# KAPSABET HIGH SCHOOL

***231/1***
***Biology***
***Paper 1***
***Time: 2 hours***

## 2021 TRIAL 3 OCT/NOVEMBER INTERNAL EXAMINATION

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

**Name…….** **Adm No…….**

**Stream…….** **Date …….**

**Sign .....**

**INSTRUCTIONS TO CANDIDATES**

- *Write your **name, Admission number and name of your school** in the spaces provided above*
- ***Sign** and write the **date** of examination in the spaces provided.*
- *Answer **all** the questions in the spaces provided.*
- ***This paper consists of 8 printed pages.***
- ***Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing***

**FOR EXAMINERS USE ONLY**

| Question | Maximum score | Candidate's score |
|---|---|---|
| 1-26 | 80 | |

1. a) Name the causative agents of the following diseases in humans.

i) Typhoid. (1mk)

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ii) Amoebic dysentery. (1mk)

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2. State the function of the following cell organelles.

i) Ribosome. (1mk)

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ii) Lysosomes (1mk)

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iii) Nucleolus. (1mk)

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3. a) Name **one** defect of the circulatory system in humans. (1mk)

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b) State **three** functions of blood other than transport. (3mks)

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4. a) Distinguish between epigael and hypogeal germination in plants. (2mks)

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b) Name the gland that secretes the following hormones. (2mks)

i) Ecdysone

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ii) Juvenile

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5. a) Give two sex linked genes found on the Y-chromosome. (2mks)

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b) Below is a nucleotide strand

| | | | | |
|---|---|---|---|---|
| A | A | G | T | C |

i) Identify the type of nucleic acid. (1mk)

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ii) Give a reason for your answer in (a) above. (1mk)

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6. a) Distinguish between homologous and analogous structures. (2mks)

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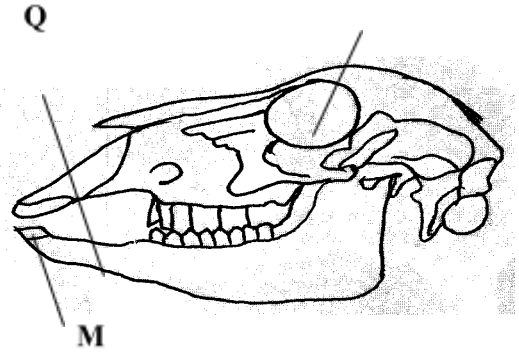
b) Give **one** reason why organisms become resistant to drugs. (1mk)

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7. The following specimen was extracted from a newly discovered organism.

**Orbit**




a) Name the tooth labeled **M**. (1mk)

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b) Name the part labeled Q and state its role. (2mks)

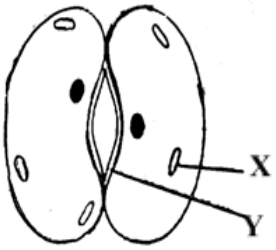
Name……..…….

Role

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8. The diagram below represents a cell organelle




a) Name the part labeled Y. (1mk)

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b) State the function of the part labeled X. (1mk)

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c) Explain how dark stage of photosynthesis is dependent on the light stage. (2mks)

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9. a) Name **two** gaseous exchange surfaces in plants. (2mks)

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b) What is the importance counter current flow system in fish? (2mks)

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10. Form three students wanted to estimate the population in $5km^2$ grass field near a school compound. They captured 36 grass hoppers and marked them before returning them to the field. After a few days they made another catch of grasshoppers. They collected 45 grasshoppers out of which only 4 had marks.

a) Name the method of population estimation the students used. (1mk)

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b) State **two** assumptions that were made by the students during the study. (2mks)

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c) From the data, calculate the population size of grasshopper. (2mks)

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11. State the functions of the following parts. (2mks)

i) a) Endometrium

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b) Epididymis

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ii) What mechanism facilities the movement of the ovum towards uterus. (1mk)

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12. The diagram below represents the flow of energy in a food chain.

Sun → Grass → Antelope → Leopard → Bacteria → **P**

a) Suggest a reason why the energy labeled P does not enter food chain (1mk)

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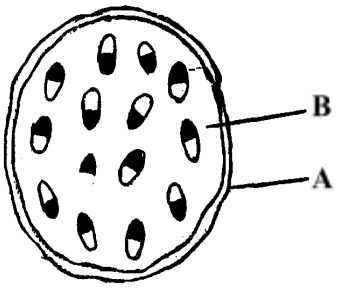
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b) State **one** way in which energy is lost from the food chain. (1mk)

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13. The diagram below represents the cross section of a part of a certain plant.




a) Name the class of the plant from which the section was taken. (1mk)

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b) Give a reason for your answer in a) above. (1mk)

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c) Name the parts labeled **A** and **B**. (2mks)

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14. State **two** reasons why the study of biology is important. (2mks)

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15. State the economic importance of the following plants excretory procedures. (3mks)

a) Caffeine

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b) Quinine

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c) Colchicine

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16. Define the following terms

a) Irritability (1mk)

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b) Stimulus (1mk)

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17. A process that occurs in plants is replaced by the equation below

$C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + CO_2 + Energy$

a) Name the process. (1mk)

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b) State the importance of the process named in a) above. (2mks)

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18. a) What is Binomial Nomenclature? (1mk)

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b) State **two** rules that are followed when printing scientific names. (2mks)

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19. Name **three** strengthening tissues in dicolyledonous plants. (3mks)

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20. Name the site for gaseous exchange in insects. (1mk)

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21. a) What is alternation of generations (2mks)

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b) Explain why leaves of Peridophytes are referred to as Fronds. (1mk)

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22. State **four** adaptations of red blood cells to its functions. (4mks)

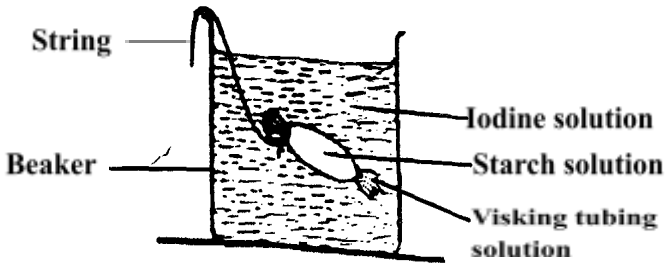
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23. The experiment illustrated below was set up to investigate a certain physiological process




a) Name the physiological process that was being investigated. (1mk)

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b) State the observations that were made after at the end of the experiment

(i) Inside the Visking tubing (1mk)

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(ii) Outside the Visking tubing (1mk)

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c) Account for the observations in b) above. (2mks)

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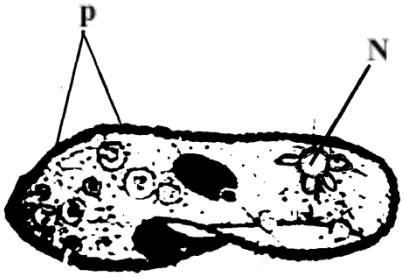
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24. State the differences between the following structures in wind and insect pollinated flowers. (3mks)

(i) Anther
(ii) Pollen grains
(iii) Stigma

| Wind Pollinated | Insect Pollinated flower |
|---|---|
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25. A student placed a drop of pond water in a cavity slide and observed it under the microscope. The student observed many fast moving organisms, one of which is represented in the diagram below.




a) Name the kingdom to which the organism belongs. (1mk)

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b) Name the structures labeled **P** and **N** (2mks)

**P**……..

**N**……...

26. A person was found to pass out large volumes of dilute urine frequently. Name the;

a) Disease the person was suffering from (1mk)

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b) Hormone that was deficient (1mk)

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