Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B1 Cell Biology

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Name of the Student:_____
Max. Marks : 25 Marks **Time : 25 Minutes**

Q1.

In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.

Diffusion is an important process in animals and plants.

The movement of many substances into and out of cells occurs by diffusion.

Describe why diffusion is important to animals and plants.

In your answer you should refer to:

- animals
- plants
- examples of the diffusion of named substances.

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(Total 6 marks)

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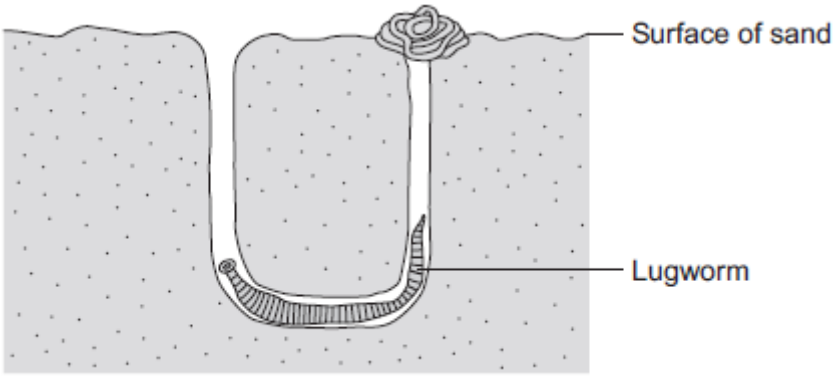
Q2.

The lugworm lives in a U-shaped burrow in the sand on the seashore.

The diagram below shows a lugworm in its burrow.



(a) Some scientists investigated the effect of different salt concentrations on lugworms.

The scientists:

- collected 50 lugworms from the seashore
- separated them into five groups of 10 lugworms
- weighed each group of 10 lugworms
- placed each group into a different concentration of salt solution and left them for 8 hours
- took each lugworm out of the solution and placed it on blotting paper for 30 seconds
- re-weighed each group of 10 lugworms.

(i) Why did the scientists use groups of 10 lugworms and not just 1 lugworm at each concentration?

_____

_____

(1)

(ii) Suggest why the scientists placed each lugworm on blotting paper for 30 seconds before they reweighed the groups of lugworms.

_____

_____

(1)

(iii) How might the method of blotting have caused errors in the results?

_____

_____

(1)

(iv) Suggest **one** improvement the scientists could make to their investigation.

_____

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(1)

(b) The table below shows the scientists' results.

Concentration of salt in arbitrary units	Mass of 10 lugworms at start in grams	Mass of 10 lugworms after 8 hours in grams	Change in mass in grams	Percentage (%) change in mass
1.0	41.2	61.8	+20.6	+50
2.0	37.5	45.0	+7.5	
3.0	55.0	56.1	+1.1	+2
4.0	46.2	22.2	-24.0	-52
5.0	45.3	22.6	-22.7	-50

(i) The scientists calculated the **percentage** change in mass at each salt concentration.

Why is the **percentage** change in mass more useful than just the change in mass in grams?

Use information from the table in your answer.

_____

_____

_____

_____

(2)

(ii) Calculate the percentage change in mass for the 10 lugworms in the salt solution with a concentration of 2.0 arbitrary units.

_____

_____

Percentage change in mass = _____ %

(2)

(c) (i) On the graph paper below, draw a graph to show the scientists' results:

- plot the **percentage** change in mass
- label the horizontal axis
- draw a line of best fit.

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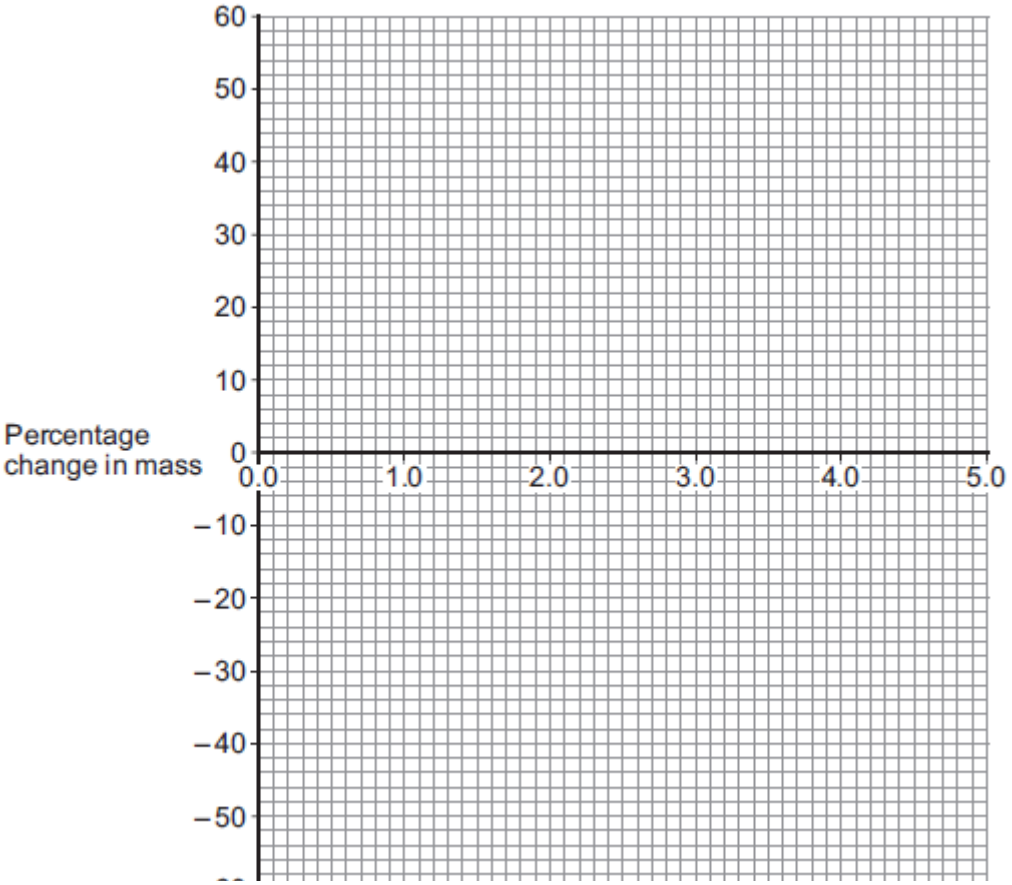

(4)

(ii) The scientists thought one of their results was anomalous.

Draw a ring around the anomalous result on your graph.

(1)

(iii) Suggest what might have happened to cause this anomalous result.

_____

_____

(1)

(d) (i) What do you think is the concentration of salts in the lugworm's natural environment?

Use information from your graph to give the reason for your answer.

Concentration = _____ %

Reason _____

_____

_____

_____

(2)

(ii) The mass of the lugworms decreased in the salt solution with a concentration of 5.0 arbitrary units.

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Explain what caused this.

_____

_____

_____

_____

_____

_____

(3)

(Total 19 marks)

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