. used in respiration to release energy
 |  |
| **7** | Respiration is a series of chemical reactions that release … |  | glucose + oxygen 🡪 carbon dioxide + water (+ energy released) |  |
| **8** | All living organisms require energy released by respiration for some chemical reactions in cells … |  | energy by breaking down large food molecules in all living cells |  |
| **9** | The word equation for aerobic respiration is … |  | including chemical reactions involved in:* movement
* synthesis of large molecules
* active transport
 |  |
| **10** | anaerobic respiration takes place in animal and plant cells … |  | in conditions of low oxygen or absence of oxygen, to include:* roots in waterlogged soil
* bacteria in puncture wounds
* human cells during vigorous exercise
 |  |
| **11** | The word equation for anaerobic respiration in animal cells is … |  | glucose 🡪 ethanol + carbon dioxide (+ energy released) |  |
| **12** | The word equation for anaerobic respiration in yeast cells is … |  | glucose 🡪 lactic acid (+ energy released) |  |

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| **1** | The word equation for photosynthesis is … |  | is used to start a reaction between carbon dioxide and water to produce glucose (a sugar) and oxygen gas is produced as a waste product | 2 |
| **2** | In photosynthesis light energy is absorbed by the green chemical chlorophyll. This energy … |  | Temperature, light and photosynthesis  | 4 |
| **3** | The Glucose made in Photosynthesis can be used for … |  | sunlight to build large food molecules in plant cells and some microorganisms (eg phytoplankton) | 5 |
| **4** | 3 factors that can limit photosynthesis are … |  | 1. using a light meter
2. using a quadrat
3. using an identification key
 | 6 |
| **5** | Photosynthesis is a series of chemical reactions that use energy from … |  |  *Light energy* carbon dioxide + water 🡪 glucose + oxygen | 1 |
| **6** | The techniques used in fieldwork to investigate the effect of light on plants can include … |  | 1. converted into chemicals needed for growth of plant cells, for example cellulose, protein and chlorophyll
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3. used in respiration to release energy
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| **7** | Respiration is a series of chemical reactions that release … |  | glucose + oxygen 🡪 carbon dioxide + water (+ energy released) | 9 |
| **8** | All living organisms require energy released by respiration for some chemical reactions in cells … |  | energy by breaking down large food molecules in all living cells | 7 |
| **9** | The word equation for aerobic respiration is … |  | including chemical reactions involved in:* movement
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| **10** | anaerobic respiration takes place in animal and plant cells … |  | in conditions of low oxygen or absence of oxygen, to include:* roots in waterlogged soil
* bacteria in puncture wounds
* human cells during vigorous exercise
 | 10 |
| **11** | The word equation for anaerobic respiration in animal cells is … |  | glucose 🡪 ethanol + carbon dioxide (+ energy released) | 12 |
| **12** | The word equation for anaerobic respiration in yeast cells is … |  | glucose 🡪 lactic acid (+ energy released) | 11 |