***B1 Rev Pack 8 markscheme***

Q1 (a) A - leaf; **1**

B - stem; **1**

C - root; **1**

D - root hairs; **1**

(b) **5**

|  |  |
| --- | --- |
| **Function of part of plant** | **Part of plant** |
| Carries water to other plant organs | B; |
| Makes food using light energy | A; |
| Anchors plant in ground | C; |
| Supports the flowers | B; |
| Absorbs water and mineral salts | D; |

(c) leaf; **1**

(d) absorbs/traps light/sun's energy; **1**

**TOTAL 11**

***QUESTION 2***

(a) carbon dioxide; **1**

(b) leaves/stomata; **1**

(c) photosynthesis/to make food; **1**

(d) respiration; **1**

(e) A - breathing out/exhalation; **1**

B - breathing in/inhalation; **1**

(f) animals eating plants/consumers eating producers/part of food chain; **1**

**TOTAL 7**

***QUESTION3***

(a) (i) A; **1**

(ii) B; **1**

(b) B; **1**

(c) oxygen/glucose; **1**

(d) (i) B; **1**

(ii) requires light energy; **1**

(e) soil/ground; **1**

(f) food/animals/plants; **1**

**TOTAL 8**

***QUESTION 4***

(a) C; **1**

B; **1**

D; **1**

A; **1**

(b) (i) boiling water makes leaf permeable; **1**

(ii) alcohol removes chlorophyll from leaf; **1**

(iii) iodine is used to test for starch; **1**

**TOTAL 7**

***QUESTION5***

(a) to remove starch/destarch leaves; **1**

(b) to exclude light from that part of leaf; **1**

(c) A - yellow/orange/brown; **1**

B - yellow/orange/brown; **1**

C - blue/black/purple; **1**

**TOTAL**

***QUESTIONSHEET 6***

(a) to maintain constant temperature/prevent heat affecting plant; **1**

(b) plant photosynthesises; **1**

and releases oxygen which causes change in colour of indicator; **1**

(c) reduces time for indicator to change colour; **1**

from 20 to 12 minutes; **1**

(d) (i) 1.6/2.0%; **1**

(ii) plant producing oxygen most rapidly; **1**

indicator changes colour quickest; **1**

**TOTAL 8**

***QUESTIONSHEET 7***

(a) five correct plots; **4**

(-1 each incorrect plot)

(b) (i) oxygen released increases as temperature increases; **1**

(ii) higher temperatures cause increased rate of reaction; **1**

(c) no oxygen would be released;

enzymes denatured by high temperature so photosynthesis stops; **2**

(d) Any two of: light intensity/ light wavelength/ carbon dioxide concentration/

water availability; **2**

**TOTAL / 10**

***QUESTIONSHEET 8***

(a) add hydrogen carbonate to the water; **1**

(b) (i) oxygen; **1**

(ii) it would rekindle a glowing splint; **1**

(c) use heat shield/ container of water; **1**

(d) place the lamp at different distances from the plant;

measure volume of oxygen produced at a set time;

keep all other conditions consistent/ same wattage bulb/ start with lamp a

long distance away and move up for each test; **4**

**TOTAL 8**

***QUESTIONSHEET 9***

(a) (i) C; **1**

(ii) A; **1**

(iii) E; **1**

(b) absorbed by roots; **1**

carried by xylem tissue; **1**

up stem to leaf; **1**

(c) phloem; **1**

**TOTAL 7**

***QUESTION 10***

(a) 50 (arbitrary units); **1**

(b) 30 (arbitrary units); **1**

(c) as light intensity increases, rate of photosynthesis increases; **1**

up to a light intensity of 30 arbitrary units and then remains constant; **1**

(d) one of:

temperature; **1**

availability of water; **1**

(e) (i) increasing carbon dioxide levels increases the rate of photosynthesis; **1**

which gives increases yield of tomatoes/faster growth of tomatoes; **1**

(ii) rate of photosynthesis remains the same above a light intensity of 40 arbitrary units; **1**

therefore increased light above this level would have no effect on growth of tomatoes; **1**

**TOTAL 9**

***QUESTION11***

(a) carbon dioxide is increasing;

plant can absorb more carbon dioxide;

carbon dioxide is one of the reactants/ substrates in photosynthesis;

rate of reaction is speeded up/ not limited by carbon dioxide; **4**

(b) other factors affect photosynthesis;

such as temperature/ light intensity;

one of these is a limiting factor between B and C; **2**

(c) (i) more carbon dioxide results in more/ faster rate of photosynthesis;

leading to greater/ faster growth crops/ increased yields of plant foods; **2**

(ii) carbon dioxide forms acid rain;

acid rain damages crops/ slow growth in crops; **2**

**TOTAL 10**