THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

ADVANCED CERTIFICATE OF SECONDARY EDUCATION

EXAMINATION

133/3B **BIOLOGY 3B**

(ACTUAL PRACTICAL B)

(For Both School and Private candidates)

Time: 3:20 Hours **Year: 2021**

Instructions

1. This paper consists of **three (3)** questions**.**
2. Answer **all** questions.
3. Question **one (1)** carries **20** marks, and the other **two (2),** carry **15** marks each.
4. Mathematical tables and non-programmable calculators may be used.
5. All writing must be in **blue** or **black** ink **except** drawing which must be in pencil
6. Cellular phones and any unauthorized materials are **not** allowed in the examination room.
7. Write your **Examination Number** on every page of your answer booklet (s).

1. You are provided with specimen **S**, dissect it and display the digestive system.

Questions

(a) Draw a large and well labelled diagram of the dissected specimen **S.**

(b) Mention two glands in the specimen **S** which carry out the digestive role.

(c) Briefly explain what would happen in the digestive system of the specimen **S**, if the glands mentioned in (b) were completely damaged.

(d) Explain how the specimen is adapted to its mode of life by giving two points.

(e) State two disadvantages of the specimen **S** to the Tanzania economy.

2. You are provided with solutions $\mathbf{X_1}$ and $\mathbf{Z_1}$:

(a) Use the provided chemicals to identify the food substance(s) present in each of the solutions $\mathbf{X_1}$ and $\mathbf{Z_1}$ and record the experimental work as shown in Table 1.

Food tested	**Procedures**	**Observation**	**Inference**

(b) State two properties of the food substance (s) identified in each of the solutions $\mathbf{X_1}$ and $\mathbf{Z_1}$.

(c) Give the importance of warmth in some procedures of the experiment.

(d) State a way in which the food substance (s) identified in the solutions $\mathbf{X_1}$ and $\mathbf{Z_1}$ is important in the human body.

(e) Briefly explain how the knowledge applied in the experiment is useful in their daily life.

3. You are provided with specimens **A, B, C, D, E, F** and **G**.

(a) Explain how each of the specimens **F** and **G** is adapted to its mode of life. Give three points for each.

(b) (i) Identify the Division/Phylum, Class and the Genus of each of the specimens **F** and **G.**

(ii) Use binomial nomenclature rules to correctly write the specific names of each specimen if the specimens **F** and **G** belong to hygrometrica and filix-mas species respectively.

(c) Construct a bracketed key for identification of the specimens **A, B, C, D** and **E** using the following features:

(i) Backbone

(ii) Body shape

(iii) Fins

(iv) Limb size.