Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B2 Organisation

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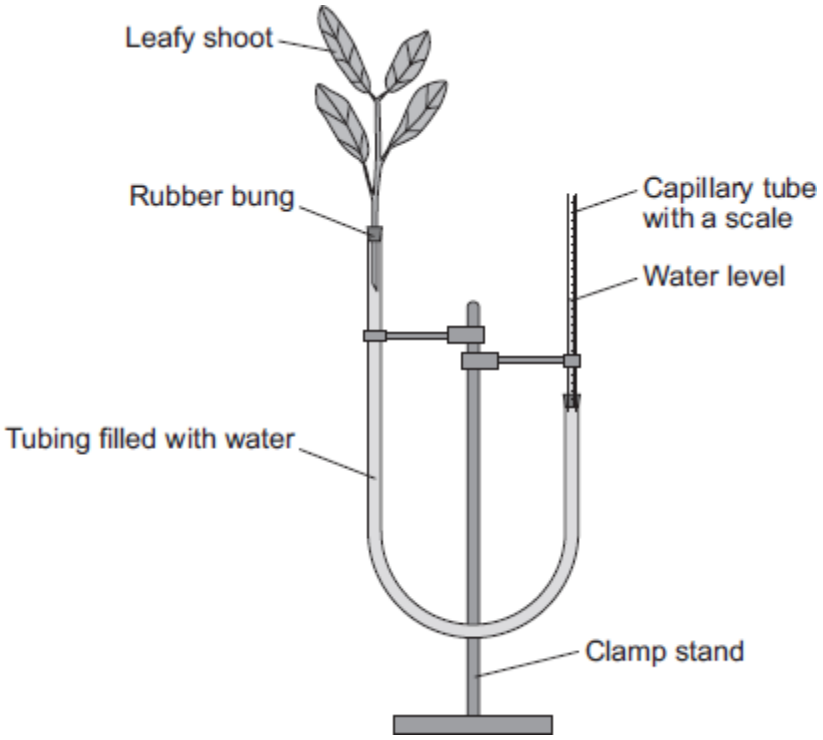
Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

A potometer is a piece of apparatus that can be used to measure water uptake by a leafy shoot.

Figure 1 shows a potometer.

Figure 1



Some students used a potometer like the one shown in **Figure 1.**

- They measured the water taken up by a shoot in normal conditions in a classroom.
- As the water was taken up by the shoot, the level of water in the capillary tube went down.
- The students recorded the level of the water in the capillary tube at 2-minute intervals for 10 minutes.

Table 1 shows the students' results.

Table 1

Time in minutes	0	2	4	6	8	10
Level of water (on scale) in	2.5	3.6	4.4	5.4	6.5	7.5

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capillary tube in mm						

The area of the cross section of the capillary tube was 0.8 mm^2.

(a) (i) Complete the following calculation to find the volume of water taken up by the shoot in mm^3 per minute.

Distance water moved along the scale in 10 minutes = _____ mm

Volume of water taken up by the shoot in 10 minutes = _____ mm^3

Therefore, volume of water taken up by the shoot in 1 minute = _____ mm^3

(3)

(ii) The students repeated the investigation but this time placed the potometer next to a fan blowing air over the leafy shoot.

Suggest how the results would be different. Give a reason for your answer.

_____

_____

_____

_____

(2)

(b) The students repeated the investigation at different temperatures.

The results are shown in **Table 2.**

Table 2

Temperature in °C	Rate of water uptake in mm^3 per minute
10	0
15	0.4
20	1.0
25	2.1
30	3.2
35	4.0
40	4.4

Plot the data from **Table 2** on the graph paper in **Figure 2**.

Choose suitable scales, label both axes and draw a line of best fit.

