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

Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

Angina is a condition many people get as coronary heart disease (CHD) develops.

Angina can cause chest pain and tiredness.

People with angina are sometimes treated with a drug called GTN.

GTN widens the coronary arteries.

Explain:

- the causes and symptoms of angina
- how GTN reduces the symptoms of angina.

(Total 6 marks)

Q2.

Otters are mammals that live in river ecosystems.

The figure below shows an otter.

(a) Define the term ‘ecosystem’.

_____

_____

_____

(1)

(b) Otters are an important species for the stability of the river community.

Describe **two** ways animal species may be important for the stability of a whole community.

1 _____

_____

2 _____

_____

(2)

Sewage was accidentally added to a river.

The sewage moved with the river water and affected:

- the number of bacteria in the water
- the concentration of dissolved oxygen in the water.

Samples of river water were analysed at different distances from where the sewage was added.

The table below shows the results.

Distance from where sewage was added in	**Number of bacteria ×**	**Concentration of dissolved oxygen**

km	1000/mm^3	in mg/dm^3
0.0	4	5.4
1.0	75	4.8
2.0	125	4.3
3.0	145	3.8
4.0	160	3.3
5.0	216	2.7

(c) The number of bacteria at 5.0 km was greater than the number of bacteria where the sewage was added.

Calculate how many times greater.

_____

_____

Number of times greater = _____

(1)

(d) A student concluded:

'number of bacteria ∝ concentration of dissolved oxygen'

Explain why the student's conclusion is **not** correct.

Use the table above.

_____

_____

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(2)

(e) Otters:

- live in water and on the land
- eat mainly fish.

The concentration of dissolved oxygen has decreased in a river where otters live.

Explain how the decrease in the concentration of dissolved oxygen in the river water will affect the population of otters.

_____

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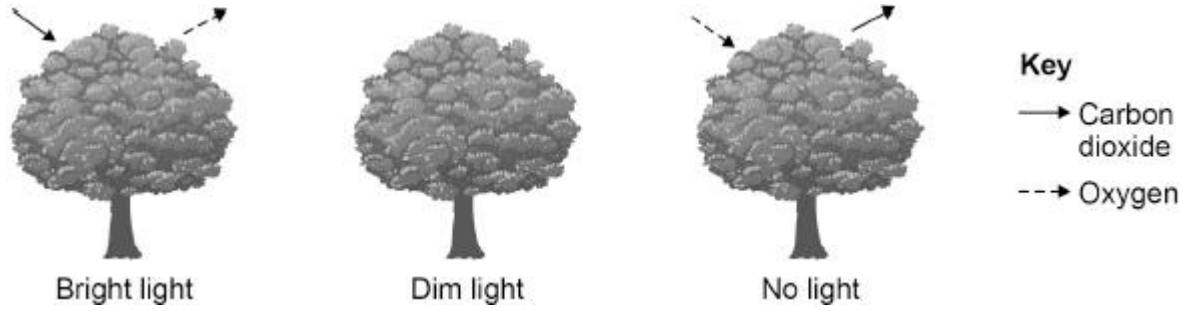
(3)

(Total 9 marks)

Q3.

Light intensity varies during 24 hours.

The figure below shows the overall exchange of carbon dioxide and oxygen for a tree at three different light intensities.



Explain the overall exchange of carbon dioxide and oxygen at the three different light intensities.

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(Total 6 marks)