

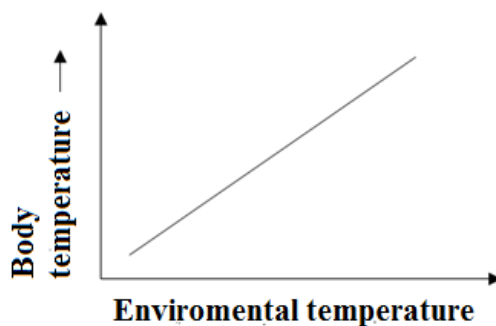
S.3 BIOLOGY ASSESSMENT TEST 1

TIME: 90 MINUTES

TOPIC: EXCRETION & HOMEOSTASIS

SECTION A

1. The main value of sweating in man is that during the process
 - A. Excess water is removed from the body
 - B. Latent heat of vaporization of water helps to cool the body ☐
 - C. Excess mineral salts are removed from the body
 - D. The body gets rid of excess nitrogenous wastes
2. Possession of a long loop of Henle is a characteristic of;
 - A. Desert animals
 - B. Amphibians
 - C. Fresh water animals
 - D. Mammals ☐
3. Which of the following organs is responsible for removing excess glucose from blood?
 - A. Spleen
 - B. Liver
 - C. Kidney
 - D. Gall bladder ☐
4. Reptiles are well adapted to living on land due to presence of
 - A. Dry epidermal scales and egg membranes
 - C. Shelled eggs and lungs
 - B. Lungs and egg membranes
 - D. Dry epidermal scales and gular crest ☐
5. In the body temperature regulation, vasodilatation
 - A. Allows more blood to enter the skin capillary network
 - B. Allows more urine to be secreted into the bladder
 - C. Allows less sweat to be secreted by sweat glands
 - D. Decreases heat loss by radiation ☐
6. The waste product urea is formed from
 - A. Cellulose
 - B. Protein
 - C. Glucose
 - D. Fat ☐
7. Figure 2 shows changes in the body temperature with environmental temperature in an animal.



Which one of the following could be the animal represented?

- A. Bird
 - B. Dog
 - C. Human
 - D. Frog☐
8. In which part of the kidney nephron does reabsorption of glucose occur?
 - A. Proximal convoluted tubule.
 - C. Descending loop of Henle.
 - B. Distal convoluted tubule.
 - D. Ascending loop of Henle.☐
9. Which **one** of the following stimulates the re-absorption of the water in the kidney?
 - A. Adrenaline
 - B. Antidiuretic hormone.
 - C. Thyroxine
 - D. Insulin☐
10. What is the function of contractile vacuole in the amoeba?
 - A. Storage of solid particles
 - C. Control of water content in the body
 - B. Storage of unwanted gaseous compounds
 - D. Digestion of food☐

11. The group of organs performing excretory functions is ☐
- A. Kidneys, lungs and skin. C. Skin, kidneys and pancreas
- B. Liver, kidneys and pancreas D. Lungs, spleen and gall bladder.
12. Excretory products of plants include ☐
- A. Oxygen and starch C. Oxygen and carbon dioxide
- B. Oxygen and urea D. Urea and carbon dioxide
13. Which one of the following responses is likely to occur in the human body when environmental temperature increases? ☐
- A. Vasodilation C. Contraction of the erector pili muscle
- B. Shivering D. Increased metabolism
14. In which part of the nephron does ultrafiltration take place? ☐
- A. Renal tubule B. Collecting tubule C. Glomerulus D. Renal vein
15. In which part of the nephron does reabsorption of sugars take place? ☐
- A. Distal convoluted tubule C. Proximal convoluted tubule
- B. Loop of Henle D. Collecting duct
16. Which one of the following is the source, target and effect of insulin on the human body? ☐
- | | Source | Target | Effects |
|---|----------|----------|-------------------------------------|
| A | Liver | Liver | Decrease amount of glucose in blood |
| B | Pancreas | Pancreas | Increase amount of glucose in blood |
| C | Liver | Pancreas | Decrease amount of glucose in blood |
| D | Pancreas | Liver | Decrease amount of glucose in blood |
17. Which of the following organs are used for excretion in insects and mammals respectively? ☐
- A. Flame cells and Kidney C. Malpighian tubule and Kidney
- B. Nephridia and Kidney D. Trachioles and Kidneys
18. Which of the following glomerular components increases in concentration along the rest of parts of the nephron? ☐
- A. Water B. Protein C. Glucose D. Urea
19. Which one of the following is the role of efferent vessel of the nephron? ☐
- A. Drains the glomerulus C. Filters the blood
- B. Supplies the glomerulus D. Purifies the blood
20. The following are physiological processes that occur in the body of a mammal. ☐
- (i) *elimination of urea.* (iii). *regulation of water in the body*
- (ii) *regulation of salts in the body* (iv). *deamination of excess amino acids.*
- Which of them are carried out by the kidney?
- A. (i), (ii) and (iv) C. (i), (ii) and (iii)
- B. (ii), (iii) and (iv) D. (ii) and (iii) only.

