THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education

231/3 **Paper 3**

BIOLOGY

(Practical)

Mar. 2022 – 1¾ hours

435

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

Candidate's Signature ..... **Date** .....

Instructions to Candidates

(a) Write your name and index number in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above.
(c) Answer **all** the questions in the spaces provided.
(d) You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
(e) Additional pages must not be inserted.
(f) **This paper consists of 7 printed pages.**
(g) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
(h) **Candidates should answer the questions in English.**

For Examiner's Use Only

Question	Maximum Score	Candidate's Score
1	14	
2	14	
3	12	
Total Score	40	

1435

1. (a) You are provided with plant specimens labelled **E**, **F**, **G**, **H**, and **J**. Use the specimens to develop a dichotomous key that can be used to identify the plants from which they were obtained based on the following characteristics in the order they are given: (6 marks)

(i) Leaf form

(ii) Leaf venation

(iii) Leaf colour

(b) Account for the likely observation if fresh specimen **E** was exposed to light and tested for starch. (3 marks)

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(c) Explain **one** observable feature that adapts plants from which specimen **G** and **H** were obtained to a dry environment.

G (2 marks)

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H (2 marks)

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(d) Besides leaf characteristics, state **one** other observable characteristic on the plant from which specimen **F** was obtained that enables it to be placed in its Class. (1 mark)

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2. You are provided with solution **M** which is a food substance.

Procedure

(a) Using the reagents provided, test for the food substance present in substance **M** and complete the table below. (12 marks)

Food Test	Procedure	Observation	Conclusion

(b) State **two** precautions one should observe while conducting the experiment in 2(a). (2 marks)

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3. You are provided with specimen **N** and **P** which are plants of the same species grown under different conditions.

(a) State **two** observable differences between the two specimens. (2 marks)

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(b) (i) Name the phenomenon observed in specimen **N**. (1 mark)

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(ii) Explain how the knowledge on the phenomenon named in b(i) is applied in agriculture. (2 marks)

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(c) Account for the appearance of specimen **N**. (3 marks)

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(d) State **two** other environmental factors necessary for seed germination apart from light.
(2 marks)

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(e) State **two** observable features on the specimens that make them be placed in the same Class.
(2 mark)

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