



UNITED LEARNING

YEAR 8

SCIENCE

END OF YEAR BIOLOGY ASSESSMENT 2023

TIME ALLOWED: 40 MINUTES

Student Name	
Class	

Total Mark

/40

QUESTION 1 – DIGESTION AND NUTRITION (11 marks)

Fish contains protein.

1.1 Which other food is a good source of protein?

Tick the correct box.

Lettuce

Chicken

Pasta

Bread

1

Digestion is the breaking down of large food molecules into small molecules.

Different food groups are broken down into different molecules.

1.2 What are carbohydrates broken down into?

1

1.3 What are proteins broken down into?

1

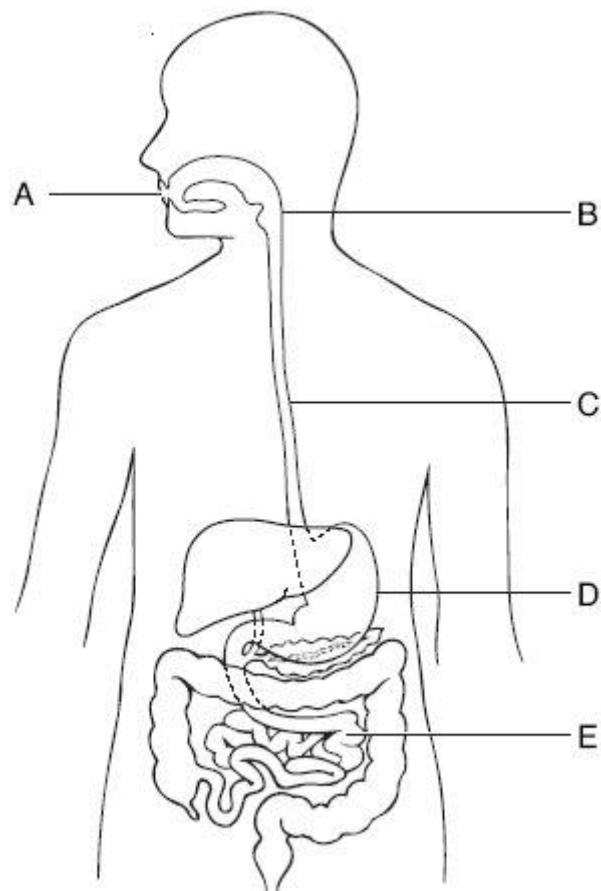
1.4 What **two** things are fats broken down into?

2



Figure 1 shows part of the human digestive system.

Figure 1



1.5 Write the letter which labels the stomach.

.....

1

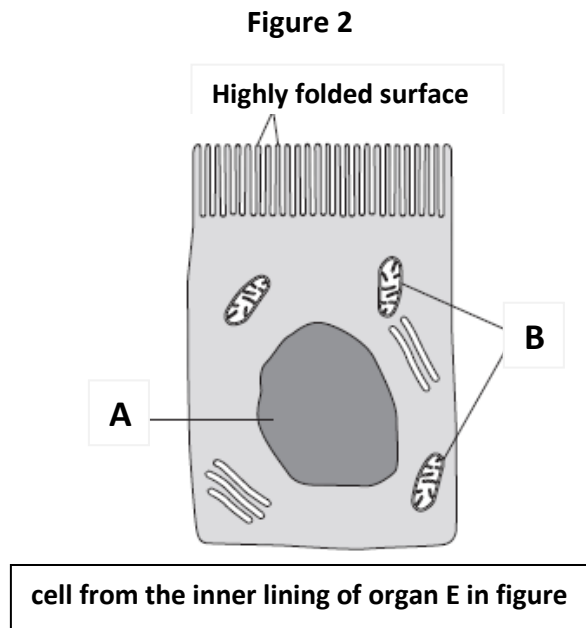
1.6 Write the letter which labels the oesophagus.

.....

1



An image of the cells from organ E are shown in **figure 2**:



1.7 Name the parts of the cell labelled A and B in the diagram.

A _____

B _____

2

1.8 Soluble food is absorbed in the cells from organ E.

Describe how the highly folded cell surface helps the cell to absorb soluble food.

1

1.9 State one way in which animal cells are different from plant cells.

1



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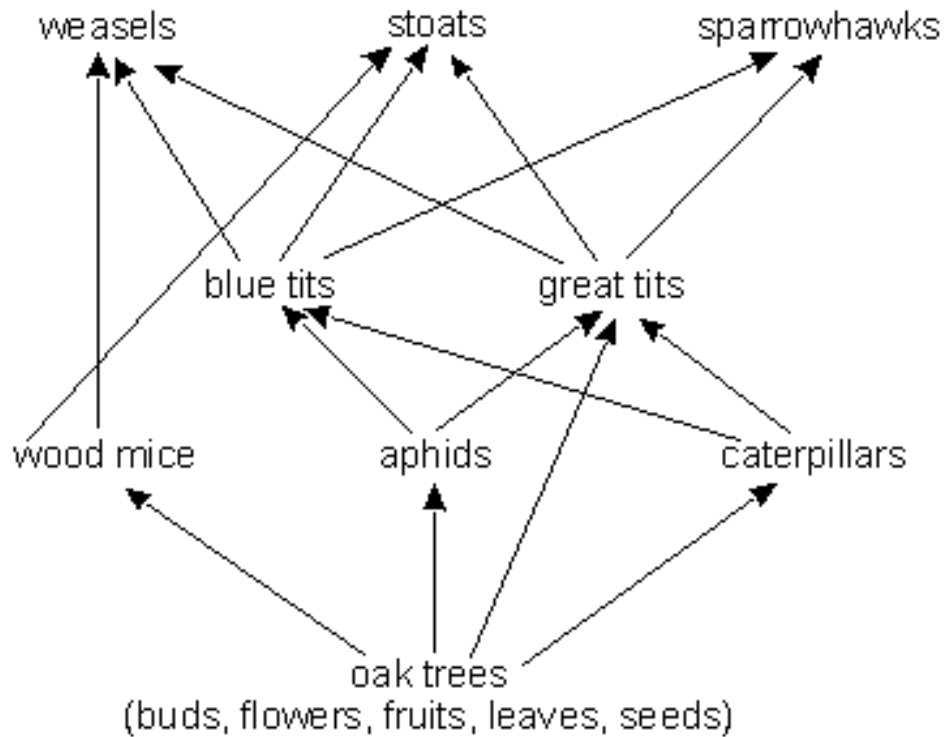
Turn over for the next question.



