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6.2 The Blood System

Medium

BIOLOGY

IB HL

EXAM PAPERS PRACTICE

6.2 The Blood System

Question Paper

Course	DP IB Biology
Section	6. Human Physiology
Topic	6.2 The Blood System
Difficulty	Medium

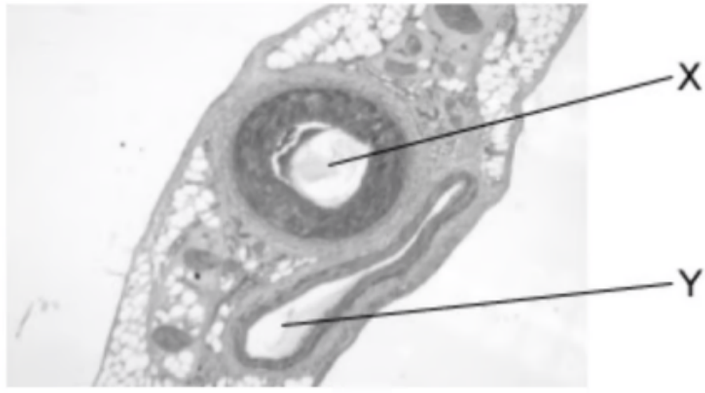
Time allowed: 20

Score: /10

Percentage: /100

Question 1

The image below shows two structures commonly found in mammals. A light microscope was used to view the sample.



Identify the structures labelled **X** and **Y** along with one correct feature of these structures.

	X	Y	Feature
A	Vein	Artery	**Y** contains deoxygenated blood
B	Trachea	Artery	the lumen of **X** allows air to pass through
C	Artery	Vein	**Y** contains many cells filled with oxyhaemoglobin
D	Artery	Vein	**X** contains many cells filled with oxyhaemoglobin

[1 mark]

Question 2

Galen developed theories about circulation which were later disregarded as a result of the work of William Harvey.

Which of the following statements correctly defines a theory?

A A carefully thought out idea with accompanying evidence that explains observations of the natural world.

B A prediction about the result we expect to see from an investigation.

C A phenomenon which the scientific community has observed.

D A proposed idea to be tested by experimentation and observation.

[1 mark]

Question 3

The table gives the features of three blood vessels in the mammalian circulatory system.

Vessel 1	Vessel 2	Vessel 3
Thin layer of smooth muscle with few elastic fibres	Thick layer of elastic fibres and smooth muscle	No elastic fibres or smooth muscle

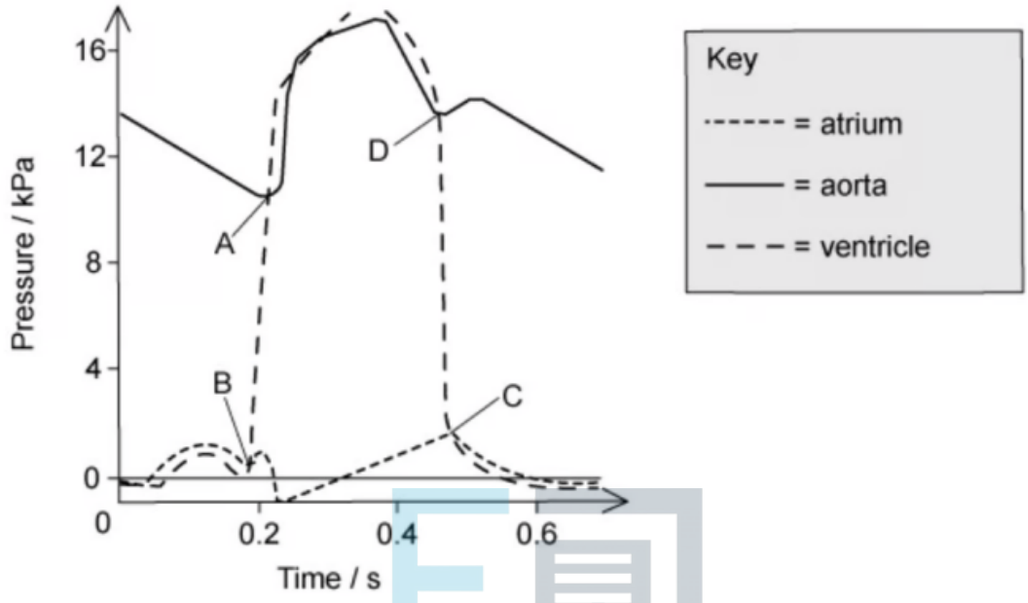
What are vessels 1, 2 and 3?

