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 : 19 Marks **Time : 19 Minutes**

Q1.

(a) Describe the processes of facilitated diffusion and active transport.

Facilitated diffusion _____

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_____

Active transport _____

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_____

(3)

(b) What are microvilli?

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(1)

(c) Vitamin A is a fat-soluble substance.

Micelles are involved in the process of vitamin A absorption.

Describe the process of vitamin A absorption into cells lining the ileum.

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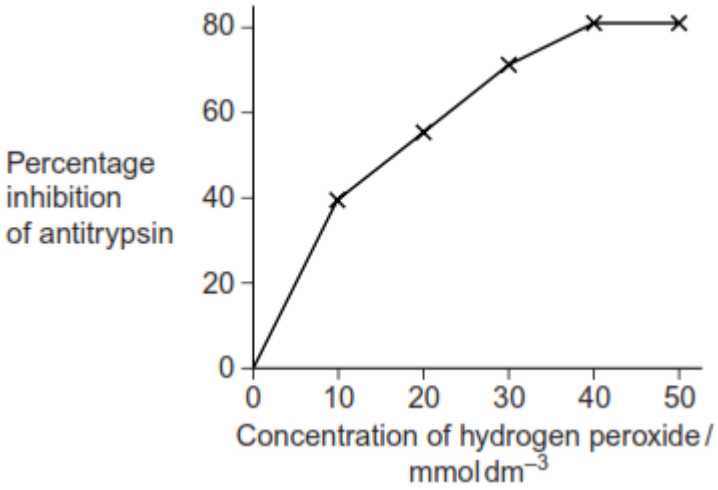
(3)

(Total 7 marks)

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Q2.

Alpha-1-antitrypsin is a protein that reduces the activity of enzymes that can damage lung tissue. Cigarette smoke contains hydrogen peroxide. Hydrogen peroxide reduces the activity of alpha-1-antitrypsin. Scientists investigated the effect of different concentrations of hydrogen peroxide on the activity of alpha-1-antitrypsin. The graph shows their results.



(a) (i) Hydrogen peroxide reacts with two amino acids in alpha-1-antitrypsin. Explain how this reduces activity of the protein.

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(2)

(ii) Explain the results shown in the graph.

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(2)

(b) Long-term smokers are often short of breath. Use this information to explain why.

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(2)

(Total 6 marks)

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Q3.

(a) Describe **two** differences between active transport and facilitated diffusion.

1. _____

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2. _____

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(2)

(b) Explain why molecules of oxygen and carbon dioxide are able to diffuse across membranes.

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(2)

(c) Explain why ventilation of the lungs increases the efficiency of gas exchange.

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(2)

(Total 6 marks)

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