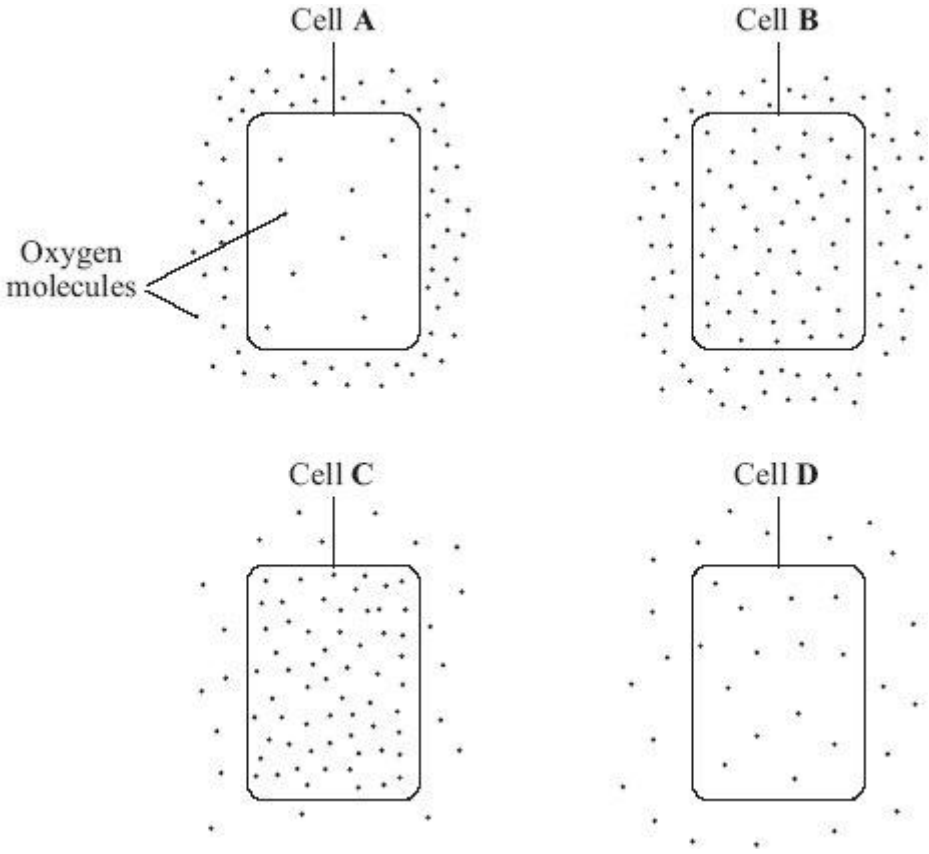
Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B4 Bioenergetics

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

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

Q1.

(a) The diagrams show cells containing and surrounded by oxygen molecules. Oxygen can move into cells or out of cells.



Into which cell, **A**, **B**, **C** or **D**, will oxygen move the fastest?

Write your answer, **A**, **B**, **C** or **D**, in the box. ☐

(1)

(b) Draw a ring around the correct word to complete each sentence.

(i) Oxygen is taken into cells by the process of

diffusion
osmosis
respiration

.

(1)

Downloaded from www.merit-minds.com

(ii) Cells need oxygen for [breathing / photosynthesis / respiration].

(1)

(iii) The parts of cells that use up the most oxygen are the [membranes / mitochondria / nuclei].

(1)

(iv) Some cells produce oxygen in the process of [diffusion / photosynthesis / respiration].

