DIGESTIVE & EXCRETORY SYSTEM TEST

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ /54

|  |  |
| --- | --- |
| **1** | **A B C D** |
| **2** | **A B C D** |
| **3** | **A B C D** |
| **4** | **A B C D** |
| **5** | **A B C D** |
| **6** | **A B C D** |
| **7** | **A B C D** |
| **8** | **A B C D** |
| **9** | **A B C D** |
| **10** | **A B C D** |
| **11** | **A B C D** |
| **12** | **A B C D** |

**Part one – multiple choice**

1. Digestion begins in the mouth. Which of the following statements is INCORRECT?

a) The tongue aids in the digestion of food.

b) The saliva changes some of the starches in the food to sugar.

c) The tongue keeps the food in place in the mouth while the food is being chewed.

d) Saliva can react more easily with the food when chewed.

2. Our pharynx divides into two separate tubes: the trachea and the oesophagus. What prevents food from entering the trachea?

a) The uvula

b) The tongue

c) The trachea

d) The epiglottis

3. Where does the partly-digested food (in liquid form) go after it leaves the stomach?

a) The liver

b) The appendix

c) The duodenum

d) The small intestine

4. Digestion takes place in a long tube-like canal called the alimentary canal, or the digestive tract. Food travels through these organs in the following order:

a) Mouth, oesophagus, stomach, small intestine, large intestine and rectum

b) Mouth, oesophagus, stomach, large intestine, small intestine and rectum

c) Mouth, stomach, oesophagus, small intestine, large intestine and rectum

d) Mouth, stomach, oesophagus, small intestine, large intestine and rectum.

5. Another term for swallowing of food is:

a) Digestion

b) Ingestion

c) Degustation

d) Peristalsis

6. The removal of metabolic waste products from the body of a mammal is known as

1. Egestion
2. Excretion
3. Secretion
4. Defecation

8. Which of the following is **not** a function of the kidneys?

a) Regulating the composition of the body fluid

b) Regulating the water balance of the body

c) Regulating the body temperature

d) Removing the excess salts

9. Normally, concentrations of metabolically **important** substances are:

a) High in the glomerular filtrate and low in urine

b) Low in the glomerular filtrate but high in urine

c) High in both the glomerular filtrate and urine

d) Low in both the glomerular filtrate and urine

10. Homeostasis is the mechanism by which the body maintains:

a) A dynamic physiological state within an unlimited range.

b) A relatively stable internal environment, within limits.

c) A static physiological state with no deviation from pre-set points.

d) The lowest possible usage of energy.

11. What substance is produced by the liver?:

a) Amylase

b) Bile

c) Gastric Juice

d) Gallic Juice

1. The composition of blood **leaving the kidney** is compared with the blood entering it. Which of the following is most likely?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | GLUCOSE | CARBON DIOXIDE | UREA | OXYGEN |
| a. | Same | More | More | Less |
| b. | Slightly less | Less | More | More |
| c. | Slightly less | More | Less | Less |
| d. | More | More | Less | More |

**Part Two – short answer**

1a. What is the function of bile? (1 mark)

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1b. Where is this substance stored? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1 mark)

2. Explain what peristalsis is and where it occurs.

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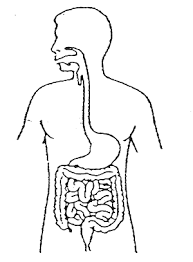
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1. marks)

3 On the diagram below: (5 marks)

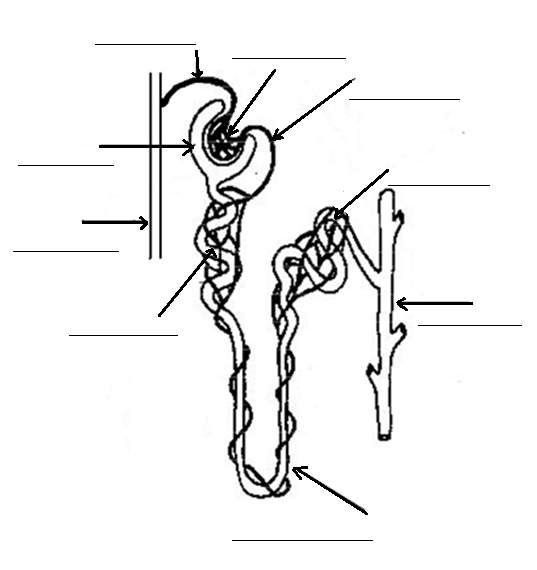
* 1. Locate the cardiac and pyloric sphincters
  2. Identify and name the region of lowest pH(most acidic)
  3. Identify and name the area where most absorption occurs

