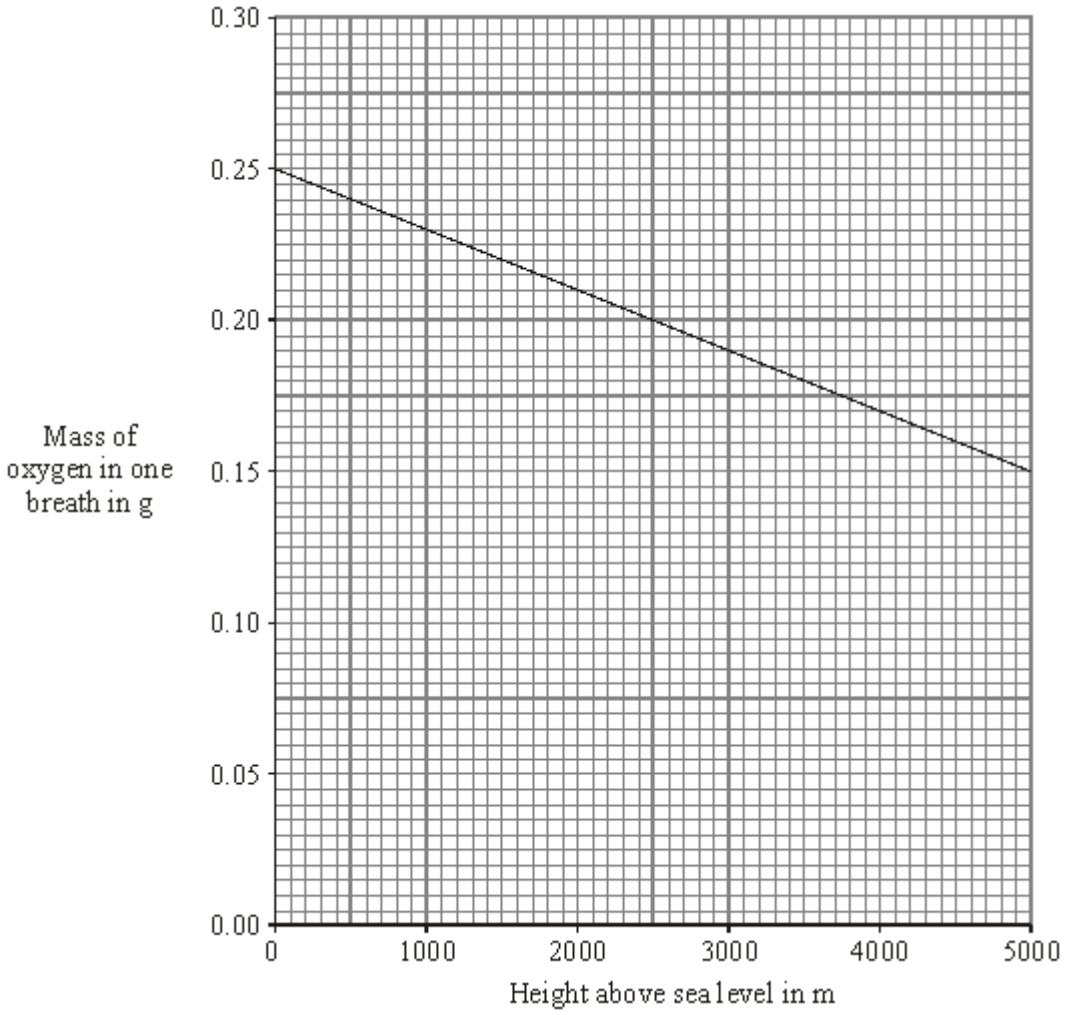
Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B4 Bioenergetics

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Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

(a) The graph shows how the mass of oxygen you breathe in changes as you climb up a mountain.



Describe, in as much detail as you can, how the mass of oxygen in one breath changes as you climb from sea level to 3000 m.

_____

_____

_____

_____

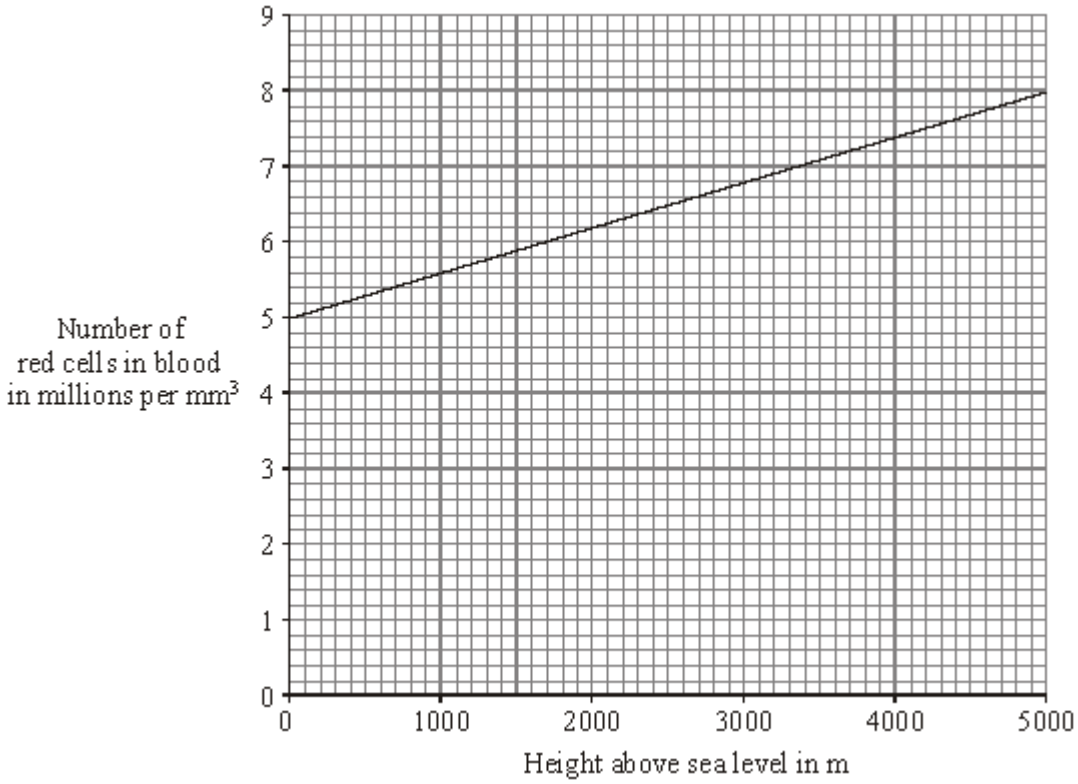
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_____

