**NAME…………………………………....................SCHOOL…………………**

**ADMNO:………....... FORM……… DATE:………………**

**BIOLOGY FORM TWO**

**TIME: 2 HOURS**

**AMUKURA PARISH EXAMINATION**

**JOINT EVALUATION TEST-2021**

**KENYA CERTIFICATE OF SECONDARY EDUCATION (K.C.S.E)**

**INSTRUCTIONS TO CANDIDATES**

**1. Write your name and admission number in the spaces provided above.**

**2. Answer ALL questions in the spaces provided**

**FOR EXAMINER’S USE ONLY**

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| QUESTIONS | MAXIMUM SCORE | CANDIDATES SCORE |
| 1-17 | 80 |  |

1. Name the most appropriate tool that Biology students can use for collecting:

i. Crawling animals (1mk) ………………………………………………………………………………………………..

ii. Flying insects (1mk) …………………………………………………………………………………………………

2. State the name given to the study of:

a) Cells (1mk)

………………………………………………………………………………………………

b) Classification of living organisms ………………………………………………………………………………………… (1mk)

3. a) Define the term species ……………………………………………………………………………………… (2mks) ………………………………………………………………………………………………………..…………………….........................................................................................................

b) A Tiger is known as Panthera Tigris

i). Identify two mistakes made in writing the scientific name (2mks) ………………………………………………………………………………………………………………………………………..………………………………………………………………………………………………………………………………………………………………. ……….........................................................................................................................................

ii). Explain why a Leopard and a tiger cannot breed yet they belong to the same genus (1mk) ……………………………………………………………………………………………………………………………………………………………………………………………………..……………………………………………………………………………………………………………………………………………………………………………………………………

4. A cell was magnified 200 times using a light microscope whose eye-piece lens magnification was X10. What was the magnification of the objective lens(2mks)

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

5. Explain the following terms:

a).Diffusion (2marks)

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b).Osmosis (2marks)

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c).Active transport (2marks)

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d). Plasmolysis (2marks)

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6. i) Name the carbohydrates that is: (3mks)

a) Found in abundance in mammalian blood ………………………………………………………………………………………………...………………………………………………………….………………………………………

b) Stored in mammalian liver ………………………………………………………………………………………………………………………………………………………………………………..……………………

c) Stored in plant seeds ………………………………………………………………………………………………...…………………………………………………………………………………………………

ii) List **TWO** importance of water in living organisms (2mks) ………………………………………………………………………………………………...………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………...…………………………………………………………………………………………………………………………………………………………………………………

7. The enzyme pepsin and trypsin are secreted as inactive precursors:

a) What are the names of the precursors (2mks)

Pepsin ………………………………………………………………………………………………...

Trypsin ………………………………………………………………………………………………...

b) Why are they secreted in an inactive form (1mk) ………………………………………………………………………………………………...……………………………………………………………………………….…………………………………………………………………………………………………………………………………………………………………………………………………………………….

8. State TWO structural and TWO environmental factors that affect the rate of transpiration

a) Structural (2mks) .…………………………………………………………………………………………………………..………………………………………………………………………………………... ……………………………………………………….…………………………………….…........................................................………………………………………………………………..…………………………………………………………………………………………………..

b) Environmental (2mks) …………………………………………………………………….……………………….…...............................................………………………………………………………………..……………………………………………………………………………………………………….. ……………………………………………………….…………………………………….…....

9. The diagram below is a transverse section of a certain part of a dicotyledonous plant.



a) Which part of the plant was the section made from (1 mk) …………………………………………………………………….……………………….….................................................………………………………………………………………..

b) Give reason for your answer (1 mk) …………………………………………………………………….……………………….……………………………………………………………. ………………………………………………………………..………………………………………………………………………………………….

c) State the functions of the parts labelled A and C (2mks) A…………………………………………………………………….……………………….………………………………………………………………………………………………….. .………………………………………………………………..………………………………………………………………………………………………………………………………..

