

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

133/3A

**BIOLOGY 3A
(ACTUAL PRACTICAL A)
(For Both School and Private Candidates)**

Time: 3:20 Hours

Year: 2022

Instructions

1. This paper consists of **three (3)** questions.
2. Answer **all** questions.
3. Question one (1) carries **twenty (20)** marks and the other two (2) carry **fifteen (15)** marks each.
4. Except for diagrams which must be drawn in pencil, all writing should be in blue or black ink.
5. Cellular phones and any unauthorised materials are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).



1. You have been provided with specimen S_1 . Dissect the specimen in a usual way to fully display the *viscera in situ*.

(a) Draw a neat diagram of your dissection and label ten parts.

Leave your dissection properly displayed for assessment.

- (b) (i) What are the associate organs of the digestive system present in the specimen?
(ii) Which digestive role is played by each of the associate organs identified in (b)(i)?
(iii) How does each of the associate organ identified in (b)(i) adapted to perform its digestive role in the specimen?
(iv) How does each associate organ identified in (b)(i) adapted to regulate sugar in the body of the specimen?

2. You have been provided with 5 cm^3 of fresh liver, water and the chemical reagents, use them to perform procedures (i) and (ii) and then answer the questions that follow:

Procedures

- (i) Cut the 3 cm^3 of the liver into small pieces, then crush it to paste by using a mortar and pestle provided. Add a little amount of water into the paste, mix well and label it as **liver solution**.
(ii) Put the remaining 2 cm^3 of a liver into a test tube, add 3 drops of solution X in the test tube. Observe the results.

Questions

- (a) Using the chemical reagents provided, carry out biochemical test to identify the food substances present in the **liver solution**. Tabulate your results as showing in the following table:

Food tested	Procedure	Observation	Inference

- (b) What is a name of solution X?
(c) With the aid of the chemical formula, illustrate the reaction led to the observation made in procedure (ii).
(d) How can one set a control experiment for the reaction presented in (c)?

3. You have been provided with specimens A_1 , A_2 and A_3 .

- (a) Suggest four organisms from which the specimen A_3 must have been taken.
(b) Carefully observe the specimens A_1 and A_2 .
(i) What is the Kingdom and Phylum of specimen A_2 ?
(ii) What observable features in each of the specimens A_1 and A_2 represent their respective Class level? Give four points.
(c) What are the functions of specimen A_3 to the organism from which it was taken? Give three functions.