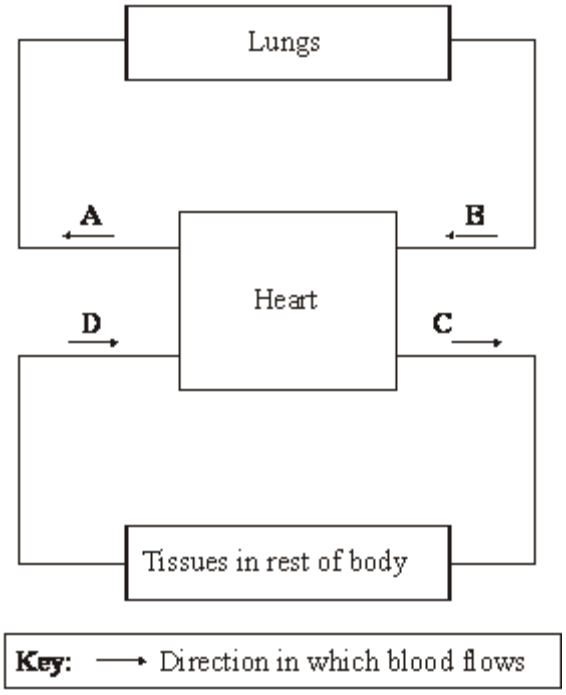
(1)

(Total 5 marks)

Downloaded from www.merit-minds.com

Q2.

The diagram represents the human blood circulation system.



(a) **A**, **B**, **C** and **D** are blood vessels.

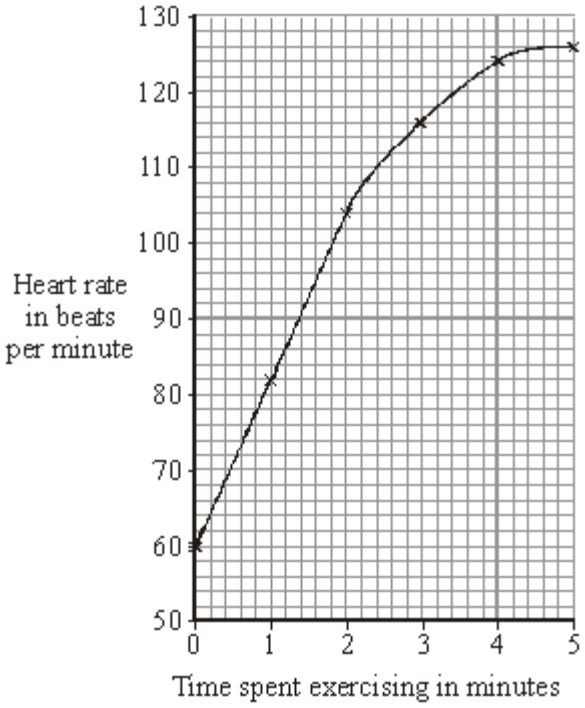
(i) Give the letter of **one** blood vessel that is an artery. _____

(1)

(ii) Give the letter of **one** blood vessel that is a vein. _____

(1)

(b) A student pedalled an exercise cycle at constant speed for 5 minutes. The student's heart rate was recorded at one-minute intervals during the exercise. The results are shown in the graph.



(i) What was the student's heart rate before the exercise began?

Downloaded from www.merit-minds.com

_____ per minute

(1)

(ii) How long was it before the student's heart rate reached 124 beats per minute?

_____ minutes

(1)

(c) Which of the following parts of the blood carries most oxygen?

Draw a circle around **one** answer.

plasma **red blood cells** **white blood cells**

(1)

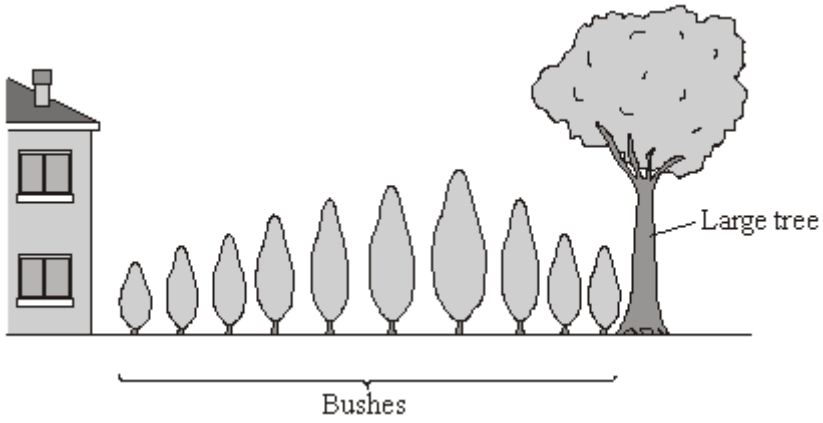
(Total 5 marks)

Downloaded from www.merit-minds.com

Q3.

