Practice Question Set For A-Level
Subject : Biology
Paper-1 Topic:3 Organism and substance exchange

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

This question should be answered in continuous prose.

Quality of Written Communication will be assessed in these answers.

(a) Describe and explain **four** ways in which the structure of a capillary adapts it for the exchange of substances between blood and the surrounding tissue.

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(4)

(b) Explain how tissue fluid is formed and how it may be returned to the circulatory system.

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(6)

(Total 10 marks)

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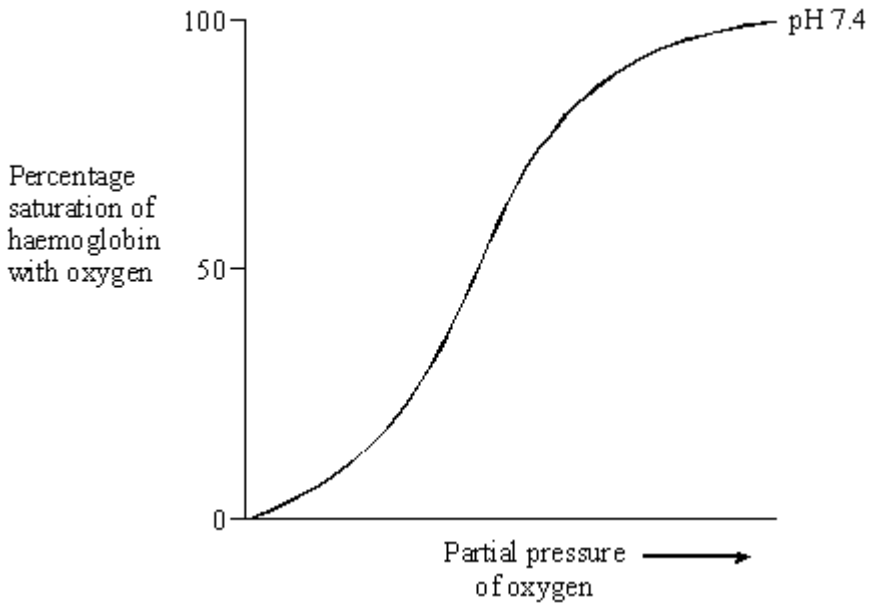
Q2.

(a) The graph shows a dissociation curve for human haemoglobin at pH 7.4. The position of the curve is different at pH 7.2.



(i) Sketch a curve on the graph to show the likely position of the dissociation curve at pH 7.2.

(1)

(ii) Explain how a change in pH from 7.4 to 7.2 affects the supply of oxygen by haemoglobin to the tissues.

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(2)

(b) Explain what causes the pH to be reduced from 7.4 to 7.2 in a tissue.

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(3)

(Total 6 marks)

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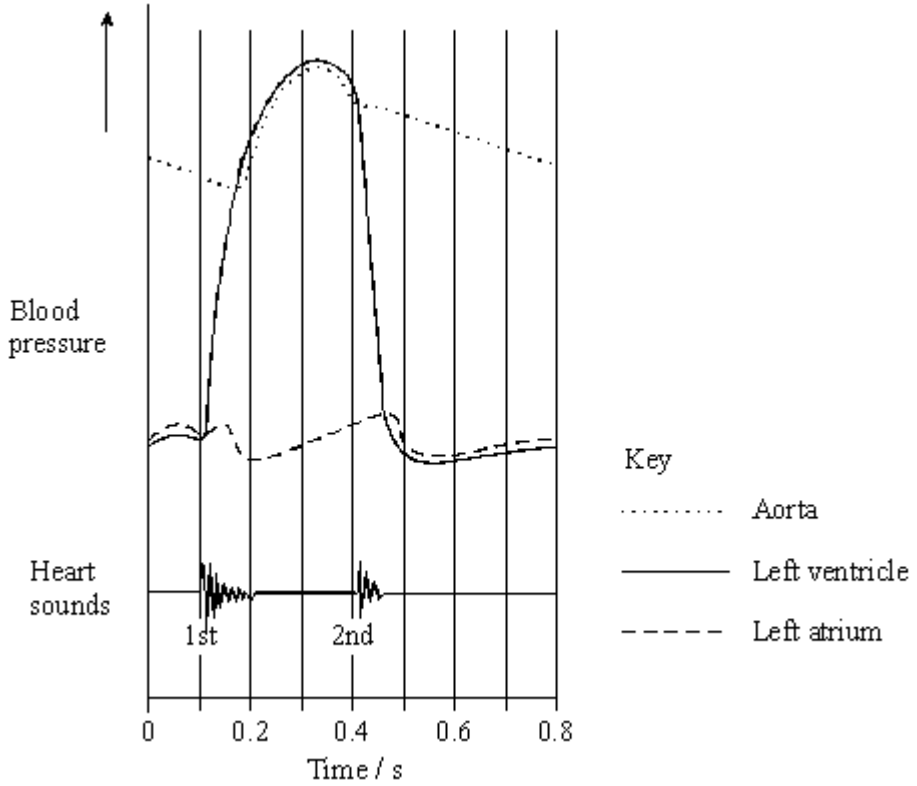
Q3.

The graph shows changes in pressure in the aorta, left ventricle and left atrium during one heart beat.



(a) The maximum pressure in the left atrium is lower than the maximum pressure in the left ventricle. What causes this difference in maximum pressure?

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(1)

(b) A stethoscope can be used to listen to the sounds made by the heart.

(i) What is the evidence from the graph that the first heart sound is caused by the atrioventricular valve closing?

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(1)

(ii) What causes the second heart sound? Give the reason for your answer.

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(2)

(Total 4 marks)

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