C…………………………………………………………………….……………………….……………………………………………………………………………………………………. .………………………………………………………………..…………………………………………………………………………………………………………………………………..

10. Give an example of an animal with: (2mks)

a) Open circulatory system …………………………………………………………………….…………………………

d) Closed circulatory system …………………………………………………………………….……………………………

11. The diagram below shows the internal structure of a mammalian heart



a) Using arrows show the direction of blood flow in and out of the heart (2mks)

b) Name the parts labelled: (3mks) B…………………………………………………………………….……………………………………………………………………................................................................................... C…………………………………………………………………….…………………………………………………………………………………………………………………………...

G………………………………………………………………………………………………………………………………………………………………………………………………...

c) The muscular wall of chamber D is at least three times thicker than the wall of chamber E.

give a reason for this difference (1mk) …………………………………………………………………….……………………….….....................................................………………………………………………………………..……………………………………………………………………………………....................

d) Name two special characteristics of heart muscles which distinguish it from other parts of Muscles (2mk)

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

e) In what way does the artery labelled G differ from other arteries in the body (1 mk) …………………………………………………………………….……………………….………………………………………………………………………………………………………. ………………………………………………………………..…………………………………………………………………………………………………………………………………….

12. The figure below is a diagram of a potometer



a)What is it used for? (1mk)

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

b) State one precautions which should be taken when setting up a potometer (1 mk) …………………………………………………………………….……………………….………………………………………………………………………………………………………. ………………………………………………………………..……………………………….

c) The rate of transpiration was determined under normal conditions in the laboratory. Giving

reasons, explain the differences you would expect if the measurements were repeated under

the following conditions.

i. The shoot is placed close to the heat source (2mks)

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

ii. Some leaves are removed …………………………………………………………………….…………………………………….…...………………………………………………………………..……………………………………………………………………………………………………………………….. ……..……………………………………………………………………………………………

iii. The shoot is placed in a current of air created by a fan (1mk) …………………………………………………………………….……………………………………………………………………….…...………………………………………………………………..………………………………………………………………………………. …………………………………………………………………………………………………

13. The figure below is a diagram of a vertical section of a mammalian tooth



a) Name the parts labelled A – D : (4mks)

A………………………………………………………………………………

B……………………………………………………………………………….

C ……………………………………………………………………………..

D……………………………………………………………………………….

b) How are the structures labelled A and D adapted to their functions (2mks)

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

14. The figure below is a diagram of an intestinal villus. Study it and answer the questions that follow.



a) Name the parts labelled A – D (2mks)

A………………………………………………..

B………………………………………………..

C ………………………………………………..

D……………………………………………..…

b) What is the importance of the villi? (1 mk) …………………………………………………………………….……………………….…...................................................….………………………………………………………..…………..………………………………………………………………………….……………………………………………………………………………………………………………………

c) What is the function of the part labelled F (1 mk) …………………………………………………………………….……………………….………….………………………………………………………..…………..……………………….

…………………………………………………………………………………………………

d) Most of absorption of digested food in mammals takes place in the ileum. In what ways is it adapted for this function (4mks) …………………………………………………………………….……………………….…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

e) Name two nutrients that are absorbed in mammalian gut without chemical digestion (2mks)…………………………………………………………………….……………………….….............................................….………………………………………………………..…………..……………………………………………………………………….……………………….……………………………………………………………..………..…………………

15. Identify the structure of the cell that performs the following functions: (3mks)

i) Synthesis of ribosome

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

ii) Regulate exchange of substances in and out of the nucleus

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iii) Formation of spindle fibres

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

16. Explain THREE adaptations of the red blood cells to its functions (3mks)

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17.Describe how digestion takes place in the mouth (10mks) **…………………………………………………………………….……………………….…...…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………....................................**

**TABLE OF SPECIFICATION**

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| **QUESTION** | **KNOWLEGE** | **COMPREHENSION** | **APPLICATION** | **ANALYSIS** | **EVALUATION** | **SYNTHESIS** |
| **1** |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |
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