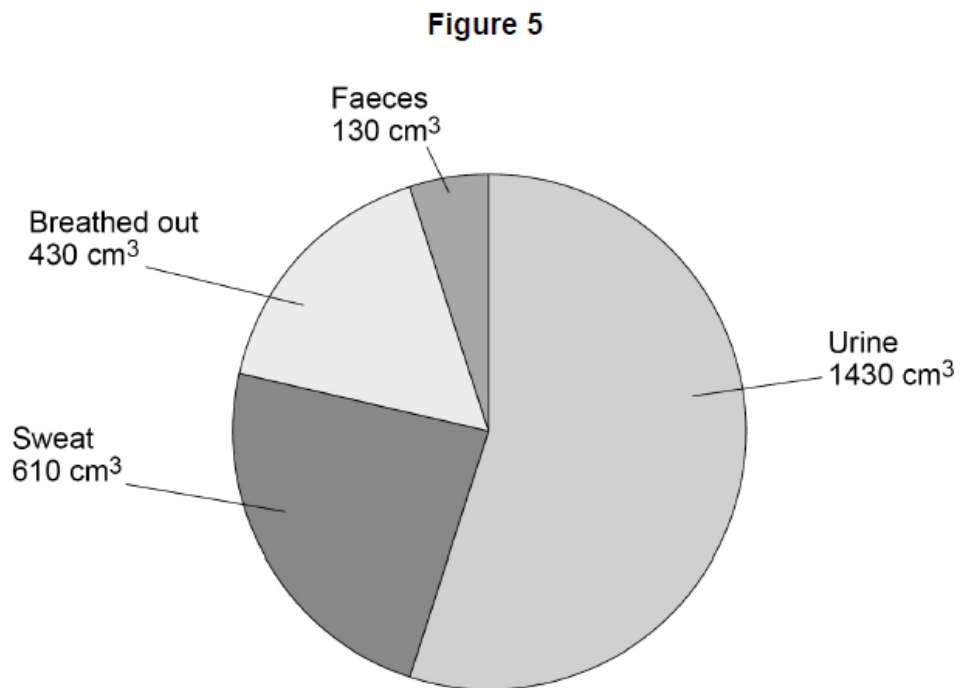


AQA - Homeostasis – GCSE Biology

1. June/2020/Paper_2F/No.4

Figure 5 shows the water loss from a person on one day.



0	4	.	1
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 The total water loss was 2600 cm³.

Calculate the percentage of the total water loss that was lost as urine.

[2 marks]

Percentage lost as urine = _____ %

A marathon race is 42 km long.

0 4 . 2 What happens to the volume of water lost as sweat when a person runs a marathon? [1 mark]

0 4 . 3 What must marathon runners do to prevent themselves becoming dehydrated? [1 mark]

0 4 . 4 Complete the sentences. [3 marks]

Choose answers from the box.

digestion	excretion	fertilisation	filtration	reabsorption
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Blood entering the kidneys goes through the process of

Glucose is **not** found in urine because of _____.

Urine is removed from the body in the process of _____.

0 4 . 5

People with kidney failure can have dialysis or a kidney transplant.

Dialysis is often needed 3 times each week and can take over 4 hours each time.

Dialysis usually happens in a hospital.

Kidney transplants require a donor and major surgery.

Describe the advantages and disadvantages of having a kidney transplant instead of having dialysis.

[4 marks]

