NAME..... INDEX NO.....

SCHOOL .....SIGN..... DATE .....

**231/3**
**BIOLOGY**
**PAPER 3**
**JUNE/JULY 2024**
**TERM 2**
**TIME: 1 HOUR 45 MINUTES**

# PROGRESSIVE BIOLOGY JOINT EXAMINATIONS

***(KENYA CERTIFICATE OF SECONDARY EDUCATION - KCSE)***

***Instructions to candidates***

*(a) Write your **Name, school** and **index number** in the spaces provided above.*
*(b) Sign and write the date in the spaces provided.*
*(c) Answer **all** questions in the spaces provided.*
*(d) You are required to spend the first 15 minutes of the $1^{3}/_{4}$ hours allowed reading through the paper carefully before commencing your work.*
*(e) Additional pages must **not** be inserted*
*(f) This paper consists of **5** printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.*
*(g) Candidates should answer questions in English.*

***For examiners use only***

| ***Questions*** | ***Maximum score*** | ***Candidate's score*** |
|---|---|---|
| ***1*** | **12** | |
| ***2*** | **11** | |
| ***3*** | **17** | |
| ***TOTAL*** | **40** | |
| | | |

1. You are provided with specimen **S** soaked overnight for 48 hours. Use it to answer the questions that follow:

**a)**

i) Identify the type of fruit represented by the specimen (1mk)

.....

ii) Name the class in which the specimen was obtained from (1mk)

.....

iii) Explain why the specimen is described to be a fruit and not a seed (1mk)

.....

**b)**

i) Other than the condition provided, name other two environment conditions required for the specimen to germinate (2mks)

.....

.....

ii) State the function of each of the following conditions named in b(i) above in germination process. (2mks)

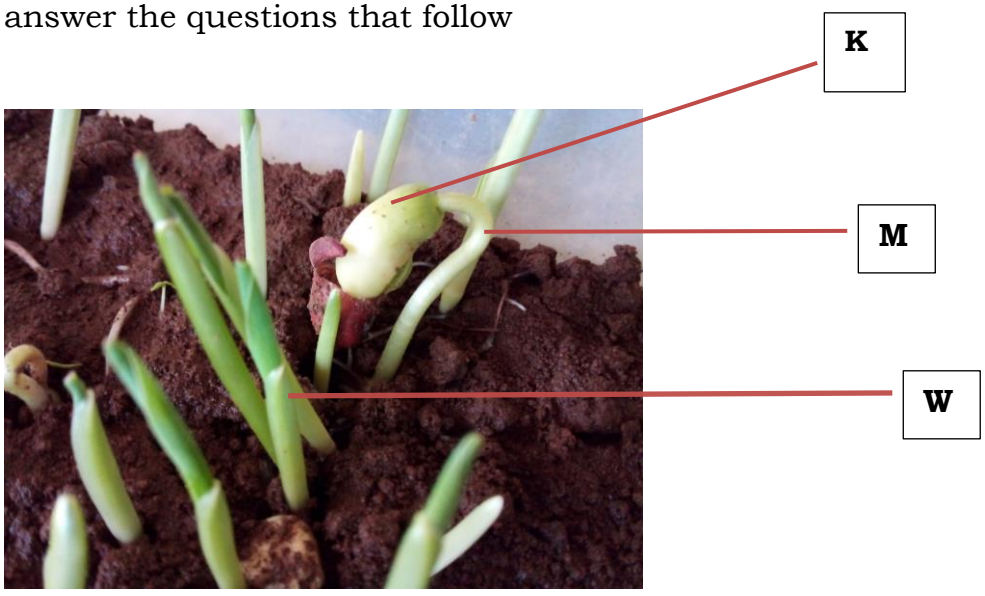
.....

.....

.....

.....

**c)** You are provided with the diagram below. Study it carefully and use it to answer the questions that follow




i) Identify the type of germination exhibited by W (1mk)

.....

ii) Identify the parts labelled **K** and **M** in the diagram (2mks)

K .....

M.....

iii) Describe how part **W** straightens during germination (3mks)

.....

.....

.....

.....

2 Using a motor and pestle, crush specimen **S** into a paste. Divide the paste into two sections. Label test tubes **A** and **B**. add one section to test tube A and add 5mls of hydrogen peroxide

**a)**

i) State two observations in the experiment (2mks)

.....

.....

ii) Identify the process that causes the observation above (1mk)

.....

iii) Name the organ where the process takes place (1mk)

.....

iv) State and explain the expected observation if specimen **S** used for the experiment in test tube **A** was boiled first before soaking. (3mks)

.....

.....

.....

.....

v) Write a word equation for the process that takes place in test tube A (1mk)

.....

**b)** To test tube B, add 3mls of water and shake thoroughly, add 3mls of Benedict's solution then heat to boil

i) State the observation in the experiment (1mk)

.....

.....

ii) Identify the process that caused the results for the observation (1mk)

.....

3. The diagram below shows a feeding level in an ecosystem. Use it to answer the following questions:


**a)**

i) Identify the type of relationship shown above (1mk)

……

**b)**

i) Draw a food chain to represent the feeding relationship in the ecosystem above (2mks)

……

ii) State the advantage of such a short food chain (1mk)

……

**c)**

i) Using the concept of survival for the fittest, which organism is fit in the ecosystem? (1mk)

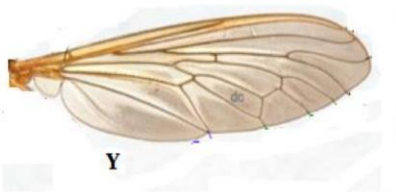
……

ii) Define the term survival for the fittest (1mks)

……

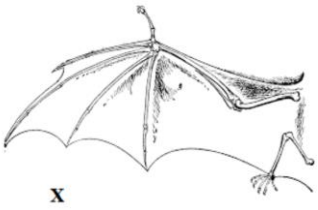
……

**d)** Study the photographs below and answer the questions that follow











i. Name the type of structures shown by: [2marks]

X & Y .....

W & Z .....

ii. State the structural difference between structures X and Y (2 marks)

.....

.....

iii. Name the type of evolution shown by structures Q and R (1 mark)

.....

iv. State the adaptations of structures W and Z (2 marks)

W .....

Z .....

v. Name the types of skeletons shown by structures X and Y (2mks)

X .....

Y .....

vi. A part from structures X and Y, name two other examples of similar structures in animals. (2 marks)

.....

.....

.....