

8.1 The Circulatory System

Question Paper

Course	CIE A Level Biology (9700) exams from 2022
Section	8. Transport in Mammals
Topic	8.1 The Circulatory System
Difficulty	Easy

Time allowed: 10

Score: /10

Percentage: /100

Question 1

Arteries will resist any changes of blood pressure flowing through it.

Which feature of an artery allows it to do this?

- 1 thick layer of muscle in the artery wall
- 2 thick elastic layer in the artery wall
- 3 smooth endothelium

A 1, 2 and 3 **B** 1 and 2 **C** 1 and 3 **D** 2 and 3

[1 mark]

Question 2

The following lists some features of the cardiovascular system.

Which is not a factor that changes blood pressure?

- A** The volume of blood returning to the heart each heartbeat.
- B** The systolic pressure of the heart ventricles.
- C** The number of red blood cells in circulation.
- D** The diameter of the blood vessels.

[1 mark]

Question 3

The following lists some features of blood, tissue fluid and lymph.

- 1 fatty acids
- 2 white blood cells
- 3 Proteins
- 4 carbon dioxide

Which of the above components are found in all three substances?

- A** 1 and 2 **B** 1, 2 and 4 **C** 1, 2 and 3 **D** 1 and 4

[1 mark]

Question 4

The majority of mammals (including humans) have a double circulatory system.

What does the term double circulatory system mean?

- A** The heart has two of each chamber, the atria and the ventricles.
- B** Blood passes twice through the heart during one complete circulation of the body.
- C** The blood circulates separately in the two sides of the heart.
- D** Two sets of valves closing contributes to the double-sound of each heartbeat.

[1 mark]

Question 5

All blood vessels are made up of different tissues.

Which of the following is present in all of them?

- A** smooth muscle
- B** Endothelial
- C** Elastic
- D** Fibrous

[1 mark]

Question 6

An arteriole is a small blood vessel found leading to the capillary bed in tissues. One function of an arteriole is to increase or decrease the flow of blood to the tissues.

Which of the following tissues allows the arteriole to carry out this function?

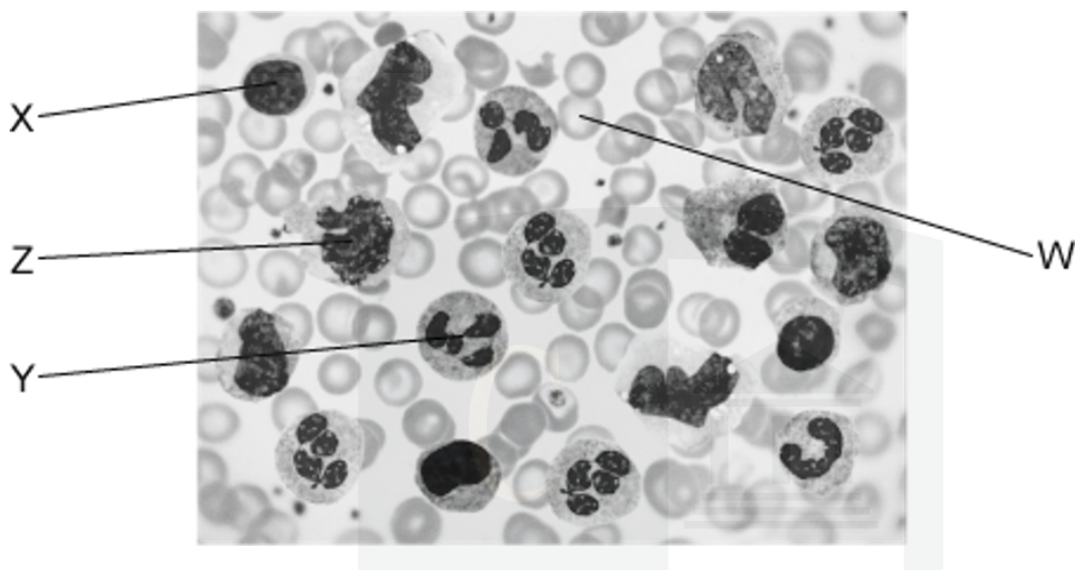
- 1** Muscle
- 2** Collagen
- 3** Elastic

- A** 1, 2 and 3 **B** 1 and 3 **C** 1 only **D** 3 only

[1 mark]

Question 7

The micrograph below shows human blood. There are four cells labelled.



Which row of the table below labels the cells correctly?

	W	X	Y	Z
A	lymphocyte	erythrocyte	phagocyte	phagocyte
B	erythrocyte	phagocyte	phagocyte	lymphocyte
C	phagocyte	phagocyte	lymphocyte	erythrocyte
D	erythrocyte	lymphocyte	phagocyte	phagocyte

[1 mark]

Question 8

Arteries have thick elastic layers in their walls; those closest to the heart have thicker layers than the rest.

Which of the following statements about this layer is correct?

- 1 It reduces friction within the blood vessels.
- 2 It evens out the blood flow from the heart.
- 3 It prevents too high a pressure bursting the artery wall.

A 1 and 2 **B** 1 and 3 **C** 2 and 3 **D** 3 only

[1 mark]

Question 9

Which row shows correctly identifies the composition of tissue fluid?

	phagocytes	platelets	protein concentration compared to plasma
A	X	X	higher
B	✓	✓	higher
C	X	✓	lower
D	✓	X	lower

Key ✓ = present, X = absent

[1 mark]

Question 10

The table below shows some features of arteries, veins and capillaries:

	feature	arteries	veins	Capillaries
1	wall	thick	thin	single cell
2	lumen	wide	narrow	narrow
3	blood pressure	high	low	low

Which row in the table is correct?

- A** 1 and 2 **B** 1 and 3 **C** 2 and 3 **D** 1, 2 and 3

[1 mark]