

**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)**

Year : 2021

Time: 3:20 Hours

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 **K**. Dissect the specimen to fully display viscera general.

Leave your dissection properly displayed for assessment.

- (a) Draw a large, neat and well labeled diagram of your dissection.
- (b) (i) Identify two structures in specimen **K** which form the small intestine.
(ii) How do the structures you identified in 1(b) (i) adapted to their function? Give three points for each.

2. You have been provided with two test tubes, a larger beaker, thermometer, starch suspension, pure drinking water and the table reagents. Carry out experiments using procedures (i) - (vii) and then answer the questions that follow.

Procedures

- (i) Take 2 test tubes and label them as test tube 1 and test tube 2 respectively.
- (ii) Rinse your mouth with pure drinking water, and then collect your saliva by spitting 2 ml into test tube 1.
- (iii) Put the 2 ml of water into test tube 2.
- (iv) Add 2 ml of starch suspension to each test tube. Shake the test tubes.
- (v) Put the tubes in a beaker of water at 40°C. Leave them for 10 minutes.
- (vi) Put 2 drops from each test tube into separate dimples of the white tile, then add a drop of iodine solution. Note the results.
- (vii) Add 3 ml of Benedict's solution to each test tube, and then boil the test tubes for a minute. Note the results.

Questions

- (a) Based on the observations in procedure (v) and (vi), write what happened to the iodine and Benedict's test respectively. Record your experimental results as shown in Table 1.

Table 1

Test Tube	Result of Iodine test	Result of Benedict's test
1		
2		

- (b) Why water in test tube 2 was needed in place of saliva?
- (c) Which test tube contained starch at the end of experiment? Give a reason to support your answer.
- (d) What is the effect of saliva on starch?

- (e) Why warmth in procedure (iv) and (vi) of the experiment is important to our bodies?
- (f) What is the importance of the food substance contained in test tube 1 at the end of experiment?
- (g) In what ways is the knowledge used in the experiment useful in your daily life?

3. You have been provided with specimens **L, T, W, X, Y** and **Z**.

- (a) Give three distinctive features used to place each of the specimens **L** and **Y** in its respective Kingdom.
- (b) State one advantage and disadvantage of each of the specimens **L** and **Y**.
- (c) Construct a bracketed key for identification of the specimens **T, W, X, Y** and **Z** using the following features:
 - (i) Nature of the skeleton
 - (ii) Wings
 - (iii) Scales
 - (iv) Body partition.