**Kenya Certificate of Secondary Education 2019**

**231/ 3 BIOLOGY -Paper 3**

**(Practical)**

**END TERM 12019-**1 ¾ hours

**Name …………………………………………….……… Index Number…………………………..**

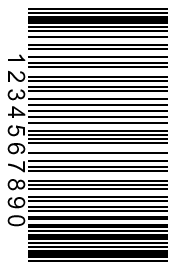
**Candidate’s Signature ………………….…...……….. Date ……………………………………**

***Instructions to candidates***

1. *Write your name and class in the spaces provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *Answer* ***ALL*** *questions in the spaces provided.*
4. *Additional pages* ***MUST NOT*** *be inserted.*
5. *Candidates will be penalized for incorrect spelling especially of technical terms and for use of slovenly language*
6. *You are required to spend the first* ***15 minutes*** *of the* ***1¾hours*** *allowed for this paper reading the whole paper carefully before commencing your work.*
7. ***This paper consists of 5 printed pages.Candidates should check the question paper to ascertain that ALL the pages are printed as indicated and no questions are missing***

**For Examiner’s Use Only**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum**  **Score** | **Candidate’s**  **Score** |
| **1** | **14** |  |
| **2** | **13** |  |
| **3** | **13** |  |
| **Total score** | **40** |  |

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**Kenya Certificate of Secondary Educations**

Turn over

1. You are provided with 10% glucose solution and substance **labeled Y**. Also provided is a solution labeled **X.** You are to investigate the reaction between the glucose solution and **substance Y**. Measure 20.00cm3 of the glucose solution and transfer it to the boiling tube provided. Transfer all the **substance Y** provided into the solution in the boiling tube. Tightly fit the rubber bung carrying a delivery tube to the boiling tube. Place the boiling tube in a water bath kept between 35 – 380 c. Measure 1.0. Cm3of **solution X** and transfer to a test tube. Connect the delivery tube so that the open end enters the **solution X**. Allow the set – up to stand for about 30 minutes and during this time observe the changes occurring in the boiling tube and in the test tube having **solution X.**

a) Fill the table below (2 marks)

|  |  |
| --- | --- |
| **Tube** | **Observations** |
| **Boiling Tube** |  |
| **Test Tube** |  |

b) What conclusions can your draw from your observations in the test tube? (2 marks)

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c) Name the process that took place in the test tube (1 mark)

……………………………………………………………………

d) Shake the contents of the boiling tube and using a dropper remove a little of the contents. Transfer a drop to a glass

slide; add two drops of methylene blue stain. Cover with a cover slip and observe using a microscope of x10 or x15 eye piece lens.

(i) Draw and label the **substance Y** which is in the slide (4 marks)

(ii) What is the possible identity of substance Y (1 mark)

……………………………………………………..

e) Why was the temperature of the water bath kept between 35 – 380c (1 mark)

…………………………………………………….

f) If the experiment was done under the following conditions, suggest, giving reasons the expected results.

(i)Water bath was kept at 1000c (2 marks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

g) From the microscope

(i) Name the part **labeled Q.** (1 mark)

……………………………………..

(ii) Give the function of part labeled P. (1 mark)

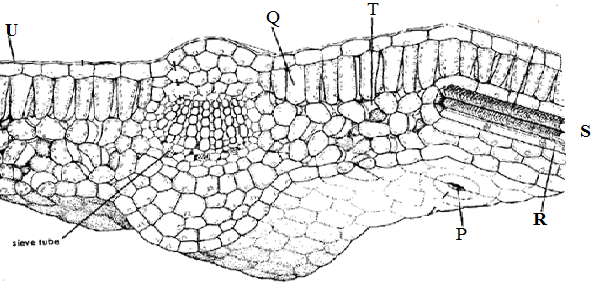
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h) Name the form in which substance Y stores its excess glucose (1 mark)

…………………………………………

2. The photomicrograph below shows the arrangement of different types of cells and tissues in a certain living

organism. Study it carefully and answer the questions that follow.



