

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION, 1989

033/2

BIOLOGY
PAPER 2

TIME: 2 Hours.

INSTRUCTIONS TO CANDIDATES

1. Answer ALL questions in this paper.
2. All answer MUST be written in the answer booklet provided.
3. Write your centre and index number on every page of your answer booklet.
4. Except for diagrams which must be drawn in pencil, ALL writing should be in ink or ball point pens.
5. FAILURE TO FOLLOW INSTRUCTIONS WILL LEAD TO LOSS OF MARKS.

This paper consists of 3 printed pages.

1. You have been provided with specimen E. Design and carry out an experiment to identify the carbohydrates present in it.

(a) Outline the procedure you would follow to prepare specimen E for the investigation.

(b) In testing for the carbohydrates, record your procedure, observations and inferences as shown in the table below.

Test for :	Procedure	Observations	inferences

2. (a) Cut specimen E longitudinally into two equal parts.

(i) Hold one part with the cut surface facing upwards.
Draw and label fully.

(ii) What functions does specimen E perform in the plant?
Give reasons for your answer.

(b) Specimens F and G are parts of the epidermis of a leaf mounted in distilled water and concentrated sugar solution. Carefully examine the specimens under the microscope.

Giving reasons identify which specimen is mounted in:

(i) distilled water

(ii) concentrated sugar solution.

3. Study specimens H and I carefully.
 - (a) Which distinguishing characteristics observable in specimens H and I are used to place them in their respective classes?
 - (b) Name the phyla and classes to which specimens H and I belong.
 - (c)
 - (i) Carefully remove the hind limb of specimen H. Draw and label fully.
 - (ii) Clearly state how the hind limb is adapted for the functions it performs specimen H.
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