

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

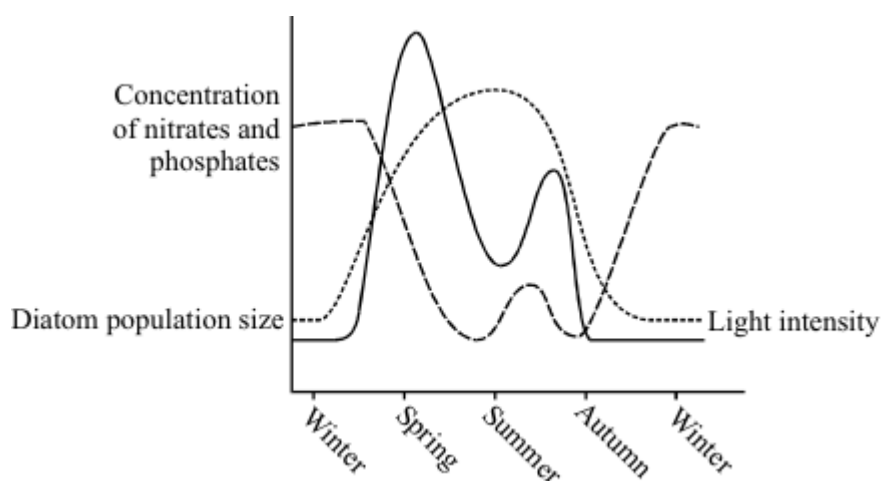
Q1.

A food chain in the North Atlantic Ocean is:

diatoms → small fish → large fish

The graphs show how over a year:

- the population size of diatoms in the North Atlantic varies;
- the light intensity alters;
- the concentration of nitrate and phosphate minerals alters.



- (a) Explain why the light intensity is a major factor in controlling the numbers of diatoms.

(2)

- (b) (i) Suggest **two** reasons why the population of diatoms decreases between spring and summer.

1. _____

2. _____

(2)

(ii) Give **two** reasons why the population of diatoms decreases in autumn.

1. _____

2. _____

(2)

(c) Use the information on the graph to suggest what change causes the number of diatoms to increase in the late summer. Give a reason for the change.

(2)

(Total 8 marks)

Q2.

Plants need chemical energy for respiration and for active transport.

- (i) Write a balanced chemical equation which represents the process of respiration in plants.

(2)

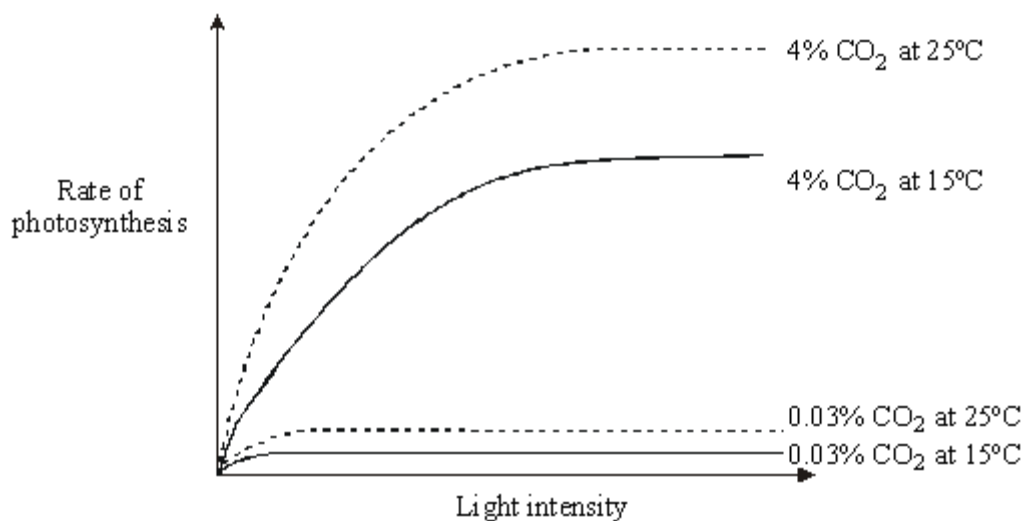
- (ii) Describe the process of active transport in the root hair cells of plants.

(3)

(Total 5 marks)

Q3.

The graph shows how the rate of photosynthesis is affected by different conditions.



(a) What patterns can you find from this graph?

(5)

(b) How useful could this information be to a grower using glasshouses? Give reasons for your answer.

(2)

(Total 7 marks)