**OPENER EXAM**

**TERM 1 - 2023**

**BIOLOGY FORM 3**

**50 MARKS.**

**TIME 1HR;30 MIN.**

**Name………………………………………………Adm no……………………Class**

1. a). State **two** functions of the kidney 2MRKS

b). Name **two** substances that are not found in urine of a healthy person 2MRKS

(c) Name **two** diseases that affect the kidney 2MRKS

1. State **three** structural modification of the kidneys of deserts animals like kangaroo rat.

3MRKS

(b) Describe how ingestion of very salty food may reduce the amount of water excreted in urine. 2MRKS

1. A student mixed a sample of urine from a person with Benedict’s solution and heated, the colour changed to orange.
2. What was present in the urine sample? 1MRK
3. What did the student conclude on the health status of the person? 1MRK
4. Which organ in the person may not be functioning properly? 1MRK

1. Distinguish between diabetes mellitus and diabetes inspidus 2MRKS
2. Name **three** processes through which plants excrete their metabolic wastes.

3MRKS

1. The equation below represents a metabolic process that occurs in the mammalian liver: Amino acids organic compound + urea
2. Name the process 1MRK

(b) What is the importance of the process to the mammals? 2MRK

1. An experiment was carried out to determine the effect of drinking on excess amount of water on the flow of urine. A person drinks one litre of water and urine was collected at intervals of 15minutes.

The results were as shown below:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time in minutes | 0 | 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 |
| Urine output ml/min | 1.6 | 1.6 | 1.6 | 5.4 | 9.0 | 9.0 | 7.6 | 3.0 | 0.8 | 0.8 |

1. Plot a suitable graph to represent urine output with time. 7MRKS

(b) Explain the rate of flow of urine between the following times;

(i) 15 and 60minutes. 3MRKS

(ii) 60 and 75minutes. 3MRKS

(iii) 75 and 135 minutes. 3MRKS

1. Name **two** hormones responsible for regulation of relative amount of salts and water in man**. 2MRKS**

1. Describe how the mammalian skin regulates body temperature 10 MRKS