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

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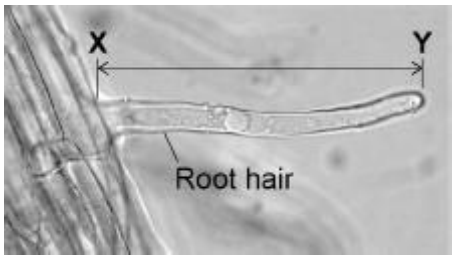
Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

Figure 1 shows a root hair viewed using a microscope.

Figure 1



(a) The root hair was viewed at a magnification of ×50

The image length of the root hair **X–Y** is 43 mm

Calculate the real length of the root hair in micrometres (µm).

_____

_____

_____

_____

_____

_____

Real length = _____ µm

(4)

(b) A microscope has a ×5 eyepiece lens.

Describe how to use this microscope to observe a prepared slide of root hair cells at a magnification of ×50

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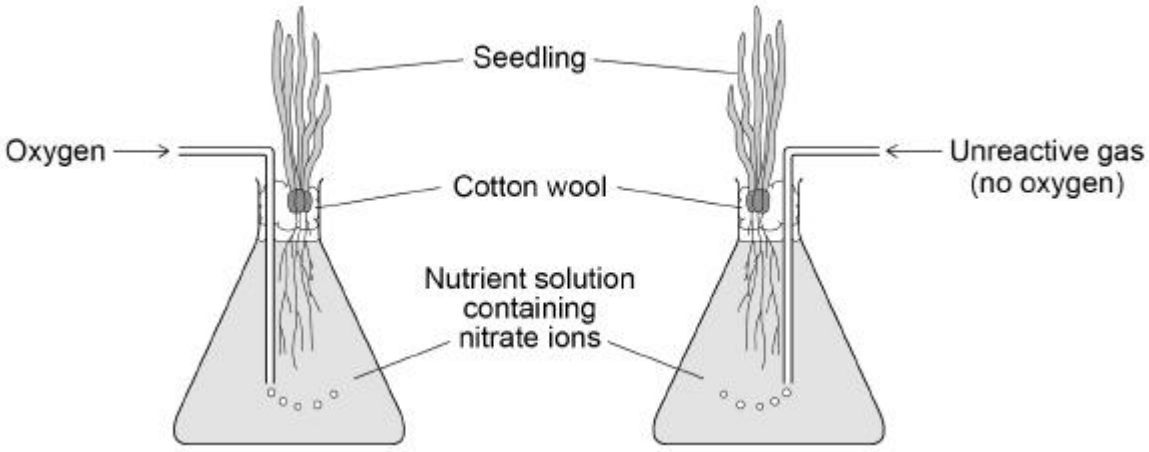
(4)

Root hair cells absorb water and mineral ions from the soil.

A scientist investigated the rate of nitrate ion uptake by two seedlings.

Figure 2 shows how the investigation was set up.

Figure 2



The scientist determined the mass of nitrate ions absorbed by each seedling every 30 minutes for 4 hours.

The table shows the results.

Time in hours	Total mass of nitrate ions absorbed by seedling in arbitrary units	
	With oxygen added	With no oxygen added
0	0	0
0.5	100	60
1.0	145	95
1.5	170	105
2.0	195	115

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2.5	215	120
3.0	235	125
3.5	250	130
4.0	265	130

(c) Describe the changes in the rate of absorption of nitrate ions for the seedling with **no** oxygen added.

Use information from the table.

(3)

(d) Explain what the results in the table above show about how nitrate ions are absorbed.

(4)

(e) Nitrate ions are essential for plants to grow.

Describe how nitrate ions are used in a plant to help the plant grow.

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(3)

(Total 18 marks)

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