Figure 2

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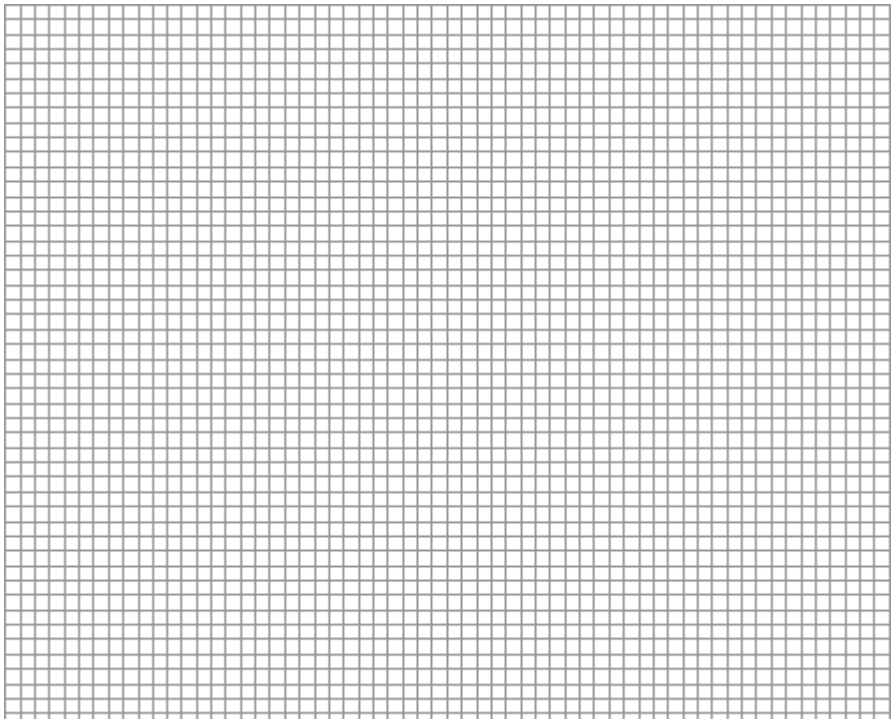

(5)

(c) What would happen to the leaves if the potometer was left for a longer time at 40 °C?

Explain your answer.

_____

_____

_____

_____

_____

_____

(3)

(Total 13 marks)

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Q2.

Lipase is an enzyme that digests fat.

(a) (i) Complete the equation to show the digestion of fat.

Use the correct answer from the box.

glucose	glycerol	glycogen

fat $\xrightarrow{\text{lipase}}$ fatty acids + _____

(1)

(ii) Name **one** organ that makes lipase.

_____

(1)

(b) Some students investigated the effect of bile on the digestion of fat by lipase.

The students:
1 mixed milk and bile in a beaker
2 put the pH sensor of a pH meter into the beaker
3 added lipase solution
4 recorded the pH at 2-minute intervals
5 repeated steps 1 to 4, but used water instead of bile.

Suggest **two** variables that the students should have controlled in this investigation.

1. _____

_____

2. _____

_____

(2)

(c) The graph shows the students' results.

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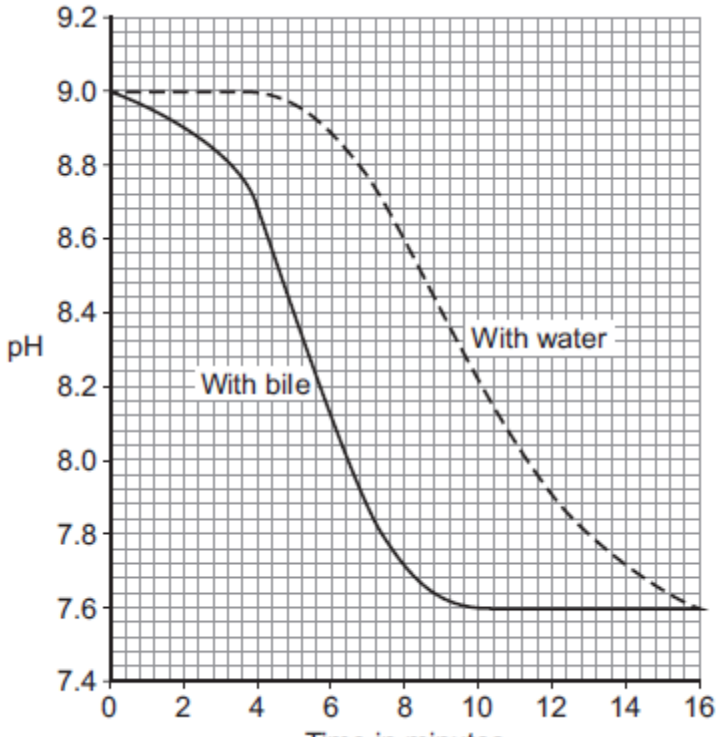

(i) Why did the pH decrease in both investigations?

_____

_____

(1)

(ii) Bile helps lipase to digest fat.

What evidence is there in the graph to support this conclusion?

_____

_____

(1)

(iii) Suggest **one** reason why the contents of both beakers had the same pH at the end of the investigations.

_____

_____

(1)

(Total 7 marks)

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