_____

(3)

(b) People who live high up in mountainous areas have more red blood cells than people who live at sea level. The graph below shows how the number of red blood cells changes with height above sea level.



(i) How many more red blood cells does a person living at 3000 m above sea level have than someone living at sea level? Show clearly how you work out your answer.

_____

_____

Increase in number of red blood cells = _____ millions per m^3

(2)

(ii) What is the advantage of having more red blood cells?

_____

_____

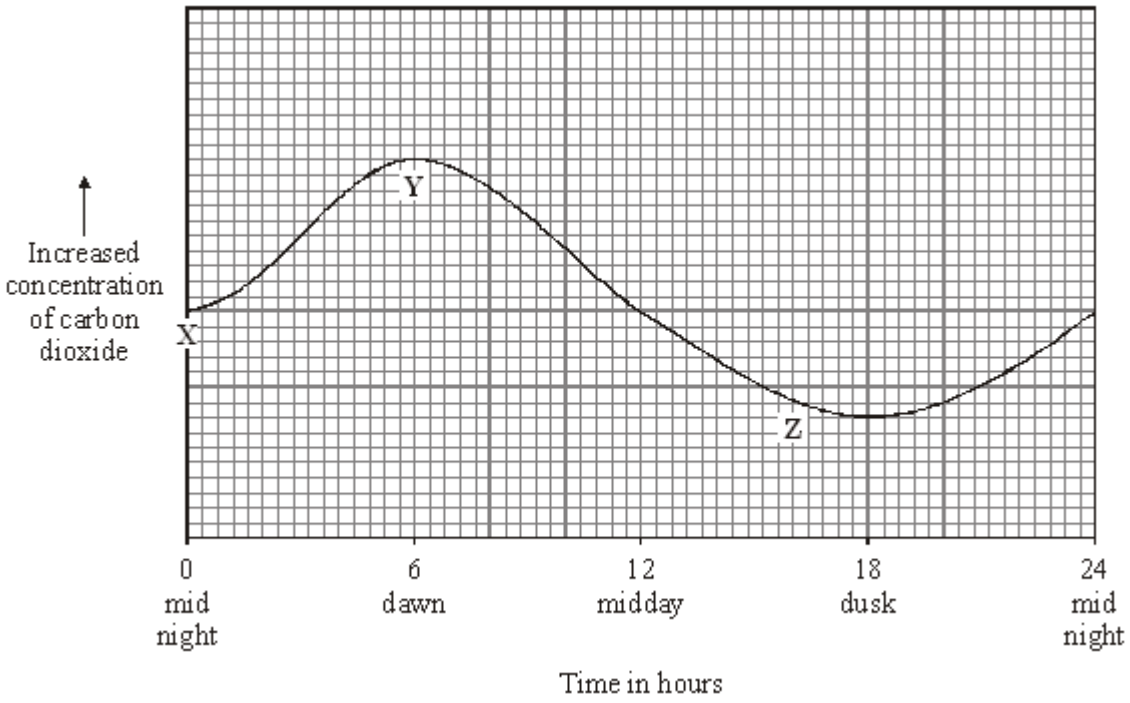
(1)

(Total 6 marks)

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Q2.

The graph shows the concentration of carbon dioxide in the air in a greenhouse full of tomato plants, measured over a period of 24 hours.



(a) Explain why the concentration of carbon dioxide in the air in the greenhouse increased between **X** and **Y**.

_____

_____

_____

_____

(2)

(b) Explain why the concentration of carbon dioxide in the air in the greenhouse decreased between **Y** and **Z**.

_____

_____

_____

_____

(2)

(Total 4 marks)

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Q3.

Oxygen from our lungs is carried, by our blood, to cells in our body where aerobic respiration takes place.

(i) Complete the **two** spaces to balance the chemical reaction for aerobic respiration.

$$C_6H_{12}O_6 + 6O_2 \rightarrow ____ CO_2 + ____ H_2O$$

(1)

(ii) Name the substance with the formula $C_6H_{12}O_6$.

_____

(1)

(iii) Name the structures in the cytoplasm of our cells where aerobic respiration takes place.

_____

(1)

(Total 3 marks)

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Q4.

(a) Balance the following equation for photosynthesis.

_____ CO_2 + _____ H_2O → $C_6H_{I2}O_6$ + _____ O_2

(1)

(b) Give **two** conditions necessary for photosynthesis apart from a suitable temperature range and the availability of water and carbon dioxide.

1. _____

2. _____

(2)

(a) Plants have leaves which contain guard cells and palisade cells. Explain how **each** of these kinds of cell assists photosynthesis.

Guard cells _____

_____

_____

_____

(2)

Palisade cells _____

_____

_____

_____

(2)

(d) Glucose is a product of photosynthesis. Give **three** uses which green plants make of glucose.

1. _____

2. _____

3. _____

(3)

(Total 10 marks)

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