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

033/2A

## BIOLOGY 2A (ACTUAL PRACTICAL A)

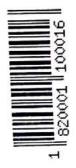
(For Both School and Private Candidates)

Time: 2:30 Hours

Tuesday, 12<sup>th</sup> November 2019 a.m.

#### Instructions

- 1. This paper consists of two (2) questions. Answer all the questions.
- 2. Each question carries 25 marks.
- 3. All writings should be in blue or black ink, except for diagrams which must be drawn in pencil.
- 4. Cellular phones and any unauthorised materials are not allowed in the examination room.
- 5. Write your Examination Number on every page of your answer booklet(s).



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You have been provided with four test tubes labeled 1, 2, 3 and 4, a beaker, measuring cylinder, test tube rack, specimen M and the table reagents. Carry out experiments using procedures (i) - (viii), then answer the questions that follow.

#### **Procedures**

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- Take all 5 specimens M provided, peel them to remove the outer cover, and grind them (i) using mortar and pestle to obtain a paste.
- Put the paste in a beaker, then add 30 ml of water and steer a mixture. (ii)
- Filter the mixture by using a sieve to obtain a clear solution of M. (iii)
- Put 2 ml of solution M into each of the test tubes 1, 2, 3 and 4. (iv)
- Add 2 drops of iodine solution into the test tube 1. (v)
- Add 2 ml of Benedict's solution into the test tube 2, and then warm the contents. (vi)
- Add 2 ml of sodium hydroxide solution into the test tube 3, followed by 3 drops of (vii) copper II sulphate solution.
- Add 2 ml of Sudan III solution into the test tube 4. Shake the mixture and leave it on the (viii) test tube rack to settle.

### Questions

- (a) What was the aim of the experiment?
- Based on the observations in the test tubes 1, 2, 3 and 4, what are the types of food (b) substances contained in the specimen M? Give reasons to justify your answer.
- (c) Why warmth is important in procedure (vi) of the experiment?
- Outline two importance of food substances identified in specimen M to the body of (d) human being.
- Why the skills used in this experiment useful for preparation of balanced diet in your (e) daily life?
- You have been provided with specimens A, B, C and D. Study them carefully, then answer the 2. following questions:
  - (a) (i) Classify each of the specimens A and B to the Phylum level.
    - Why it is important to classify the specimens A and B to their respective Taxon? (ii) Give two reasons.
  - Identify the habitat of specimen B. (b) (i)
    - Draw a diagram of specimen B and label the locomotive structures. (ii)
    - Why specimen B should be placed in the Class Osteochthyes? (iii)
  - Give two observable features which distinguish specimens C and D at Class level. (c)
  - What are the advantages of members of the Class Insecta in the growth and (d) development of industry? Give three points.