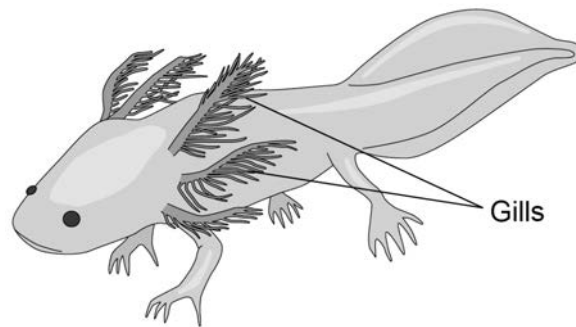


0 2

An animal called an axolotl lives in water.

Figure 3 shows an axolotl.

Figure 3



Oxygen enters the axolotl's bloodstream through the gills by diffusion.

0 2 . 1

What is diffusion?

[1 mark]

Tick (✓) **one** box.

The movement of particles from a high concentration to a low concentration

The movement of particles from a low concentration to a high concentration

The movement of water from a concentrated solution to a more dilute solution

0 2 . 2

Describe how **one** feature of the axolotl's gills increases the rate of diffusion of oxygen.

Use information from **Figure 3**.

[2 marks]

Feature _____

Description _____



If a gill of an axolotl is removed, stem cells in the damaged area will divide and a new gill will grow.

0 2 . 3

Complete the sentence.

[1 mark]

Choose the answer from the box.

adaptation

differentiation

evolution

variation

When stem cells specialise to produce gill cells, this process is

known as _____.

0 2 . 4

Complete the sentence.

[1 mark]

Choose the answer from the box.

binary fission

mitosis

mutation

To grow a new gill the stem cells divide by _____.

0 2 . 5

Which **one** of the following does **not** contain stem cells?

[1 mark]

Tick (✓) **one** box.

Bone marrow

Embryos

Hair

Meristem tissue

Turn over ►



0 2 . 6

Axolotls are small animals. Axolotls are used in stem cell research.

What are **two** advantages of using axolotls in stem cell research?

[2 marks]

Tick (✓) **two** boxes.

Axolotls are cheap to feed.

Axolotls are easy to breed.

Axolotls are endangered.

Axolotls live in water.

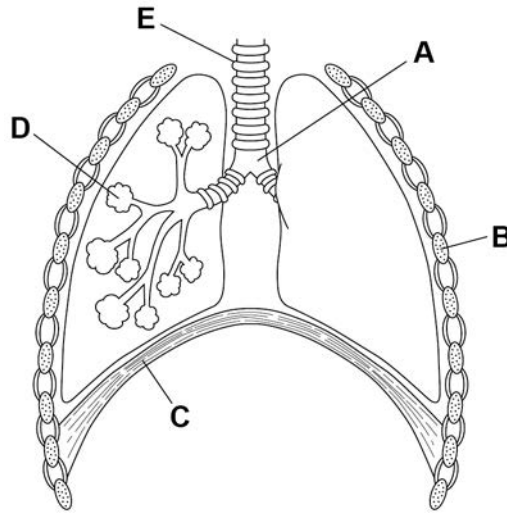
Axolotl research is cruel.



Oxygen uptake in humans takes place in the lungs.

Figure 4 shows the human breathing system.

Figure 4



0 2 . 7 Where does oxygen enter the bloodstream?

[1 mark]

Tick (✓) **one** box.

A B C D

0 2 . 8 Name part **E** on **Figure 4**.

[1 mark]

0 2 . 9 Which blood vessel carries blood to the lungs?

[1 mark]

Tick (✓) **one** box.

Aorta

Pulmonary artery

Vena cava



Question	Answers	Extra information	Mark	AO / Spec. Ref.
02.1	the movement of particles from a high concentration to a low concentration		1	4.1.3.1 AO1
02.2	(gills) have (many) projections (for) large(r) surface / area or (gills) are on the outside of the body (1) for good access to water (1)	allow description of projections allow have lots of / five gills	1 1	4.1.3.1 AO2
02.3	differentiation		1	4.1.2.3 AO1
02.4	mitosis	do not accept meiosis	1	4.1.2.2 AO1
02.5	hair		1	4.1.2.2 4.1.2.3 AO1
02.6	axolotls are cheap to feed axolotls are easy to breed		1 1	4.1.2.3 AO3
02.7	D		1	4.2.2.2 AO1
02.8	trachea	allow windpipe allow cartilage (ring)	1	4.2.2.2 AO1
02.9	pulmonary artery		1	4.2.2.2 AO1
Total			11	