Oxford Cambridge and RSA

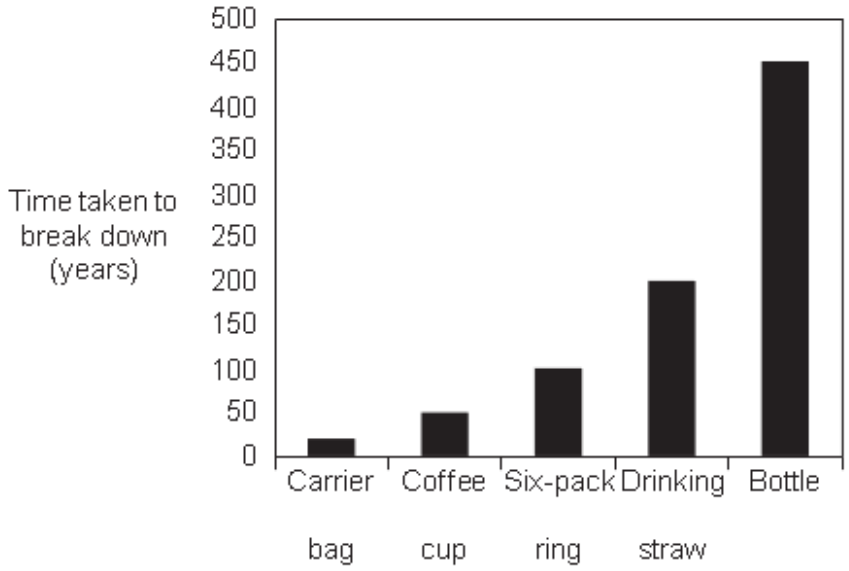
GCSE Biology B (Twenty First Century Science)

J257/02 Depth in Biology (Foundation)

Question Set 8

1 **(a)** Plastic pollution in the sea is a big problem.

The bar chart shows how long it takes for different types of plastic litter to break down in the sea.



(i) Which type of plastic litter takes the longest time to break down, and how long does it take?

[2]

(ii) A crisp packet takes 80 years to break down in the sea.

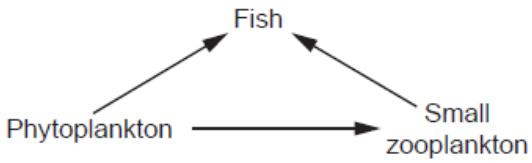
Which types of litter, shown on the bar chart, will break down faster than a crisp packet?

Tick (✓) **two** boxes.

- Carrier bag ☐
- Coffee cup ☐
- Six-pack ring ☐
- Drinking straw ☐
- Bottle ☐

[1]

(b) Look at the food web from the North Sea.



(i) Add the following information to the food web above:

- Phytoplankton are eaten by shellfish.
- Shellfish and fish are eaten by seagulls.

[2]

(ii) Draw straight lines to join each **part of an ecosystem** to the correct **example from the food web**.

Part of an ecosystem	Example from the food web
Community	All the organisms and their North Sea environment
Ecosystem	All the organisms in the food web
Individual organism	All the fish
Population	A fish

[3]

(iii) Phytoplankton are producers.
Zooplankton, fish, shellfish and seagulls are all consumers.

Describe the differences between a producer and a consumer.

[3]

(iv) Plastic litter in the sea breaks down into very small pieces of plastic.

Fish cannot tell the difference between very small pieces of plastic, phytoplankton andsmall zooplankton.

Phytoplankton and small zooplankton are digested by enzymes in a fish's gut.

Explain why very small pieces of plastic in the sea could cause fish to die. **[4]**

(v) Humans eat fish caught from the North Sea.

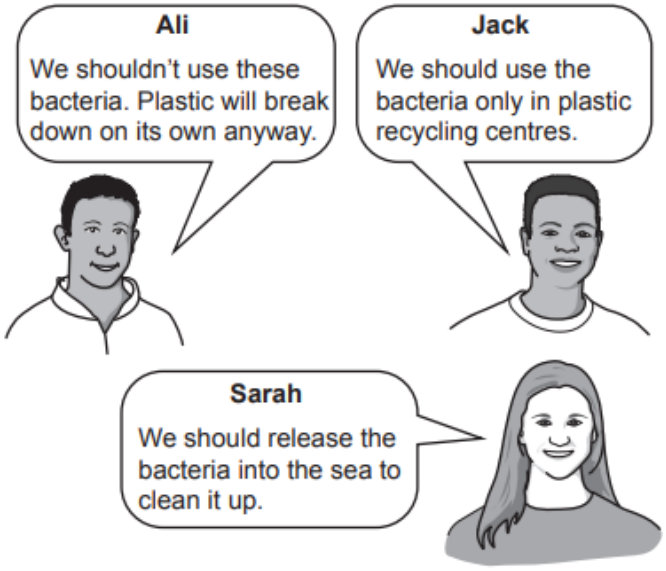
Explain why very small pieces of plastic in the North Sea could be dangerous for humans.

[2]

(c) Scientists have discovered some bacteria in a rubbish dump.

These bacteria break down plastic into very small pieces. The pieces can be used to make new plastic products.

People have suggested different ways of using these bacteria.



Whose suggestion would have benefits for the sea **and** minimise the

possible risks?

Explain your answer.

[3]

Total Marks for Question Set 8: 20