

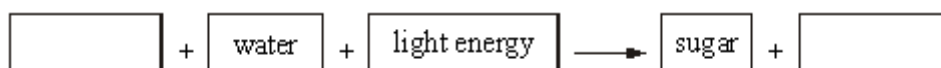
Name of the Student: _____

Max. Marks : 22 Marks

Time : 22 Minutes

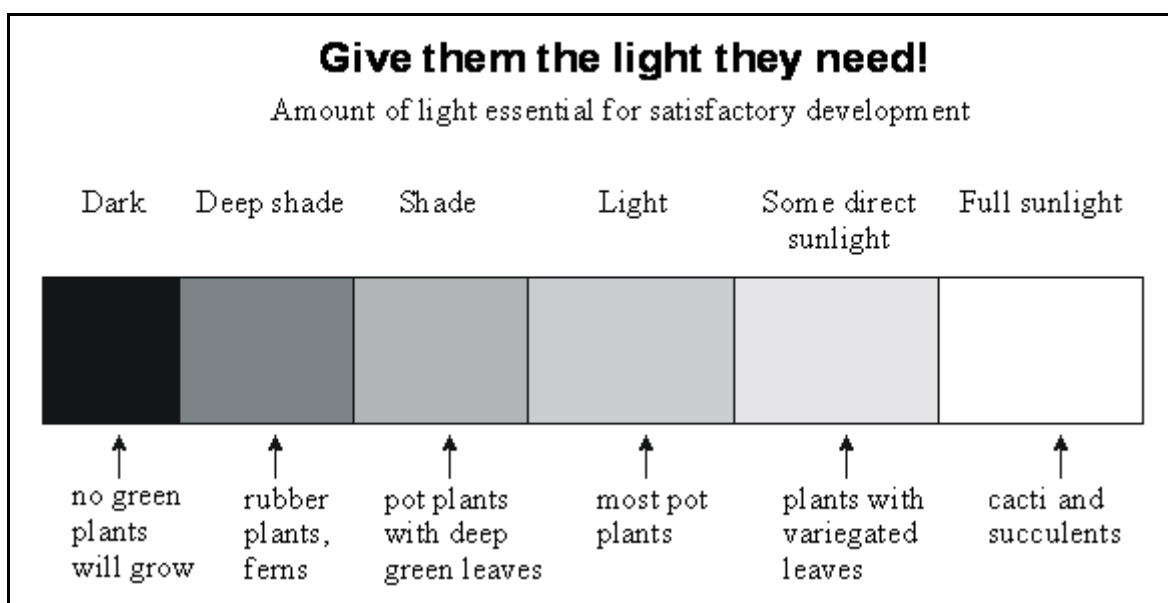
Q1.

- (a) Complete the equation for photosynthesis.



(2)

- (b) The diagram below is printed in a plant care manual.



Use information from the diagram to answer the following questions.

- (i) Name **one** type of plant which could live on the floor of a dense forest in the middle of summer.

(1)

- (ii) Explain the reason for your answer to (i) above.

(1)

- (iii) The drawing shows one type of plant with variegated leaves.

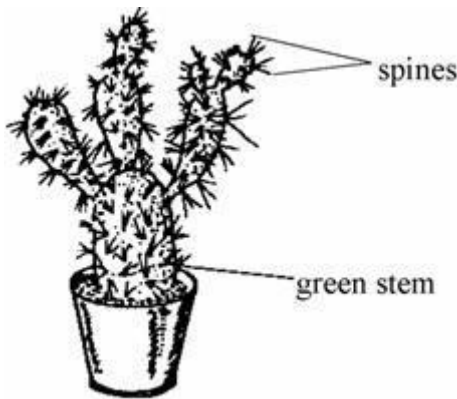


The manual says that these plants need direct sunlight.

Suggest and explain why this plant needs 'some direct sunlight' in order to develop satisfactorily.

(2)

(iv) The drawing shows a cactus.



