Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B4 Bioenergetics

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

A young athlete trains and this makes her heart work harder. The table shows part of her training record.

Time measured in weeks from the start of training	0	8	16	24	32	40
Resting pulse rate measured in pulses per minute	75	69	66	63	61	60

(i) Give **two** changes to her heart resulting from this training.

1. _____

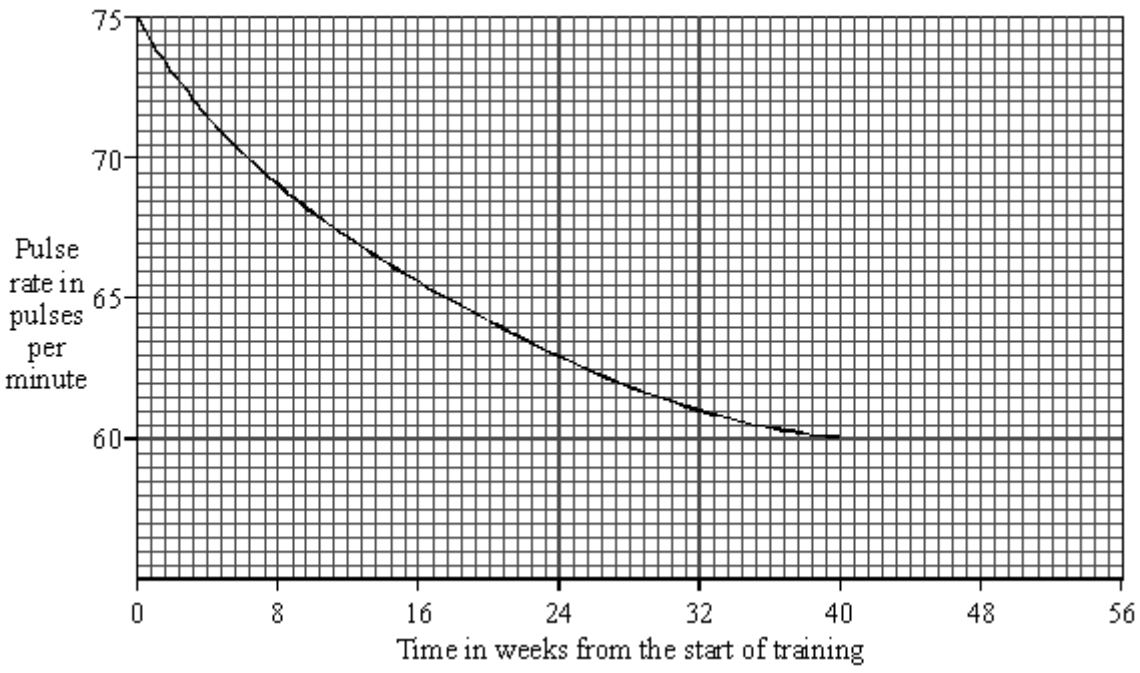
_____

2. _____

_____

(2)

(ii) The graph shows a smooth curve drawn to match the data from her training record.



Use the graph:

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(A) to estimate her resting pulse rate, in pulses per minute, after 18 weeks of training;

_____

(1)

(B) to predict her resting pulse rate, in pulses per minute, if she continues her training until the end of the year.

_____

(1)

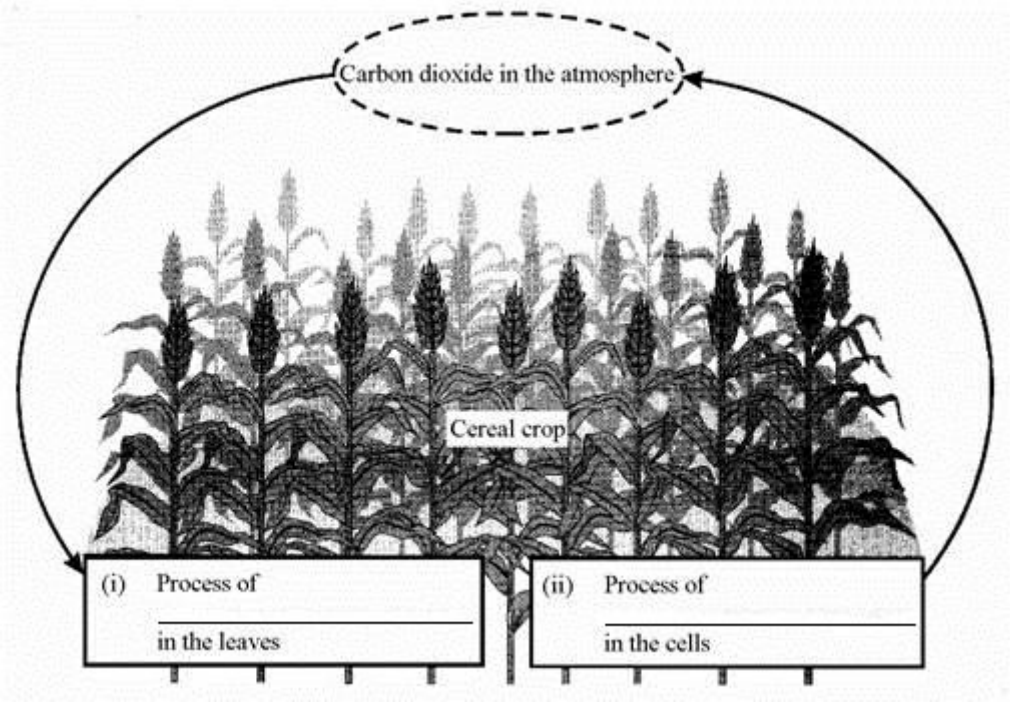
(Total 4 marks)

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Q2.

