DIGESTION REVISION MK

# WACE 2014 Question 41 (20 marks)

1. Outline the mechanical digestion of the fat found on a piece of bacon. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Any 3 of: | 1–3 |
| * Mechanical digestion is the physical breakdown of food (from large pieces to smaller pieces) * In the mouth * Saliva will lubricate food to assist breakdown * Teeth/cheeks/tongue used to breakdown bacon * Stomach churning |
| Any 3 of: | 1–3 |
| * In the duodenum and small intestine * Bile from the liver * will emulsify the fat * Breakdown large fat globules to smaller fat globules |
| **Total** | **6** |

1. Outline the chemical digestion of a carbohydrate found in a piece of bread. (9 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Chemical digestion is the chemical breakdown of food (from large molecules to smaller molecules) | 1 |
| These chemicals are called enzymes | 1 |
| Salivary amylase | 1 |
| Produced in the salivary glands/mouth | 1 |
| Carbohydrate macromolecule broken down to monosaccharides/disaccharides | 1 |
| In the duodenum and small intestine | 1 |
| Pancreatic amylase/trypsin | 1 |
| intestinal amylase/juice | 1 |
| Will breakdown the disaccharides to monosaccharides | 1 |
| **Total** | **9** |

1. Describe the features of the small intestine that maximise the process of absorption.

(5 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Any 5 of: | 1–5 |
| * Large surface area/length * Created by intestinal folds * Villi (also increase surface area) * Also microvilli/brush border * Rich blood supply * Lacteal in villi for fat absorption * Thin walls |
| **Total** | **5** |

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|  |  |
| --- | --- |
| **Description** | **Marks** |
| A: Oesophagus | 1 |
| B: Liver | 1 |
| **Total** | **2** |

1. Various functions of the digestive system are listed below. Match these functions with the labelled structures in the diagram above.

Some of the functions described may match more than one labelled structure. Make sure you list **all** the structures that perform that function. (4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Chemical digestion: C, D, E | 1 |
| Chemical digestion of protein: C, E | 1 |
| Absorption of nutrients and/or water: C, E, F | 1 |
| Bile production: B | 1 |
| **Total** | **4** |

1. Identify the structures labelled ‘W’ and ‘Z’. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| W: Right atrium | 1 |
| Z: Left Ventricle | 1 |
| **Total** | **2** |

1. Describe the role of the structure labelled ‘V’ on the diagram. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Prevents the backflow of blood/ maintains direction of blood flow | 1 |
| **Total** | **1** |

1. Compare the vessels labelled ‘X’ and ‘Y’ by completing the table below. (4 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | | | **Marks** |
|  | **Vessel X** | **Vessel Y** | 1–4 |
| **Structure** | Thick walled/ elastic/ Muscular/ small lumen/ aorta | Thin walled /large lumen/ contains valves/vena cava |
| **Function** | Carries blood away from heart/ takes blood to the body | Returns blood to the heart |
| **Total** | | | **4** |

1. Describe **three** events in the process of blood clotting. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Vasoconstriction of damaged vessels | 1–3 |
| Clotting factors triggered |
| Threads of insoluble protein/ fibrin creates a meshwork |
| Meshwork traps platelets/ protein/ sticks to blood vessel walls |
| Platelets stick together/ create plug/ clot |
| **Total** | **3** |