

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

033/2A

BIOLOGY 2A  
ALTERNATIVE A PRACTICAL

*TIME: 2 Hours 30 minutes*

*Tuesday November 11, 2003 a.m.*

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**Instructions**

1. This paper consists of **THREE (3)** questions.
2. Answer **TWO (2)** questions including question **Number 1**.
3. Each question carries 25 marks.
4. Cellular phones are **not** allowed in the examination room.
5. Electronic calculators are **not** allowed in the examination room.
6. Write your Examination Number on every page of your answer booklet(s).

This paper consists of 3 printed pages.

1. You are provided with solution S. Carry out experiments to identify the food substances present in the solution. Record your experimental work in a table as shown below:

(a)

Test for	Procedure	Observation	Inference

Solution S contains \_\_\_\_\_

- (b) Suggest one natural food substance from which solution S might have been prepared.
- (c) For each food substance identified, name the gland, digestive juice, enzyme and end product of the digestion taking place in the
- stomach
  - duodenum.
- (d) Why is it important to include the identified food substances in the diet to a five-year-old child?
2. You are provided with specimen P. Carry out an experiment as instructed below:
- 2.1 Make a drawing to show the colour pattern of specimen P.
  - 2.2 Dip specimen P in hot water for about one minute.
  - 2.3 Boil specimen P in alcohol using a hot water bath.
  - 2.4 Dip the boiled specimen P in hot water.
  - 2.5 Spread specimen P on a white tile and add 2 - 3 drops of iodine solution on the specimen.
- (a) (i) Identify specimen P.
- (ii) What observation did you make after applying iodine solution to specimen P?

- (b) Why was specimen P
    - (i) dipped in hot water at the beginning of the experiment
    - (ii) boiled in alcohol
    - (iii) dipped in hot water after boiling in alcohol?
  - (c) Why was the alcohol boiled using a hot water bath?
  - (d) (i) What is the aim of the experiment?
  - (ii) Name the physiological process which was being investigated.
  - (iii) What conclusion can you make from this experiment?
3. Study specimens E, F, G, H, I and J provided.
- (a) Identify specimens E, F, G, H, I and J using common names.
  - (b) (i) Name the kingdoms for each of the specimens E, F, G, H, I and J.  
(ii) Write down three characteristics that distinguish the kingdom(s) to which specimens E, F, G and H belong from members of other kingdoms.
  - (c) Suggest the possible habitats for specimens F and G.
  - (d) (i) Suggest the method of dispersal for specimen I.  
(ii) Draw and label specimen J.