[](http://www.google.com.au/url?sa=i&rct=j&q=digestive%20system%20diagram&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=http://www.worldaccordingtomaggie.com/photographyylms/human-digestive-system-diagram-blank&ei=92tAVeufOueumAX704HwCw&bvm=bv.91665533,d.dGY&psig=AFQjCNF1eSW9YGd-H-Q7aJ8WuFhwGDOQGQ&ust=1430371661676906)d. Two organs/tissues that are responsible for the production of amylase are missing. Draw them in and name them.

4. Fill in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| Name of enzyme | Where it is made | What it acts on (substrate) | Product |
| Salivary amylase |  |  |  |
| Pancreatic lipase |  |  |  |
| Pancreatic protease |  |  |  |

(9 marks)

5.Label the following diagram of a nephron. (4 marks)

6. Why can some substances pass through the membrane of the glomerulus into the Bowmans capsule, but others cannot? Give 2 examples of substances that can pass through, and 2 substances that cannot.

(5 marks)

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7a. Where is **antidiuretic hormone** (**ADH**) produced and what does it do? (3 marks)

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7b. state two materials are actively reabsorbed in the proximal convoluted tubule? (2 marks)

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Part three – extended answer

The process of deamination occurs in the body. What is deamination? State two equations that show two steps in deamination. Where does it occur? Where are the waste products removed from the body? Why is it important to remove these wastes? Describe the process of protein deamination in the human body. You must include step by step details.

(10 marks)

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**Part one – multiple choice**

1. Digestion begins in the mouth. Which of the following statements is INCORRECT?

a) The tongue aids in the digestion of food.

b) The saliva changes some of the starches in the food to sugar.

c) The tongue keeps the food in place in the mouth while the food is being chewed.

d) Saliva can react more easily with the food when chewed.

2. Our pharynx divides into two separate tubes: the trachea and the oesophagus. What prevents food from entering the trachea?

a) The uvula.

b) The tongue.

c) The trachea.

d) The epiglottis.

3. Where does the partly-digested food (in liquid form) go after it leaves the stomach?

a) The liver.

b) The appendix.

c) The duodenum.

d) The small intestine.

4. Digestion takes place in a long tube-like canal called the alimentary canal, or the digestive tract. Food travels through these organs in the following order:

a) Mouth, oesophagus, stomach, small intestine, large intestine and rectum.

b) Mouth, oesophagus, stomach, large intestine, small intestine and rectum.

c) Mouth, stomach, oesophagus, small intestine, large intestine and rectum.

d) Mouth, stomach, oesophagus, small intestine, large intestine and rectum.

5. Another term for swallowing of food is:

a) Digestion.

b) Ingestion.

c) Degustation.

d) Peristalsis.

6. The removal of metabolic waste products from the body of a mammal is known as

1. Egestion
2. Excretion
3. Secretion
4. Defecation

8. Which of the following is **not** a function of the kidneys?

a) Regulating the composition of the body fluid

b) Regulating the water balance of the body

c) Regulating the body temperature

d) Removing the excess salts

9. Normally, concentrations of metabolically **important** substances are:

a) High in the glomerular filtrate and low in urine

b) Low in the glomerular filtrate but high in urine

c) High in both the glomerular filtrate and urine

d) Low in both the glomerular filtrate and urine

10. Homeostasis is the mechanism by which the body maintains:

a) A dynamic physiological state within an unlimited range.

b) A relatively stable internal environment, within limits.

c) A static physiological state with no deviation from pre-set points.

d) The lowest possible usage of energy.

