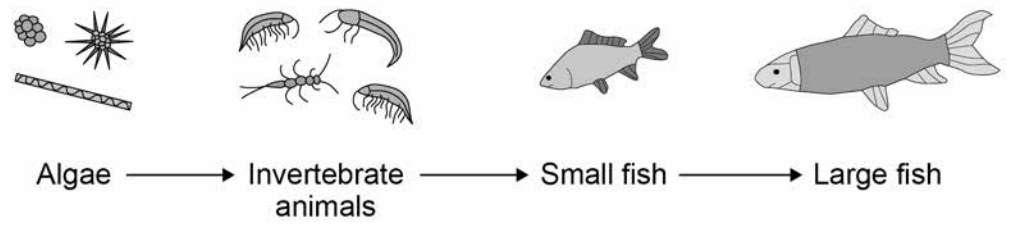
Do not write outside the box

0 1 **Figure 1** shows a food chain in a river.

Figure 1



0 1 . 1 Draw **one** line from each scientific term to the correct organism in the food chain.

[3 marks]

Scientific term	**Organism in the food chain**
	Algae
Apex predator	Invertebrate animals
Primary consumer	Large fish
Producer	Small fish

Do not write outside the box

0 1 . 2 **Table 1** shows the biomass of the organisms at each stage in the food chain.

Table 1

Organism	Biomass in arbitrary units
Algae	840
Invertebrate animals	200
Small fish	40
Large fish	10

Calculate the percentage of the biomass of the invertebrate animals that is transferred to the large fish.

[2 marks]

Use the equation:

$$\text{percentage} = \frac{\text{biomass of large fish}}{\text{biomass of invertebrate animals}} \times 100$$

Percentage = _____

Question 1 continues on the next page

Do not write outside the box

0 1 . 3 A large amount of biomass is lost from the food chain.

Complete the sentences.

[3 marks]

Choose answers from the box.

coordination	**digestion**	**excretion**
filtration	**ingestion**	**respiration**

When the small fish eat the invertebrate animals, not all of this material is broken down during _____ .

Materials absorbed from the gut may enter the body cells of the small fish. These materials are broken down into carbon dioxide and water by _____ .

The carbon dioxide and other waste materials from the body cells are removed from the small fish by _____ .

0 1 . 4 A disease kills many of the small fish.

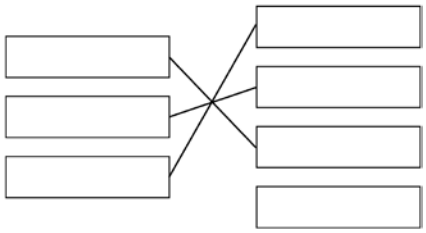
Why does the number of invertebrate animals increase?

[1 mark]

_____

_____

9

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1		extra line from a scientific term cancels the mark	1 1 1	AO2 4.7.4.1
01.2	$\frac{10}{200} \times 100$ 5 / 5.0	an answer of 5 / 5.0 scores **2** marks	1 1	AO2 4.7.4.3
01.3	digestion respiration excretion	in this order only	1 1 1	AO2 4.5.3.3 4.7.4.3
01.4	fewer are eaten (by small fish)	allow there are fewer (small) fish eating them do **not** accept none are eaten	1	AO2 4.7.4.1
Total			**9**	