3rd cell

1. (i) From what part of the plant was the photograph obtained? (1mark)

…………………………………………………………

(ii) Name the parts labeled: - P, Q, U,T and U (5marks)

P……………………………………………………………………………

Q……………………………………………………………………………

U…………………………………………………………………………

T………………………………………………………………………………

U………………………………………………………………………………

(iii) Give two major components that make up structure S. (2marks)

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(iv) State the function of the part labeled Q and **two** adaptations to its function. (2marks)

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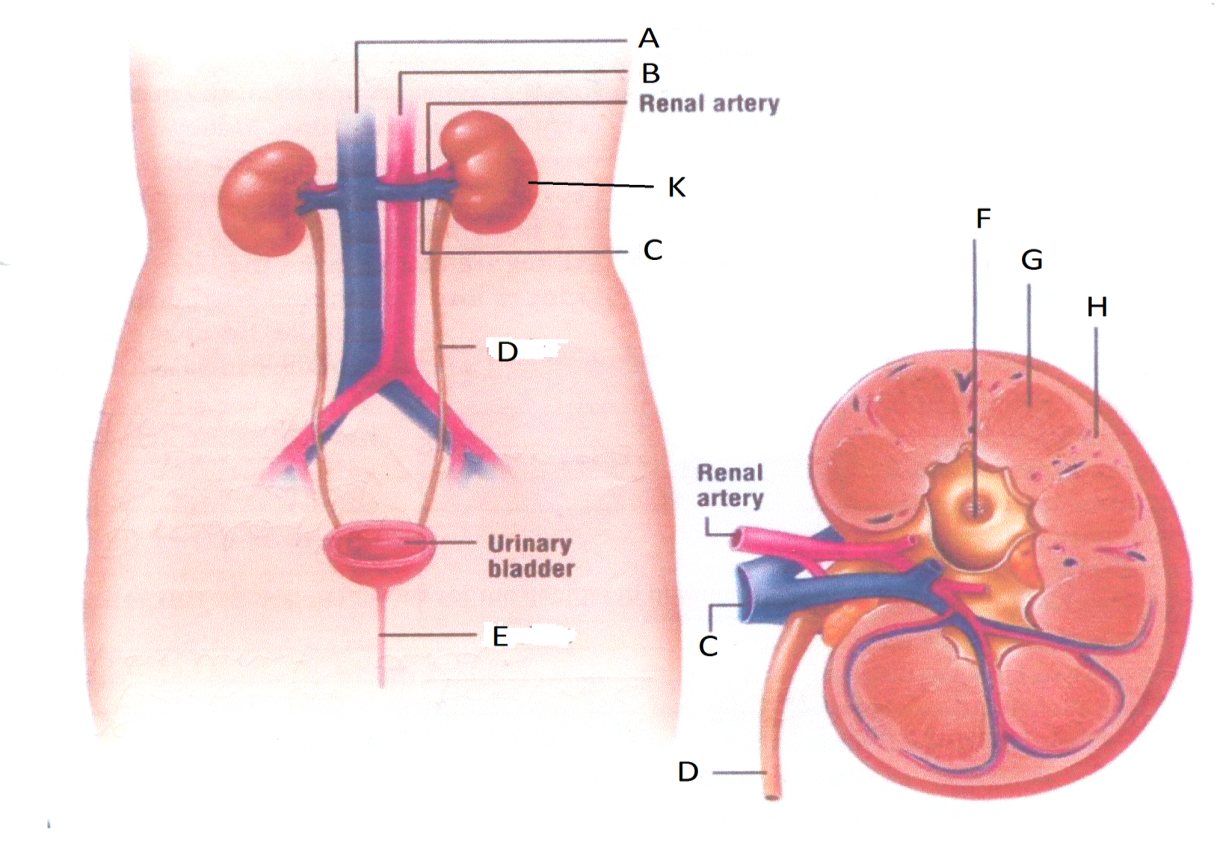
(v) list t**hree**environmental factor which regulates the function of the part labeled P. (3mark)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

1. Measure the length of the third (3rd) cell at the right side of structure labeled Q on the photograph whose magnification is X5000. What is the actual length of the cell in micrometers (µm)? Show your working. (2marks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

1. The photograph below represents human male urinary system. Study it carefully and answer the questions that follow.



*Longitudinal Section of***K**

1. State **two** functions of the part labeled K. (2 marks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

1. Name the parts labeled **A, B, C, D, F, G, and H.**  (7 marks)

A………………………………………

B………………………………………

C……………………………………..

D…………………………………….

F……………………………………..

G………………………………………

H………………………………………

1. State the functions of each of the following parts;
2. Renal artery (1 mark)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Urinary bladder (1 mark)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Part labeled **E** (1 mark)

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