(a) The diagram shows a cereal crop.

Complete spaces (i) and (ii).



(2)

(iii) What sort of weather may cause the cereal crop to wilt?

_____

(1)

(b) Describe the process of transpiration in plants.

_____

_____

_____

_____

_____

_____

(3)

(Total 6 marks)

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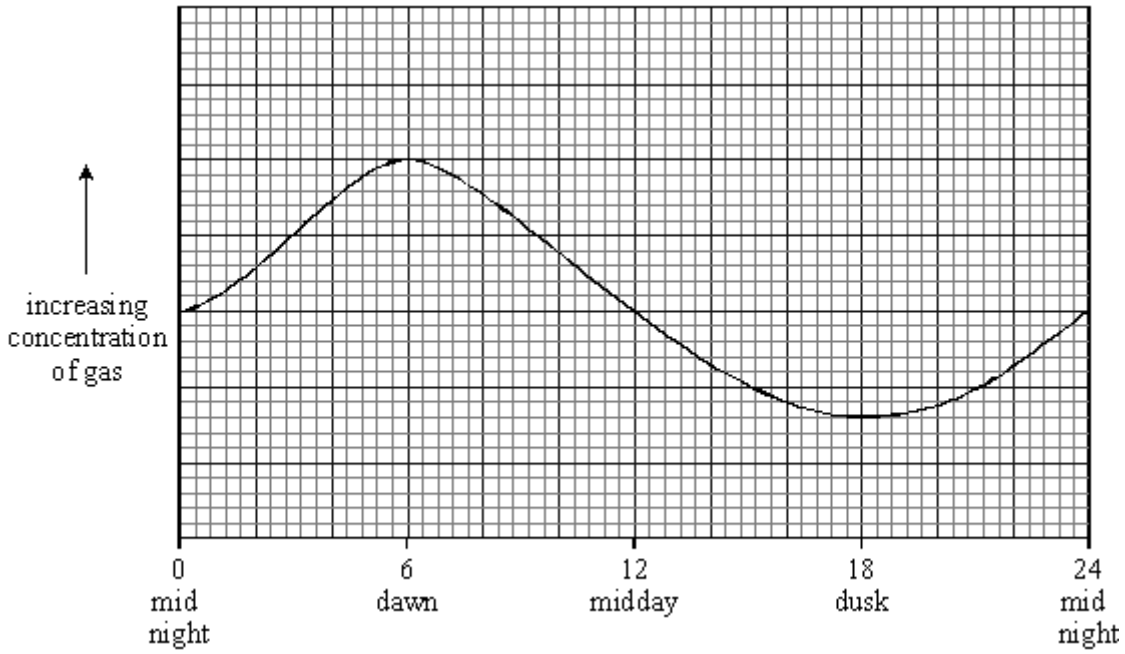
Q3.

Plants produce glucose by a process called photosynthesis.

carbon dioxide + water $\xrightarrow[\text{chlorophyll}]{\text{light}}$ oxygen + glucose

The plant uses glucose to grow.

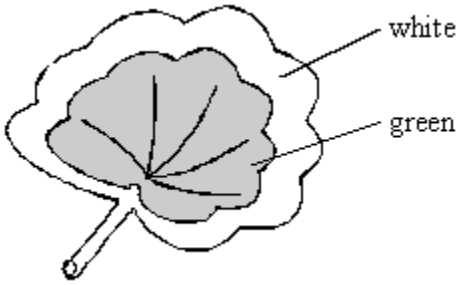
(a) The graph shows the change in concentration of carbon dioxide in a glasshouse full of plants over 24 hours.



Draw a line on the graph to show how the concentration of oxygen changes in the glasshouse.

(3)

(b)



Some plants have variegated leaves with white parts which contain no chlorophyll.

How do you think a variegated geranium would grow compared to a similar sized geranium with all green leaves?

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Explain your answer _____

_____

_____

(2)

(Total 5 marks)

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Q4.

Plants are grown in glasshouses to protect them from the weather or extend the growing season.

Plants make food by photosynthesis.

$$6CO_2 + 6H_2O \xrightarrow[\text{light}]{\text{energy from}} C_6H_{12}O_6 + 6O_2$$

glucose

In winter, when days are shorter, glasshouses are heated to keep the enzyme reactions in plants at optimum rates.

What else should a grower do to make sure that the plants are photosynthesising at the optimum rate? Give a reason for your answer.

_____

_____

_____

_____

_____

_____

(Total 3 marks)

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