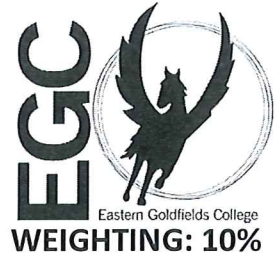


GENERAL HUMAN BIOLOGY – YEAR 11
TASK 6 – DIGESTION, NUTRITION AND EXCRETION TEST



NAME: Marking Key

DATE: _____ MARK: _____ / 57 = _____ %

MULTIPLE CHOICE SECTION

[10 MARKS]

Circle the correct answer (ie. a, b, c, or d) next to each question below:

1. This is the job of the digestive system.
 - a. To give the body shape
 - ☒ b. To take in and break down food for use in the body
 - c. To take in oxygen and give off carbon dioxide
 - d. To excrete metabolic wastes.

2. What organ produces bile in the digestive system?
 - ☒ a. Liver
 - b. Pancreas
 - c. Small intestine
 - d. Stomach

3. Most food is absorbed in the:
 - ☒ a. Small intestine
 - b. Large intestine
 - c. Mouth
 - d. Pancreas

4. A long tube that carries food from the mouth to the stomach.
 - a. Urethra
 - b. Trachea
 - c. Aorta
 - ☒ d. Oesophagus.

5. In the stomach which of the following statements is INCORRECT?
 - a. Protein is digested
 - ☒ b. Mucous allows the acid to act on the stomach wall.
 - c. Chyme is formed.
 - d. Acid kills the bacteria which enters the stomach.

6. The digestive system processes food into usable and unusable materials. The usable materials are sent to the body's cells as food. What happens to unusable materials?
 - a. It goes into the pancreas to await disposal.
 - b. It is excreted via the kidney.
 - ☒ c. It is eliminated by the rectum
 - d. It is absorbed in the small intestine.

7. Which list of functions describes those of the large intestine
- a. Absorb bile and useful enzymes, egest wastes, absorb amino acids and fatty acids
 - b. Remove water, absorb bacteria that produce vitamins, digest cellulose and starch
 - c. Break down indigestible substances, digest fats and cellulose, absorb useful substances especially water
 - d. Reabsorption of water, temporary storage of faeces, habitat for bacteria and breakdown of cellulose (plant material) by bacteria.
8. Examples of macromolecules that we ingest are:
- a. protein, amino acids, carbohydrates
 - b. Carbohydrates, simple sugar, glucose
 - c. Carbohydrates, proteins, lipids
 - d. Amino acids, glucose, fatty acids
9. What is the role of the kidney in the urinary system of mammals?
- a. To remove sugar from the body and to keep water in the body.
 - b. To remove water from the body and keep salt in the body.
 - c. To remove nitrogenous waste from the body and maintain water levels in the body.
 - d. To remove water from the body and maintain levels of nitrogenous substances in the body.
10. Why is there a large amount of protein found in the blood but none in the Bowman's capsule or urine?
- a. The proteins are converted to amino acids before they enter the capsule.
 - b. The proteins are too large to move through the capsule membrane.
 - c. The proteins are needed by the body and so are not filtered.
 - d. The proteins are converted by the capsule into amino acids.

END OF MULTIPLE CHOICE

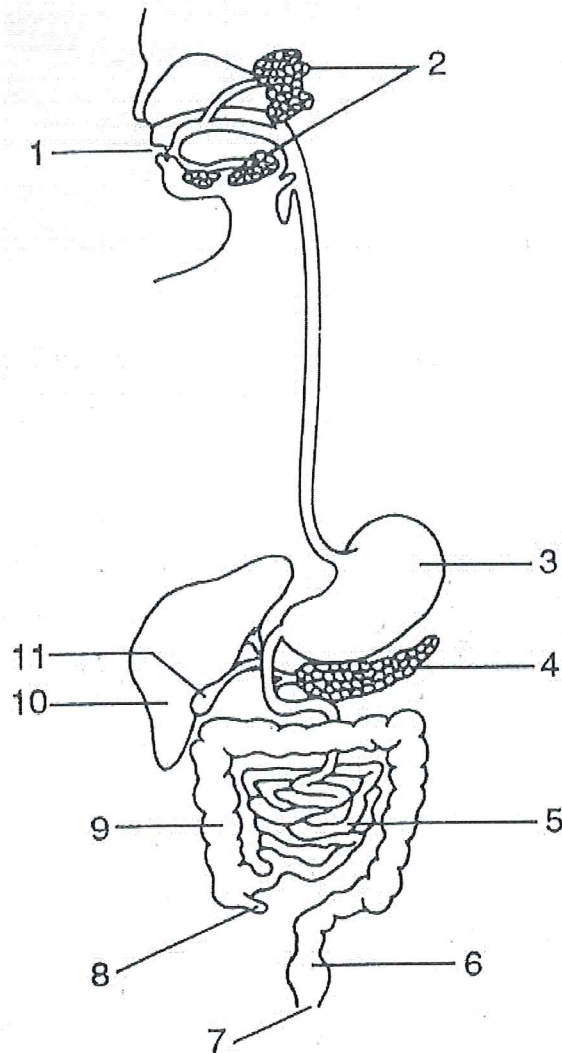
SHORT ANSWER SECTION

[41 MARKS]

Write your answers in the spaces provided below

You can use diagrams to support your answer

1. Label the following diagram in the spaces provided.



(3 marks)

1. Mouth
3. Stomach
4. Pancreas

9. large Intestine
10. Liver
11. Gall bladder

$\frac{1}{2}$ each

2. Below is a table with three different foods. Complete the table with the information required about each of the foods. (6 marks)

Food	Food group	What is the simplest form it is broken down into	Enzyme that breaks it down	Where in the body does it BEGIN to chemically digest
Meat	Protein	AA	Protease/pepsin	Stomach
Butter	Fat/lipid	Fatty acid/glycerol	lipase	Small Int
Fruit	Carb	Monosaccharides	Amylase	Mouth

3. The body uses both mechanical and chemical digestion to release nutrients from our food which will eventually be absorbed by our cells.

