

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

033/2A

BIOLOGY 2A  
ALTERNATIVE A PRACTICAL  
(For Both School and Private Candidates)

TIME: 2:30 Hours

Wednesday 7<sup>th</sup>, October 2009 a.m.

Instructions

1. This paper consists of **two (2)** questions.
2. Answer **all** questions.
3. Each question carries 25 marks.
4. Except for diagrams which must be drawn in pencil all writing should be in blue/black/ball point pen.
5. Electronic calculators are **not** allowed in the examination room.
6. Cellular phones are **not** allowed in the examination room.
7. Write your **Examination Number** on every page of your answer booklet(s).

This paper consists of 2 printed pages.

flowers  
flour

Die

Starch - duodenums  
Reducing and non-reducing

(Small intestine)  
(ileum)

1. (a) You are provided with solution  $S_1$ . Carry out experiments to identify the food substances present in it. Record your procedure, observation and inferences as shown in the table below.

Pancreas  
Juice

| Test for | Procedure | Observation | Inference |
|----------|-----------|-------------|-----------|
|          |           |             |           |

- (b) (i) Name the food substances you have identified.  
(ii) State **two (2)** sources of each food substance named in 1(b) (i) above.  
(iii) Mention **one (1)** role of each food substance you have identified.
- (c) In which parts of the digestive system are the above mentioned food substances digested? In each case mention the enzyme and the products.

2. (a) Using a hand lens examine specimen  $A_1$ .
- (i) Identify specimen  $A_1$  by its common name.  
(ii) Name the phylum and class to which specimen  $A_1$  belongs.  
(iii) Give an example of another organism which belongs to the same phylum as specimen  $A_1$ .
- (b) Draw a well labelled diagram of specimen  $A_1$ .
- (c) How is specimen  $A_1$  adapted to its mode of nutrition?
- (d) What is the economic importance of specimen  $A_1$ ?
- (e) Where can specimen  $A_1$  be found?

| Test for           | procedures                                                                                                                   | observations                              | inference    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------|
| Starch             | 1. Iodine solution was added to solution<br>1. Iodine was added to solution<br>2. The mixture was boiled and allowed to cool | The colour turned blue black or deep blue | Limnonthalis |
| Non-Reducing Sugar | 1. HCl solution was added to solution<br>2. The mixture was boiled and allowed to cool                                       |                                           |              |