THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

DIPLOMA IN SECONDARY EDUCATION EXAMINATION

733/2A **BIOLOGY 2A**

(ACTUAL PRACTICAL A)

Time: 3 Hour. **Tuesday 11/05/2004 a.m**

Instructions

1. This paper has three papers.
2. Answer **all** questions.
3. Question **1** contains 30 marks while question 2 and 3 have 10 marks each.
4. Mobile phones are not allowed inside the examination room.
5. Write your Examination Number on every page of your answer booklet.

1. Dissect specimen **M** to expose the internal **reproductive and excretory systems**.

(a) (i) Draw and label a clear diagram showing two parts of the reproductive system and two of the excretory system.

(ii) Indicate the position of the digestive tube on your diagram.

(b) (i) State the role of each reproductive part you labelled.

(ii) How do the malpighian tubules function in waste removal?

(iii) What is the importance of the crop and gizzard during feeding?

(c) (i) Determine the sex of specimen M.

(ii) Provide three external features that justify your conclusion.

2. You are provided with **solutions B and C**. Perform biochemical tests on both solutions.

(a) (i) Use Benedict's, iodine, and Biuret solution to test the presence of carbohydrates and proteins.

(ii) Fill in the following table:

Food Tested	Procedure	Observation	Inference

(b) (i) Identify the digestive enzyme that acts on each food substance found.

(ii) State the digestive juice responsible for this process.

(iii) What are the final digestion products and their absorption site?

(c) (i) Why is heating important in Benedict's test?

(ii) What would happen if excess protein is consumed?

3. Observe the provided specimens **X**, **Y** and **Z** .

(a) (i) Give three differences between specimen X and Y.

(ii) Mention two similarities between them.

(iii) Which class does specimen X belong to? Give two observable features as evidence.

(b) (i) Look at the lower surface of specimen Z. What are the visible structures?

(ii) What is the function of these structures in plant reproduction?

(c) (i) Draw specimen X and label four external parts.

(ii) What is the economic value of specimen X?