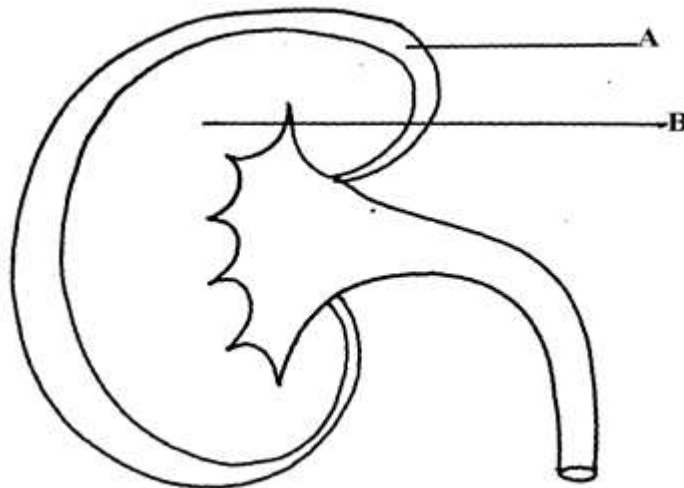


**FORM TWO BIOLOGY APRIL HOLIDAY ASSIGNMENT 2021.**

1. Explain the following: -
  - i) Fresh water fish excrete ammonia. 2mrks
  - ii) Glucose is absent in urine yet present in glomerular filtrate 2mrks
2. (a) State **two** structural modification of the kidneys of deserts animals like kangaroo rat. 2mrks  
 (b) Describe how ingestion of very salty food may reduce the amount of water excreted in urine. 2mrks
3. A student mixed a sample of urine from a person with Benedict’s solution and heated, the colour changed to orange.
  - a. What was present in the urine sample? 1mrk
  - b. What did the student conclude on the health status of the person? 2mrks
  - c. Which organ in the person may not be functioning properly? 1mrk
4. (a) If the human pancreas is not functional: - 2mks
  - (i) Name the hormone which will be deficient
  - (ii) Name the disease the human is likely to suffer from
  - (b) What is diuresis? 1mrk
5. Name the nitrogenous wastes excreted by the following organisms: - 3mrks

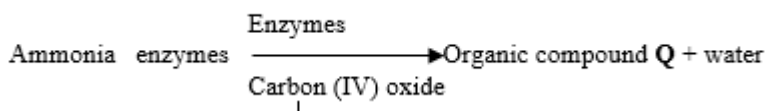
Animal	Nitrogenous Waste
Desert mole	
Marine fish	
Tilapia	

6. Explain why sweat accumulates on a person’s skin in a hot humid environment 2mrks
7. Distinguish between diabetes mellitus and diabetes insipidus. 4mrks
8. State **two** processes through which plants excrete their metabolic wastes. 2mrks
9. The figure below shows a vertical section through a mammalian kidney. 3mrks



- a. Label the parts A and B
  - b. Which part is the Bowman’s capsule found?
10. State **three** importance of Osmosis in plants 3mrks
11. A patient was complaining of thirst most of the times. A sample of the patient’s urine was found not to contain a lot of sugar but was dilute:- **3mrks**
  - a. Name the hormone the person’s body was deficient of

- b. Which gland produces the above hormone
- c. Name the disease that the patient was most likely suffering from
12. Discuss the role played by the liver in excretion? 10marks
13. (a) Distinguish between excretion and egestion 4marks  
 (b) State the importance of excretion in the bodies of living organisms. 3marks
14. The equation below represents a metabolic process that occurs in a certain organ in the mammalian body: - 6marks



- a. Name the process represented in the equation.
- b. Name the organ in which the process occurs.
- c. Why is the process important to the mammal?
- d. Identify the organic compound **Q**.
- e. Explain the source of ammonia in the organ named in (b) above.
- f. What happens to organic compound **Q**?
15. How does an Endotherm respond to both heat gain and heat loss? 5marks
16. The diagram below represents a mammalian nephron.



- a. Name the: (i) Structure labelled **P** 1mark
- b. State the structural modifications of the part labelled **Q** for 4marks  
 (i) Desert mammals  
 (ii) Fresh water mammals
- c. (i) Name **one** substance present at point **R** but absent at point **S** in a healthy mammal. 1mark

(ii) The appearance of the substance you have named in (c)(i) above is a symptom of a certain disease. Name the disease 1mrk

17. Describe how the mammalian skin regulates body temperature .10mrks
18. Give the differences between aerobic and anaerobic respiration. 10mrks
19. Discuss the importance of anaerobic respiration .10mrks