11. What substance is produced by the liver?:

a) Amylase

b) Bile

c) Gastric Juice

d) Gallic Juice

1. The composition of blood **leaving the kidney** is compared with the blood entering it. Which of the following is most likely?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | GLUCOSE | CARBON DIOXIDE | UREA | OXYGEN |
| a. | Same | More | More | Less |
| b. | Slightly less | Less | More | More |
| c. | Slightly less | More | Less | Less |
| d. | More | More | Less | More |

**Part Two – short answer**

(9 marks)

1a. What is the function of bile?

Emulsification of fats (1 mark)

1b. Where is this substance stored? Gall bladder (1 mark)

2. Explain what peristalsis is and where it occurs. (2 marks)

Progressive waves of contraction and relaxation of 1

alimentary canal that pushes food along 1

3 On the diagram below: (5 marks)

Only get the mark if it is named and labelled

* 1. Locate 3 sphincters 2 marks 2 x stomach & anus
  2. Identify and name the region of lowest pH Stomach
  3. Identify and name the area where most absorption occurs Small Intestine

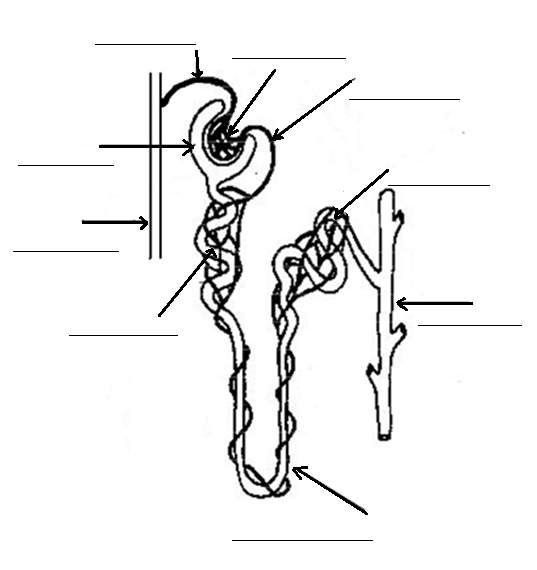
d. Two organs/tissues that are responsible for the production of amylase are missing. Draw them in and name them. Salivary Glands & Pancreas

4

|  |  |  |  |
| --- | --- | --- | --- |
| Name of enzyme | Where it is made | What it acts on (substrate) | Product |
| Salivary amylase | Salivary glands | Starch | disaccharides |
| Pancreatic lipase | Pancreas | Fats and lipids | Fatty Acids and glycerol |
| Pancreatic protease (trypsin) | Pancreas | Protein | Peptide chains (polypeptide) |

5Label the following diagram of a nephron. (4 marks)

Afferent Arteriole Glomerulus

 Efferent Arteriole

Glomerular Capsule

Distal Convoluted Tubule

Renal Artery

Proximal Convoluted Tubule Collecting Duct

Loop of Henle

6 Why can some substances pass through the membrane of the glomerulus, but others cannot? Give 2 examples of substances that can pass through, and 2 substances that cannot.

(5 marks)

1 some substances are too big to pass through the membrane

2 any two – H2O, glucose, amino acids,. Urea, sodium ions, chloride ions phosphate ions

2 any two – proteins, blood cells

7a Explain how blood in the glomerulus kept under a high pressure. (3 marks)

The afferent arteriole has a wider diameter (larger lumen) 1

Than efferent 1

Larger volume of blood entering glomerulus but slower to leave 1

b Why is it so important that this blood be kept under a high pressure? (2 marks)

Blood pushes against the wall of the capillaries 1

Forces small particles to move through capillary walls through membrane of Bowmans capsule 1

**Part three – extended answer**

Describe the process of protein deamination in the human body. You must include step by step details.

(10 marks)

1 proteins are made up of smaller molecules called amino acids

1 The body breaks down any amino acids it no longer needs by removing the amino group

1 process occurs in liver

1 wastes made through deamination have nitrogen in them, called nitrogenous wastes

1 Once the amino group is removed the rest is just carbon hydrogen and oxygen which is a carbohydrate and can be used to produce energy.

1 First one made is ammonia

1 ammonia is toxic

1 converts ammonia to urea

1 filtered out

1 in kidney

1 removed from body in urine & small amounts in sweat

(may skip one of the last 3 points and still get full marks)