Name..... Index Number.....

Student's Signature.....

231/1

BIOLOGY

PAPER 1

JUNE, 2014

2 HOURS

KASSU JOINT EXAMINATION

Kenya Certificate of Secondary Education

BIOLOGY

Paper 1

TIME: 2 Hours

Instructions to Candidates

- *Write your name, admission number, class and signature in the spaces provided at the top of the page.*
- *Answer **all** the questions in the spaces provided in this paper.*

For Examiners Use Only

SECTION A	MAXIMUM SCORE	CANDIDATE SCORE
Question		
1 – 25	80	

1. (a) What is a teat pipette used for in Biology Laboratory Lesson? (1 mrk)

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(b) Give the name of a reagent that is used to test substances and at the same time used as a stain in the laboratory. (1mrk)

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2. A name of a certain garden plant is Duranta Repens

i. What is the meaning of repens? (1mrk)

.....

ii. Identify one mistake shown by the written name. (1 mrk)

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iii. Distinguish between a *genus* and a *Species* as Taxa used during classification of the Organism. (2mrks)

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3. A form one student observing Onion epidermal cells under the low power objective counted 5 cells on a field of view measuring 5mm

(a) Estimate the size of one cell. (1 mrk)

(b) If the eye piece magnification used was × 10 and that of the objective lens was × 10. What was the magnification of the microscope? Show your working. (2 mrks)

(c) Estimate by approximation the Number of cells that would be observed if the objective lens magnification was changed to x 40 (1mrk)

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(d) What is the role of centriole in animal cells? (1mrk)

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.....

4. Explain the following statements:

i. The action of ptyalin stops at the stomach. (1mrk)

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ii. The small intestines contain Villi. (1mrk)

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iii. High temperatures stop enzyme action. (1 mrk)

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iv. Lack of magnesium leads to yellowing of leaves in plants. (2 mrks)

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v. The thyroid glands swell, in some individuals (1 mrk)

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5. Name one cofactor and one co-enzyme required for a blood clotting process to be normal.

a) Co-factor - ..... (1mrk)

b) co-enzyme - ..... (1mrk)

6. What is counter current Mechanism in a Tilapia fish? (2mrks)

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7. State three adaptations of the Red blood cell to its function. (3 mrks)

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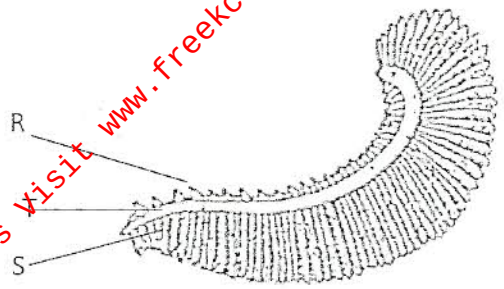
.....

.....

8. The diagram below represents an organ from a finned bony fish. Study it and answer the question that follows



S

i. Identify the organ. (1mrk)

.....

ii. State three adaptations of the part labeled S to its functions. (3 mrks)

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.....

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9. (a) State the importance of pleural fluid in the lung of a mammal. (2mrks)

.....

.....

.....

(b) What function does the cilia of the trachea play during gaseous exchange in a mammal? (1 mrk)

.....

(c) What significance does mucus offer a mammal during gaseous exchange? (1 mrk)

.....

10. The equation below represents a process that take place in plants and animals

$C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O$

(a) Name the process. (1 mrk)

.....

(b) State two requirements necessary for the process (a) above to process at maximum rate. (2 mrks)

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.....

(a) What is the role of Cristae in the process above? (1 mrk)

.....

(b) In which part of the cell does glycolysis and Krebs cycle occur? (2 mrks)

Gycolysis - .....

Krebs cycle - .....

11. State the role of each of the following components of the skin. (2 mrks)

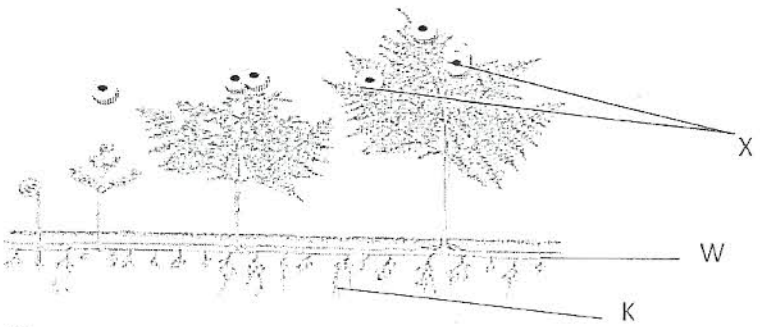
Sebum.....

.....

Melanin.....

.....

Study the diagram below and answer the questions that follows



i. Name parts. (2mrks)

W .....

K .....

ii. Name the division of Kingdom plantae the diagram represent. (1 mrk)

.....

Iii. Give the identity of X and state its function (2 mks)

Identify of X - .....

Function - .....

12. State three Biotic factors in an ecosystem. (3 mks)

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.....

.....

13. Name two specific bacteria involved in denitrification process in a Nitrogen cycle. (2 mrks)

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14. Define:

(a) Biosphere (1 mrk)

.....

(b) Ecological Niche (1 mrk)

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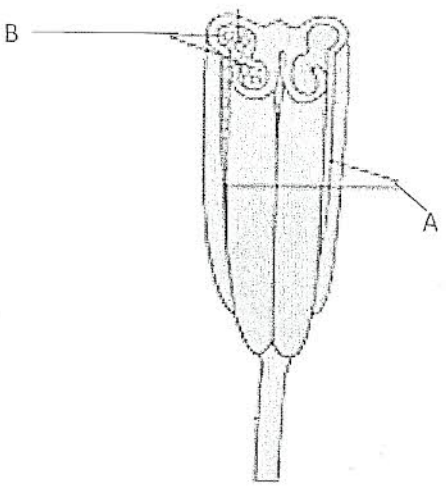
15. The diagram below represents a male reproductive transverse section structure in plant



i. Name structures (2mrks)

A - .....

B- .....

ii. Name the type of cell division taking place in structure A (1 mrk)

.....

iii. State Two significance of the named type of cell division in (ii) above in Sexual Reproduction. (2mrks)

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16. State Three applications of Genetic in our day to day life. (3 mrks)

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17. Give the full Name of the abbreviation. DNA (1 mrk)

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18. State the Three theories advanced to support the origin of life. (3 mrks)

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19. Name three types of Fossils (3 mrks)

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20. Name a chemical substance required for transmission of impulse in a synapse. (1 mrk)

.....

21. State the functions of the following structures in neuron.

i. Node of Ranvier (1 mrk)

.....

ii. Myelin sheath (1 mrk)

.....

22. Name the chemical substances involved in thickening of the following support tissues in plants

i. ..... (1mrk)

ii. ..... (1mrk)

23. State the Number of the following vertebra in a mammal

i. Cervical Vertebrae (1mrk)

.....

ii. Lumbar Vertebrae (1mrk)

.....

24. State three functions of Obturator Foramen in the pelvic girdle in a mammal. (3mrks)

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25. What is a

(i) tendon? (1mrk)

.....

(ii) ligament? (1 mrk)

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