SECTION B

1. (a) (i) Give the main difference between cold-blooded (ectothermic) and warm –blooded (endothermic) animals. (02 marks)

(ii) Give one advantage that an endothermic animal has over an ectothermic animal. (02marks)

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(iii) Why are ectothermic animals said to be cold blooded? (02 marks)

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(b) Give four ways in which an ectotherm reacts to the lowering of external temperature. (04 marks)

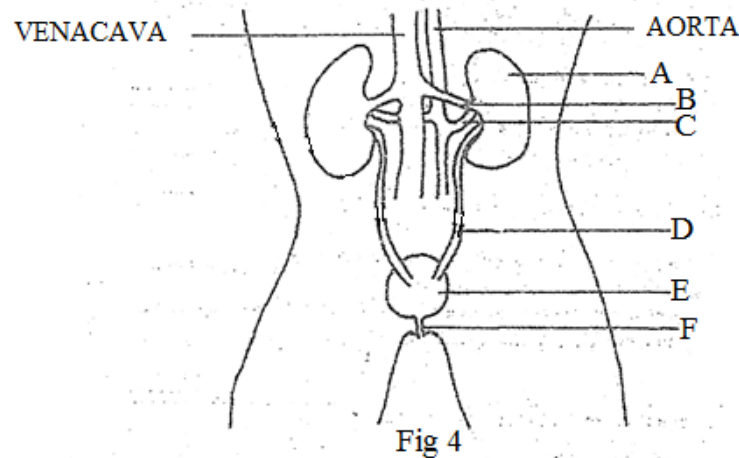
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2. Figure 4 below shows a mammalian urinary system.



(a) Name the parts labeled A – F (03 marks)

A.....	D.....
B.....	E.....
C.....	F.....

(b) Briefly explain why the concentration of urea in B is less than that in C. (03 marks)

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(c) What is the function of E? (01 mark)

.....

(d) A sample of urine was found to contain sugar.

(i) Suggest the types of sugar likely to be contained in the urine sample. **(01 mark)**

.....

(ii) What hormone is likely to be deficient in the person from whom the urine sample was taken? **(01 mark)**

.....

(iii) Name the disease that the person is likely to be suffering from. **(01 mark)**

.....

(c) Another individual was found to be passing out lot of urine but without sugar and complaining of thirst most of the time.

(i) Suggest a hormone that is deficient in this individual. **(01 mark)**

.....

(ii). Name the organ which produces the hormone referred to in (e) (i) above. **(01 mark)**

.....

3. (a) What is the excretory organ for nitrogenous wastes? **(02 marks)**

(i) in insects..... **(ii)** in an amoeba?.....

(b) Where is the organ located in the insect body? **(01 mark)**

.....

(c) (i) What nitrogenous compound is excreted by the organ in (b) above? **(03 marks)**

.....

(ii). Give a reason for the form of the excretory product you have mentioned in (c)(ii) above.

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(iii). Name any other excretory products in insects. **(01mark)**

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(d) What other function does the excretory organ in the amoeba perform? **(01 mark)**

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SECTION C

1. (a) Distinguish between Excretion and Osmoregulation. **(02 marks)**

(b) Give reasons why plants do not require special excretory organs as Man. **(04 marks)**

(c) Describe how water balance is maintained in Man. **(09 marks)**

END!!!

“Don’t ask what the world needs. Ask what makes you come alive, and go do it.”