

0 6

Earthworms are small animals that live in soil. Earthworms have no specialised gas exchange system and absorb oxygen through their skin.

0 6 . 1

What is the name of the process in which oxygen enters the skin cells?

[1 mark]

Tick **one** box.

Active transport

Diffusion

Osmosis

Respiration

Table 3 shows information about four skin cells of an earthworm.

Table 3

Cell	Percentage of oxygen	
	Outside cell	Inside cell
A	9	8
B	12	8
C	12	10
D	8	12

0 6 . 2

Which cell has the smallest difference in percentage of oxygen between the outside and the inside of the cell?

[1 mark]

Tick **one** box.

A	<input type="checkbox"/>
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B	<input type="checkbox"/>
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C	<input type="checkbox"/>
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D	<input type="checkbox"/>
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0 6 . 3 Which cell will oxygen move **into** the fastest?

[1 mark]

Tick **one** box.

A	
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B	
---	--

C	
---	--

D	
---	--

0 6 . 4 Earthworms have a large surface area to volume ratio.

Suggest why a large surface area to volume ratio is an advantage to an earthworm.

[1 mark]

0 6 . 5 The earthworm uses enzymes to digest dead plants.

Many plants contain fats or oils.

Which type of enzyme would digest fats?

[1 mark]

Question 6 continues on the next page

Turn over ►



0 6 . 6 Earthworms move through the soil.

This movement brings air into the soil.

Dead plants decay faster in soil containing earthworms compared with soil containing **no** earthworms.

Explain why.

[3 marks]

0 6 . 7 When earthworms reproduce, a sperm cell from one earthworm fuses with an egg cell from a different earthworm.

Name the process when an egg cell and a sperm cell fuse.

[1 mark]

0 6 . 8 Some types of worm reproduce by a process called fragmentation.

In fragmentation, the worm separates into two or more parts. Each part grows into a new worm.

What type of reproduction is fragmentation?

[1 mark]

10



Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.1	diffusion		1	AO2 4.1.3.1
06.2	A		1	AO2 4.1.3.1
06.3	B		1	AO3 4.1.3.1
06.4	(earthworm) can absorb more oxygen (in a given time) or increases / more gas exchange	allow get / obtain / take in more oxygen ignore easier absorption of oxygen ignore references to food	1	AO2 4.1.3.1
06.5	lipase		1	AO1 4.2.2.1
06.6	more oxygen (in soil with earthworms) (for) more (aerobic) respiration (of) bacteria / fungi / microorganisms / microbes / decomposers	reference to more is only needed once for the first two marking points allow earthworms bring oxygen to soil do not accept anaerobic respiration	1 1 1	AO2 4.4.2.1 4.7.2.2
06.7	fertilisation	ignore sexual reproduction	1	AO1 4.6.1.1 4.6.1.2

Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.8	asexual (reproduction)	allow cloning	1	AO2 4.6.1.1
Total			10	