The diagram shows bushes in a hedge growing near to a house.

The bushes were the same species and the same age.



(a) (i) The student said, “I have noticed that the short bushes grow next to the house. I think that the more light the bushes get, the faster they will grow.”

Draw lines to match each of the student’s statements to the correct term.

Draw only two lines.

Statement	Term
The short bushes grow next to the house.	A conclusion
Plants will grow faster if they get more light.	A prediction
	An observation

(2)

(ii) Complete the word equation for photosynthesis.

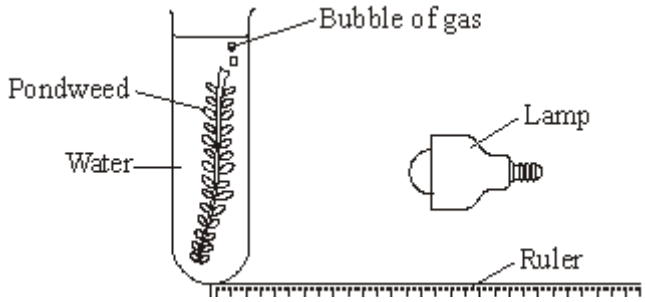
_____ + water (+ light energy) → _____ + oxygen

(2)

(b) The student decided to investigate the effect of light intensity on the rate of photosynthesis.

She used the apparatus shown in the diagram.

Downloaded from www.merit-minds.com



She measured the rate of photosynthesis by counting the number of gas bubbles given off each minute.

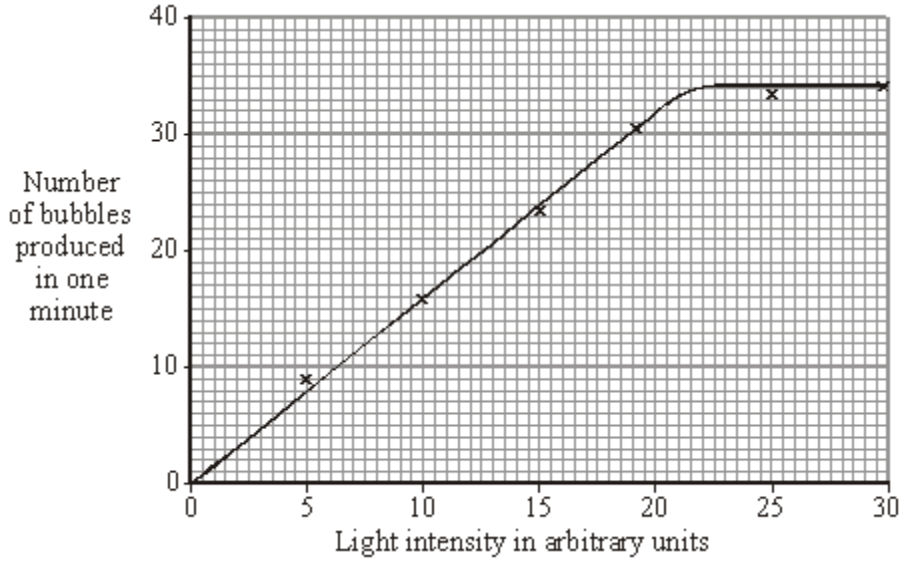
(i) Suggest how the student varied the intensity of the light received by the pondweed.

_____

_____

(1)

(ii) The student's results are shown on the graph.



Describe the pattern shown on the graph.

_____

_____

_____

_____

(2)

Downloaded from www.merit-minds.com

(iii) This is what the student wrote for her conclusion.

"Increasing the light intensity increases the rate of photosynthesis of the pondweed."

Why was her conclusion incomplete?

_____

_____

(1)

(Total 8 marks)

Downloaded from www.merit-minds.com