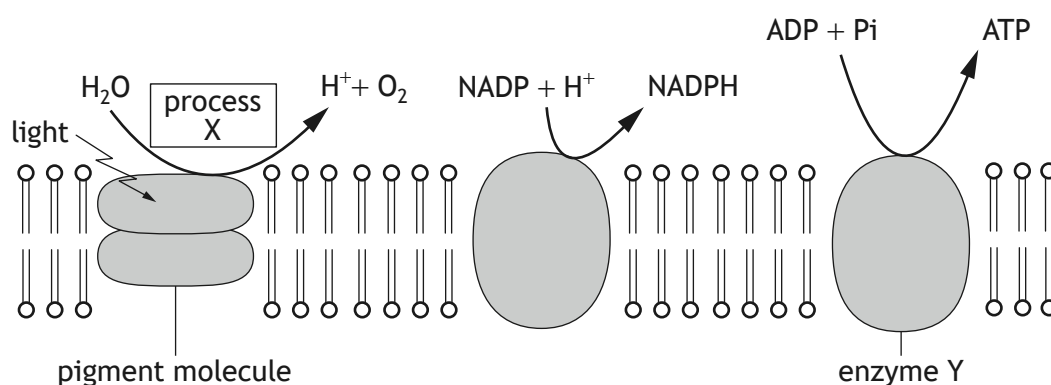


11. Lettuce can be cultivated commercially in greenhouses.

The diagram represents some stages of the light reaction in photosynthesis in lettuce.



(a) Describe what happens to electrons in pigment molecules when light energy is absorbed.

1

\_\_\_\_\_

(b) Name process X and enzyme Y.

2

Process X \_\_\_\_\_

Enzyme Y \_\_\_\_\_

11. (continued)

- (c) In an investigation, the light intensity within greenhouses was varied and the yield of lettuce was calculated at each light intensity.

The results are shown in the table.

| Light intensity<br>(units) | Yield of lettuce<br>(g of dry mass per m <sup>2</sup> ) |
|----------------------------|---------------------------------------------------------|
| 50                         | 25                                                      |
| 100                        | 500                                                     |
| 150                        | 1250                                                    |
| 175                        | 1500                                                    |
| 200                        | 1500                                                    |

- (i) Describe the relationship between light intensity and the yield of lettuce. **2**

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- (ii) Name an environmental factor, other than light intensity, which could increase the yield of lettuce produced.

Explain how this factor would affect the carbon fixation stage of photosynthesis. **2**

Environmental factor \_\_\_\_\_

Explanation \_\_\_\_\_

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[Turn over



\* X 8 0 7 7 6 0 1 2 1 \*