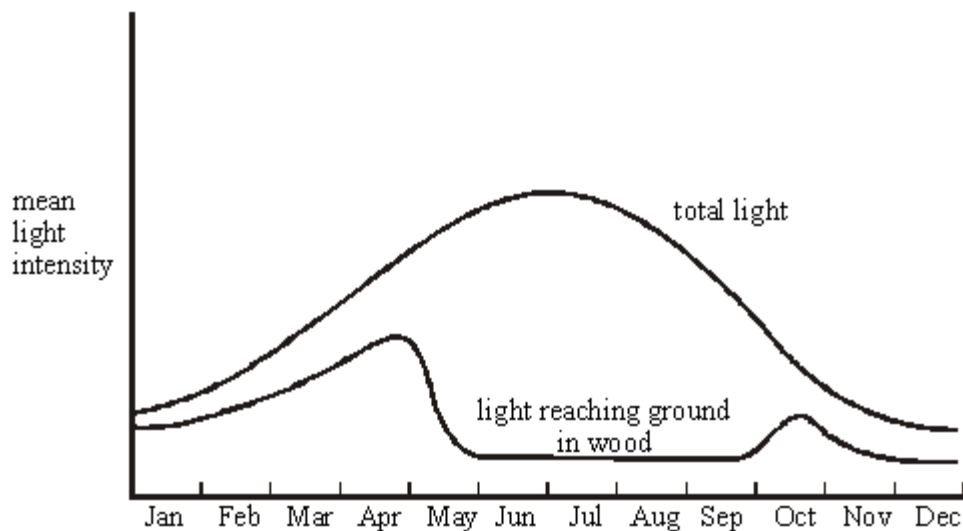
Suggest and explain why cacti can only develop satisfactorily if they receive full sunlight.

(2)

(Total 8 marks)

Q2.

The graph shows the mean light intensity at different times of the year in an oak wood.



- (a) (i) In which month would you expect the rate of photosynthesis in the oak trees to be greatest?

(1)

- (ii) There are plants living on the ground in the wood. In which month would you expect their rate of growth to be fastest?

Explain your answer.

(3)

- (b) Name **two** factors, other than light intensity, that would affect the rate of photosynthesis in the oak trees.

1. _____

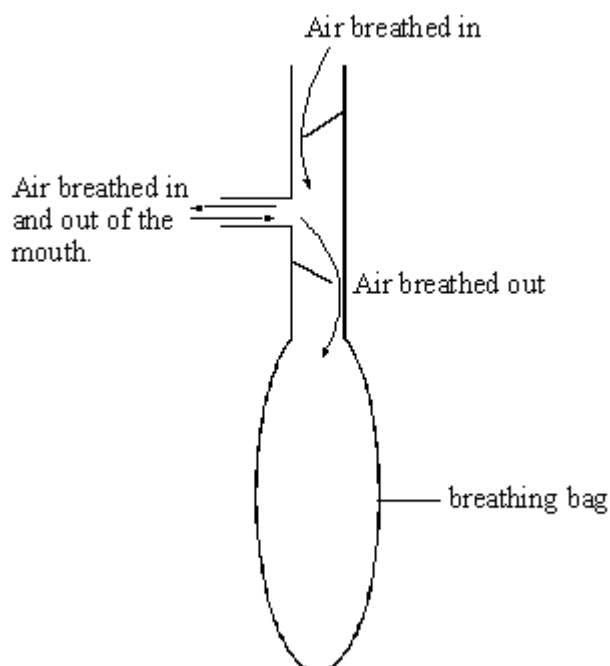
2. _____

(2)

(Total 6 marks)

Q3.

A student breathed out into an empty breathing bag five times.



After breathing out five times the volume of air in the bag was measured.
The volume was 3000 cm^3 .

(a) Complete the following sentences.

The air the student breathed in would contain more _____ than the air the student breathed out.

The air the student breathed out would contain more _____ than the air the student breathed in.

(2)

(b) The student then did some exercise for two minutes. The volume breathed out in five breaths was again measured. This time there was 9000 cm^3 of air in the bag.

What does this tell you about the effect of exercise on breathing?

(1)

(c) (i) Name the chemical process that releases energy when it takes place in the cells of the body.

(1)

(ii) Name the substances produced by this process.

 and

(2)

(iii) Explain as fully as you can why this process has to take place more rapidly during exercise.

(2)
(Total 8 marks)