TURN OVER ►

QUESTION 2 – FOOD WEBS (6 marks)

The diagram below shows part of a food web in a wood.



2.1 Give the name of a **herbivore** from this food web.

1

2.2 Give the name of a **secondary consumer** from this food web.

1

2.3 Give the name of an **omnivore** from this food web.

1



2.4 The numbers of great tits decreases.

What effect will this each have on numbers of sparrow hawks and aphids?

Sparrowhawks _____

Aphids _____

2

2.5 Below is a food chain contained in the food web:

Oak trees → aphids → blue tits → stoats

What happens to the numbers of animals as we go up the food chain?

1

Turn over for the next question.



QUESTION 3 – NUTRIENTS IN FOOD (7 marks)

The table below gives information about 100 g of five different foods.

food	energy per 100 g of food (kJ)	nutrients per 100 g of each food			
		protein (g)	fat (g)	carbohydrate (g)	calcium (mg)
banana	403	1.2	0.3	23.2	6
wholemeal bread	914	9.2	2.5	41.6	54
butter	3031	0.5	82	0	15
cheese	1708	22.5	34.4	0.1	720
milk	275	3.2	3.9	4.8	115

3.1 Which food contains the **lowest** mass of the nutrient used by the body for growth and repair?

1

3.2 Which food contains the **highest** mass of the nutrient needed for strong bones and teeth?

1

3.3 Which food contains the **highest** mass of the nutrient used by the body for insulation?

1



3.4 Calculate the mass of fat in 150g of butter.

Use the information from the table.

Show your working.

Mass:g

2

3.5 Wholemeal bread contains starch.

Describe the test for starch.

2



QUESTION 4 – NATURAL SELECTION (5 marks)

Organisms compete for resources, such as food.

4.1 Give another resource that organisms often compete for?

1

4.2 Many species of organism have become extinct.

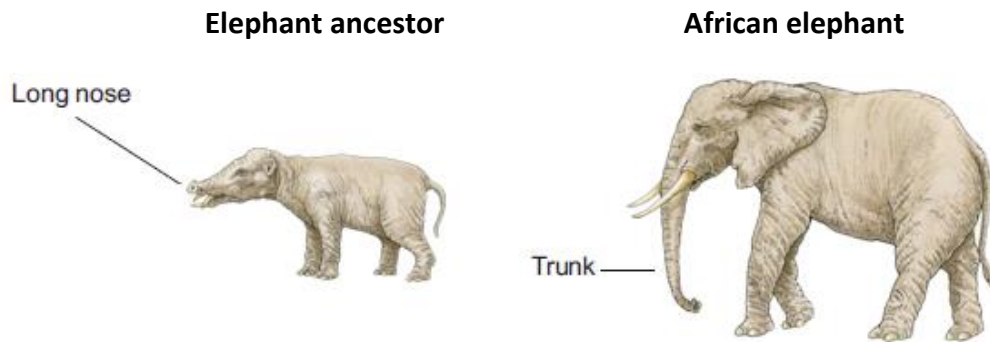
Give **one** reason why a species might become extinct.

1



4.3 The image below shows:

- an ancestor of elephants which lived about 35 million years ago
- a modern African elephant which lives today



Both the African elephant and its ancestor reach up into trees to get leaves.

Elephants compete with each other for food.

Use the theory of natural selection to explain how the elephant's trunk evolved.



QUESTION 5 – ESTIMATING POPULATIONS (5 marks)

A student sampled a field for the number of daises.

She counted the number of daises in 6 randomly thrown quadrats.

Each quadrat had an area of 1 m².

Her results are shown below:

Sample number	Number of daises
1	5
2	7
3	3
4	9
5	7
6	5

5.1 Calculate the mean number of daises per m².

Show your working.

2

5.2 The field has an area of 60 m².

What percentage of the field was sampled?

2

5.3 Estimate how many daises are in the field.

1



QUESTION 6 – BIOACCUMULATION AND DECAY (6 marks)

A food chain in a wood is shown below.

oak trees → *winter moth caterpillars* → *great tits* → *sparrowhawks*

Insecticide was sprayed onto fields near the wood.

Some of the insecticide was blown into the wood by the wind.

6.1 The sparrowhawks contained the highest concentration of insecticide.

Explain why.

2

6.2 In the wood, a dead tree starts to decay.

During decay nutrients from the tree are released by decomposers.

Explain why decay is important.

2

Turn over for the next question.



6.3 Warmth is needed for decay.

Give **two** other ideal conditions for decay.

2

END OF ASSESSMENT



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