

AQA – Organism exchange substances with their environment – A2 Biology**1. June/2020/Paper_1/No.2****0 2**

To study lipid digestion, a scientist placed a tube into the gut of a healthy 20-year-old man. The end of the tube passed through the stomach but did not reach as far as the ileum.

The scientist fed the man a meal containing triglycerides through the tube. The scientist also used the tube to remove samples from the man's gut at intervals after the meal.

The scientist measured the type of lipid found in the samples. Some of her results are shown in **Table 1**.

Table 1

Sample	Time of collection after meal / min	Concentration of fatty acids / mg cm ⁻³	Concentration of triglycerides / mg cm ⁻³
A	45	2.7	0.6
B	75	3.3	0.0

0 2 . 1

Use your knowledge of lipid digestion to explain the differences in the results for samples **A** and **B** shown in **Table 1**.

You should assume that **no** absorption had occurred.

[3 marks]

0 2 . 2

After collecting the samples, the scientist immediately heated them to 70 °C for 10 minutes.

Explain why.

[2 marks]

0 2 . 3

Describe the role of micelles in the absorption of fats into the cells lining the ileum.

[3 marks]

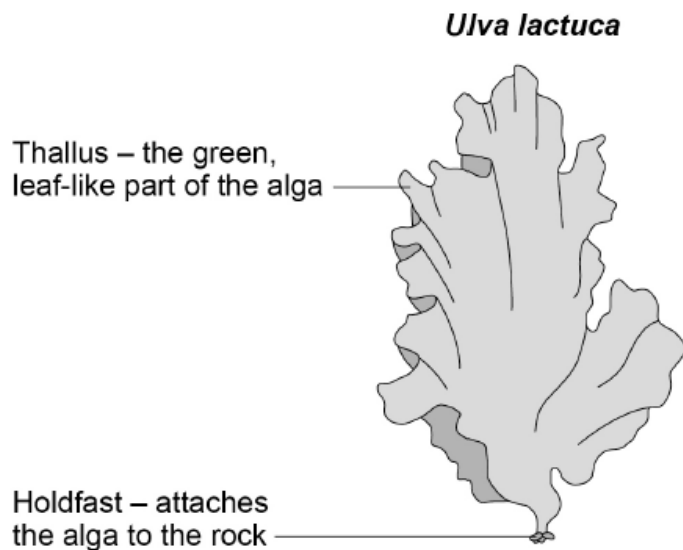
2. June/2019/Paper_1/No.7

07

Ulva lactuca is an alga that lives on rocks on the seashore. It is regularly covered by seawater.

Figure 6 shows a diagram of one *Ulva lactuca* alga.

Figure 6



07.1

Unlike plants, *Ulva lactuca* does not have xylem tissue.

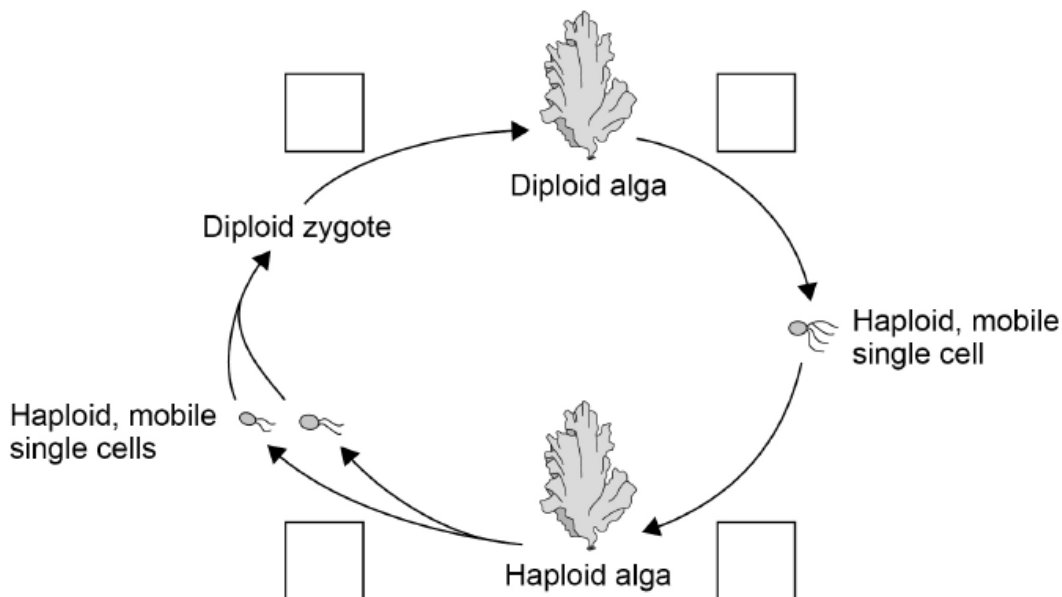
Suggest how *Ulva lactuca* is able to survive without xylem tissue.

[1 mark]

Ulva lactuca has a haploid and a diploid form.

Figure 7 shows the life cycle of *Ulva lactuca*.

Figure 7



0 7 . 2

On **Figure 7** complete each box with an appropriate letter to show the type of cell division happening between each stage in the life cycle. Use 'T' to represent mitosis and 'E' to represent meiosis.

[2 marks]

0 7 . 3

Ulva prolifera also produces haploid, mobile single cells that can fuse to form a zygote.

Suggest and explain **one** reason why successful reproduction between *Ulva prolifera* and *Ulva lactuca* does **not** happen.

[2 marks]