	Vein	Capillary	Artery
A	3	2	1
B	1	3	2
C	2	3	1
D	1	2	3

[1 mark]

Question 4

The graph below shows the pressure in different parts of the heart during one cardiac cycle.

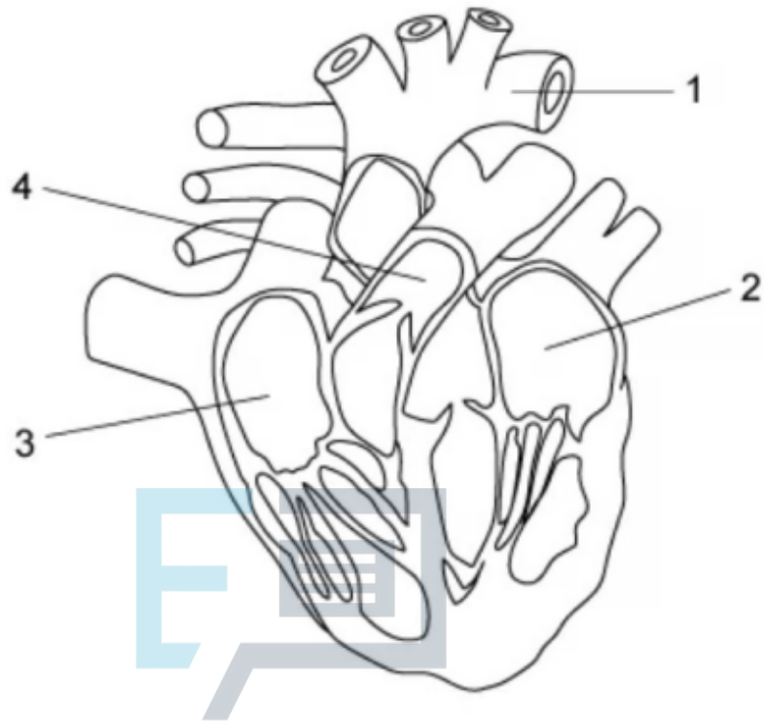


At which point does the semilunar valve of the aorta close?

[1 mark]

Question 5

The diagram below shows the heart and associated blood vessels.



Which of the following would be correct for the flow of blood through the heart?