- a. Name three locations where mechanical digestion occurs. (3 marks)

Mouth
 Oesophagus
 Stomach
 Small Int

- b. Explain how mechanical digestion helps chemical digestion to occur? (2 marks)

① Break down } or Drawn
 ① ↑ SA

- c. Explain how enzymes function in the digestive system. (4 marks)

① lock + key } or Drawn
 ① Substrate bind
 ① Active site
 ① Product formed

d. State **one** factor and explain how it impacts enzyme function.

(2 marks)

① ^{pH} temp
conc
Co-factors } change shape Active Site

4. There are 5 essential nutrients that we get from the foods we eat. List the 5 essential nutrients in the space below.

(3 marks)

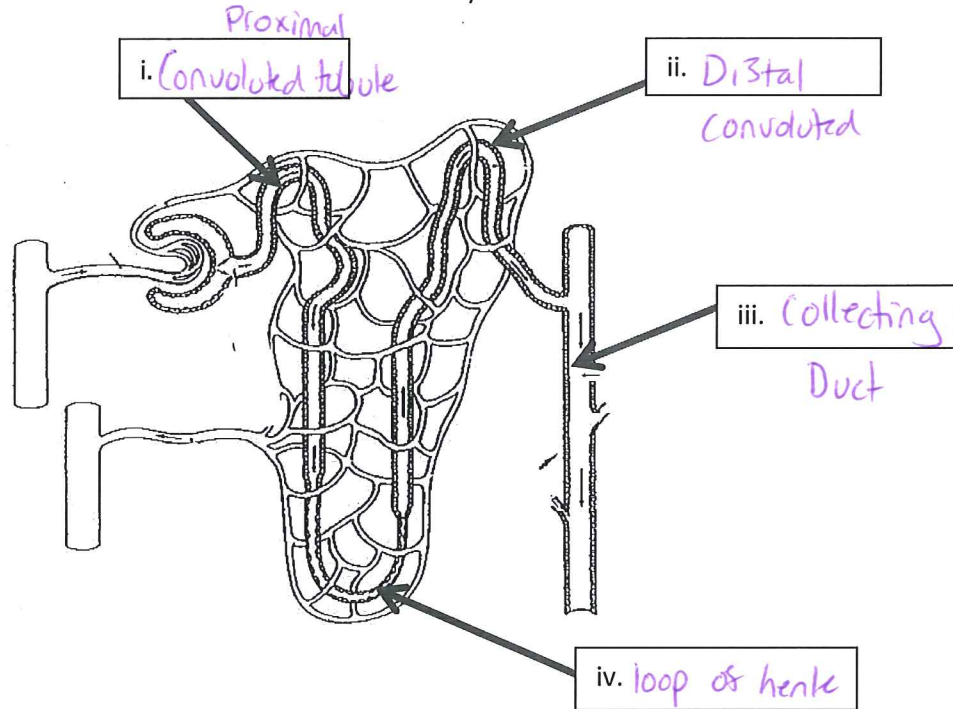
- 1- Water 4- Fat
- 2- Carb 5- Vit & minerals
- 3- Protein

5. For two of any of the above listed essential nutrients, state what their function in the human body is:

(4 marks)

- I. ① State nutrient
① Function
- II.

6. Below is a diagram of a structure found inside the kidney



- a. Name the above structure and explain the function of 1 of the above structures. (1 marks)

Nephron

- b. Label **two** structures on the above diagram (2 marks)

- c. Explain the three processes that occur in the above structure. (3 marks)

Filtration - Glomerulus ①

-> waste from blood

reabsorption - convoluted, loop or collecting ①

-> necessary materials

Secretion - toxic material ①
or large materials

7. The table below shows the concentrations of dissolved substances in the urine of a healthy person and the urine of a person with one type of kidney disease.

Substance	Concentration in grams per dm ³	
	Urine of a healthy person	Urine of a person with kidney disease
Protein	0	6
Glucose	0	0
Amino acids	0	0
Urea	21	21
Mineral ions	19	19

- a. Suggest an explanation for the difference in composition of the urine between the healthy person and the person with kidney disease. (2 marks)

① healthy capsule stop protein entering nephron

① Unhealthy - capsule not working, protein let through

- b. The person with the kidney disease could be treated either by using a dialysis machine or by a kidney transplant operation.

i. Describe each treatment.

(2 marks)

Dialysis - Filtration of blood

transplant - Donor kidney from living or dead person

II. Give 2 advantages and 2 disadvantages for **one** treatment.

(4 marks)

D - Adv		Dis	
-> Facilities av		Fixed Schedule	
- professionals		travel	long time
- other patient		Strict Diet	
- no partner or eq at home		medication	
T		hours to feel better	
- normal life		- need good tissue match	
- Dialysis exp		- expensive	
- extra years		- rejection	
		- religious	
		- last 10-15 yrs	

END OF SHORT ANSWERS

EXTENDED ANSWER SECTION

[6 MARKS]

8. You have been given a separate piece of paper that contains the suggested servings per day of each of the Five Food Groups and examples of what is considered one serving.

Using the information on the sheet, create a healthy food plan for a **14-18 year old male student**. The plan is for one day only.

6 - correct serves
variety food
healthy
correct age + gender

4 - slightly incorrect

2 - attempted w variety + healthy

0 - not attempted / no variety / healthy