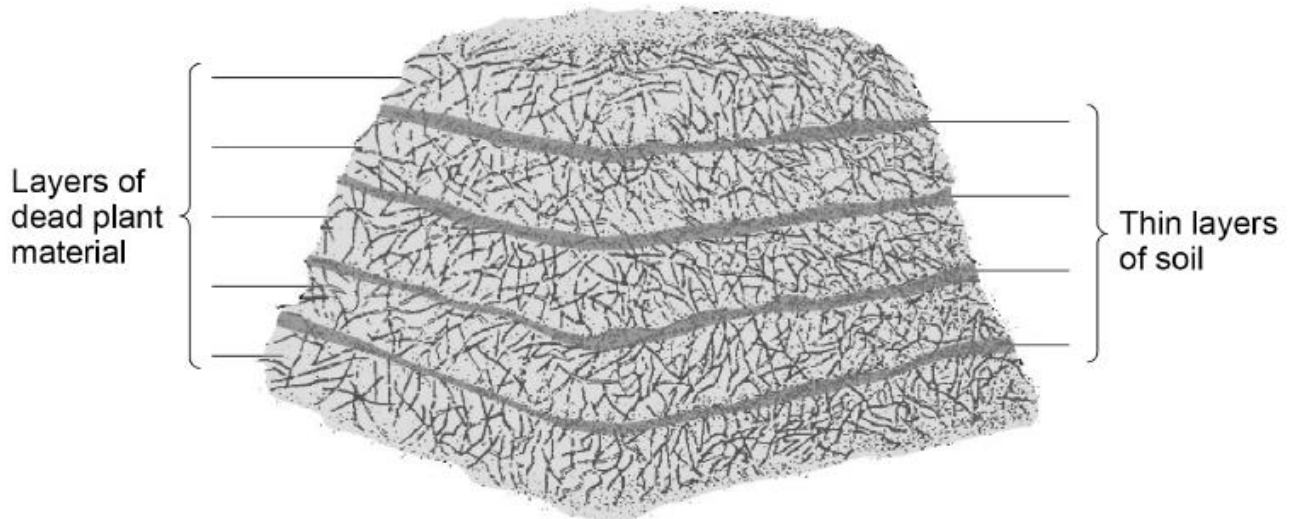
2. June/2019/Paper_2F/No.4

Gardeners sometimes make compost heaps from dead plant material.

The dead plants decay in the compost heap.

Figure 8 shows a compost heap.

Figure 8



0 4 . 1 The thin layers of soil contain organisms that cause decay.

Which **two** types of organism cause decay?

[2 marks]

Tick (✓) **two** boxes.

- | | |
|----------|--------------------------|
| Bacteria | <input type="checkbox"/> |
| Fungi | <input type="checkbox"/> |
| Grass | <input type="checkbox"/> |
| Insects | <input type="checkbox"/> |
| Worms | <input type="checkbox"/> |

The rate of decay in the compost heap depends on several environmental factors.

0 4 . 2 Explain how the rate of decay would be affected by:

- an increase in oxygen concentration
- a temperature increase from 5 °C to 25 °C

[3 marks]

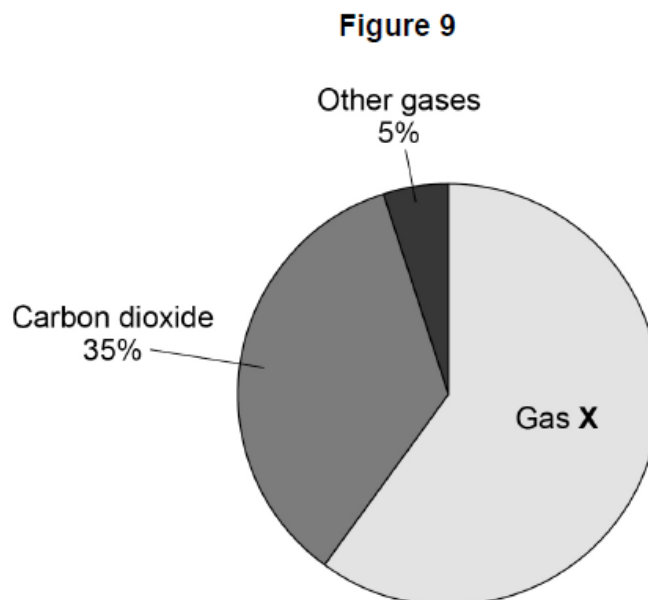
0 4 . 3 Give **one** environmental factor needed for decay.

Do **not** refer to oxygen or temperature in your answer.

[1 mark]

Dead plant material can also be decayed in a biogas generator.

Figure 9 shows the percentages of the gases found in a sample of biogas.



0 4 . 4 Gas X is the main fuel gas found in the biogas.

What is gas X?

[1 mark]

Tick (✓) **one** box.

Carbon monoxide

Hydrogen

Methane

Nitrogen

0 4 . 5

What is the percentage of gas X in the biogas?

[1 mark]

Percentage = _____ %

0 4 . 6

The dead plant material in the compost heap and biogas generator does not decay completely.

Explain why a farmer might spread the remaining dead plant material onto his fields.

[2 marks]