A $4 \rightarrow 3 \rightarrow 2 \rightarrow 1$

B $3 \rightarrow 4 \rightarrow 2 \rightarrow 1$

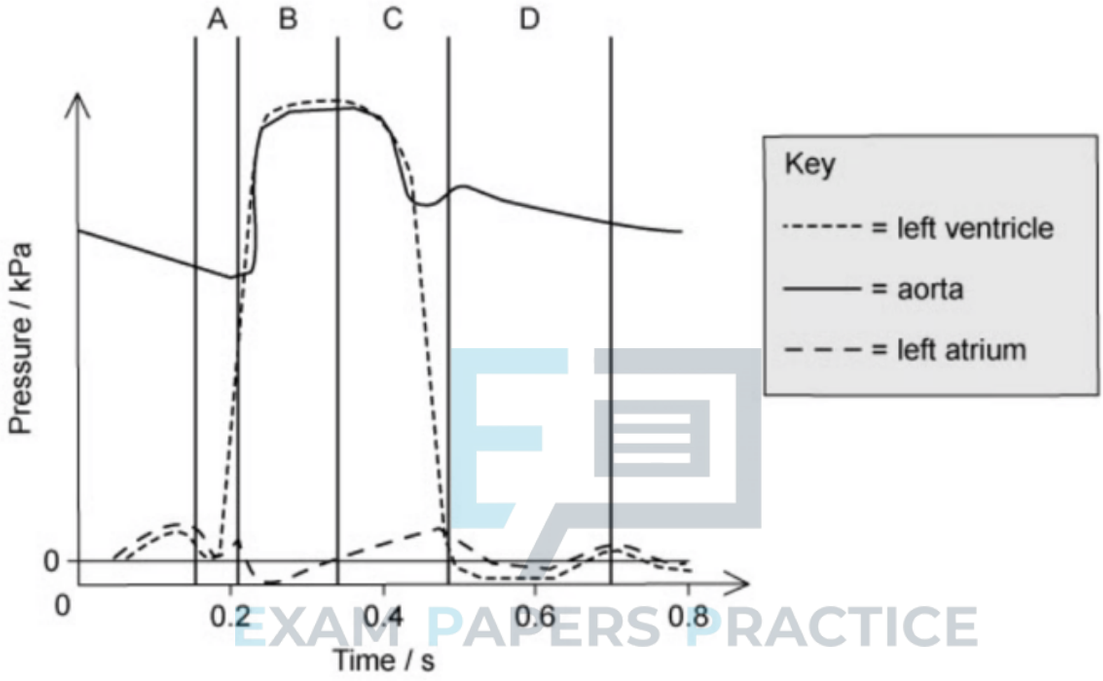
C $2 \rightarrow 1 \rightarrow 4 \rightarrow 3$

D $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$

Question 6

The graph below shows the pressure in different parts of the left side of the heart during one cardiac cycle.

At the end of which section in the graph (**A, B, C** or **D)** would the ventricle be full of blood?



[1 mark]

Question 7

The diagram below shows two cardiac cycles of a patient. The events of the cycle are placed next to a timescale.

Key:
AS = atrial systole
VS = ventricular systole

What is the patient's heart rate in beats per minute?

A 80

B 60

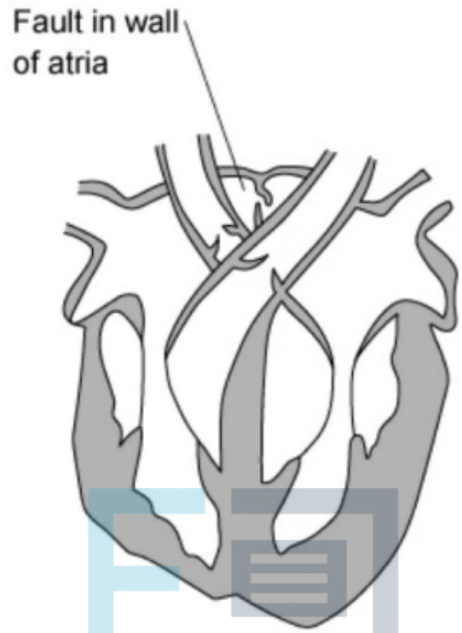
C 120

D 65

[1 mark]

Question 8

The diagram shows a fault in the wall of the atria.



Which of the following would describe the effect of this fault?

A Irregular heartbeat.

B Ventricular systole is delayed.

C Increased pressure in the pulmonary artery.

D Reduced oxygen saturation of haemoglobin.

[1 mark]

Question 9

Which of the following is **not** a contributing factor of atherosclerosis formation?

A Damage to the endothelium of the arteries.

B High levels of high density lipoproteins in the blood.

C Enlarged phagocytes covered in smooth muscle.

D Calcium ion deposition.

[1 mark]

Question 10

Which statement accurately describes the raising of heart rate by the cardioregulatory centre of the brain?

A Low blood pressure, high blood oxygen concentration, and high blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.

B Low blood pressure, low blood oxygen concentration, and low blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.

C High blood pressure, high blood oxygen concentration, and high blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.

D High blood pressure, low blood oxygen concentration, and low blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.

[1 mark]