**NAME:……………………………………………………… INDEX NO:……………………**

**SCHOOL:………………………………………………….. DATE: ...................................... SIGN:…………………**

**231/1**

**BIOLOGY**

**PAPER 1**

**TIME: 2 HOURS**

**ELERAI PRE – MOCK EXAMINATIONS - 2016**

***Kenya Certificate of Secondary Education (K.C.S.E)***

***BIOLOGY PAPER 1***

***2 HRS***

**INSTRUCTIONS TO CANDIDATES**

* *Write your name, index number, school 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**

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| --- | --- | --- |
| **SECTION A** | **MAXIMUM SCORE** | **CANDIDATE SCORE** |
| **Question** |  |  |
| **1 – 25** | **80** |  |

*This paper consists of 7 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.*

1. Name the branch of Biology that deals with the study of:- (2marks)

( a).Organisms in relation to their surroundings ………………………………………………………………………………………………

(b) Inheritance and variation ……………………………………………………………….……………………………………

2.State the importance of classification (3marks) ………………………………………………………………………………………………………………………………………………………………………………………………………

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3.Study the equation below and answer the questions that follow

2H2O2 enzyme x 2H2O + O2

(a)Name the enzyme X in the equation above (1mark) ……………………………………………………………………………………………………

(b) State the importance of the above reaction in living things (1 mark) …………………………………………………………………………………………………………………………………………………………………………………………………………

4. The diagram below shows a section of a kidney tubule

B

A

E

(a)Name the process that occurs in section E (1mark) ……………………………………………………………………………………………………

(b)Name two parts of the kidney nephron whose action is influenced by antideuretic hormone …………………………………………………………………………………………………………………………………………………………………………………………………………

5.Name the part of the microscope that (2marks)

(a)Regulate amount of light passing through the condenser

…………………………………………………………………………………………

(b)Moves the body tube a short distance to bring the image into a sharp focus

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

6. The set up below shows an experiment. Diagram A shows the set up at the beginning of the experiment while B is the same set up after 5 hours

Distilled water

Sucrose solution Sucrose solution

Semi permeable

membrane

SET UP A SET UP B

(a)Name the physiological process investigated (1mark)

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

(b)State three roles of the process identified in (a) above in plant (3marks)

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

7 (a) State the structural similarities between the plant cell and algae cell (1mark)

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

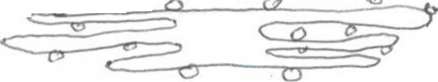
(b) State three characteristics of the phylum arthropoda (3marks)

…………………………………………………………………………………………………

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

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

8. Study the organelle shown below

 X

(a)Identify the organelle (1mark) ………………………………………………………………………………………………………

(b). How is the organelle named in (a) above adapted to its function (1mark)

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

b State the function of the part labeled X (1mark)

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

9. The diagram below shows an animal tissue

Cell 1 cell 2

(a). Name the tissue (1mark) ………………………………………………………………………………………………

(b.) State two roles of the tissue named in (a) above (2marks)

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

(c. )Identify cell 1 and cell 2 (2marks)

Cell 1 …………………………………………………………………………………………

Cell2…………………………………………………………………………………………

10. Write a balanced chemical equation showing photosynthesis (1mark)

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

1 I The diagram below show an ovary of a flower

A

(a)Identify the part labeled A (1mark) ………………………………………………………………………………………………………

(b)Name the type of the placentation of the ovary (1mark)

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

(c)Describe the seed formation (3marks)

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

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12(a) Name the respiratory surface of the following organisms (3marks)

Man…………………………………………………………………………………………………

Amoeba……………………………………………………………………………………………

Grasshopper………………………………………………………………………………………

(b)How does the respiratory surface of grasshopper differ with that of man (1 mark)

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

13 State the role of the following bacteria in the nitrogen cycle (2marks)

(a)Nitrosomonas………………………………………………………………………………

(b) *Pseudomonas denitrificans* ………………………………………………………..

14The table below shows the distribution of the stomata on the leaves of three different plants

|  |  |  |
| --- | --- | --- |
| Leaf | Number of stomata | |
| Upper epidermis | Lower epidermis |
| A | 52 | 4 |
| B | 25 | 29 |
| C | 4 | 16 |

(a)State the habitat of plant species of leaf A and C (2marks)

A……………………………………………………………………………………………………

C……………………………………………………………………………………………………

(b) State three modification f stomata in leaf C (3marks)

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

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

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

15 Give three environmental factors that causes seed dormancy (3marks)

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

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

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

16(a) what are sex linked traits (1 mark)

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

(b)State three sex-linked traits in human beings (3marks)

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

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17. What is convergent evolution (3marks)

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

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

18 In an ecological study 445 weaver birds were captured, marked and released. Three days later 675 birds were captured 75 of which were marked.

(a)What is the name of the sampling method used? (1mark)

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

(b)Calculate the approximate size of the population under the study. (2marks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………(c) What is meant by population density? (1mark)

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

19. The figure below shows hormones levels during the menstrual cycle

X

Z Y

1. 7 14 21 28

DAYS

a).Identify the hormones Z and Y

Y………………………………………………………………………………………………

Z……………………………………………………………………………………………

b). What is the role of high concentration of leutenzing hormone

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

).State the role of follicle stimulating hormone in males

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20. State two roles of active transport in plant. (2marks)

……………………………………………………………………………………………………………………………………………………………………………………………………………… 21. Name two processes in human body in which homeostasis is involved (2marks)

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22 State two structural differences between a seed and a fruit. (2marks)

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

23 Name the hormone in insects that inhibits metamorphosis (1mark) ………………………………………………………………………………………………………

24 A student collected an organism with the following characteristics

Three pairs of petals

One stigma

Clustered leaves with a sheath

(a)State the division and class to which the organism belongs (2marks)

Division……………………………………………………………………………………………

Class………………………………………………………………………………………………

(b)State the other characteristic observed on the leaf (1mark) ………………………………………………………………………………………………………………………………………………………………………………………………………………

25The diagram below shows the digestive system of a mammal

C

U Y

(a)State the function of the juice secreted by the part labeled U in digestion. (2marks)

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

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

(b)State two functions of the muscles of the structure labeled C (2marks) ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

26. State three characteristics of mammalian class (3marks)

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27. Explain how immunity is achieved in human beings (2marks) ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………