

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

033/2A

**BIOLOGY 2A
PRACTICAL A**
(For Both School and Private Candidates)

Time: 2:30 Hours

Year: 2020

Instructions

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



1. You are provided with a tooth pick, piece of cotton wool, methylated spirit and samples labeled **A** and **B** which are stimuli of receptors in your body. Carry out the experiments in item (i) – (iv) and then answer the questions that follow:

- (i) Look at your body and observe the sense organ that covers the whole hands.
- (ii) Take a tooth pick and prick slightly the upper part of your hand and note the feeling.
- (iii) Touch each of the samples **A** and **B** and feel their coarseness.
- (iv) Take cotton wool and soak into methylated spirit. Rub it on your hand and observe what is happening.

Questions

- (a)
 - (i) Give the name of the sense organ that covers your hands.
 - (ii) Explain four functions of the sense organ mentioned in (a)(i).
 - (b)
 - (i) What did you feel when you pricked the upper part of your hand with a tooth pick?
 - (ii) What type of sensory receptor responsible for the feeling in (b) (i)?
 - (c)
 - (i) Identify the coarseness felt in each of the samples **A** and **B**.
 - (ii) What type of sensory receptor responsible for the feeling in (c)(i)?
 - (d)
 - (i) What did you feel when you rubbed methylated spirit on your skin?
 - (ii) Give the two types of sensory receptors responsible for the feeling in (d) (i).
 - (e) What was the aim of the experiment?
 - (f) Explain the roles of hairs and sweat pores on the sense organ covering your hands.
2. You have been provided with specimens **P**, **Q** and **R**. Examine them carefully, then answer the questions that follow:
- (a)
 - (i) Classify the specimens **P**, **Q** and **R** to Phylum/Division level.
 - (ii) What are the two observable features you used to place specimens **P** and **Q** to their respective Kingdoms?
 - (b) Draw a well labeled diagram of specimen **P**.
 - (c)
 - (i) What is the habitat of the specimen **Q**?
 - (ii) Why is it important for a Biology student to know the habitat of the specimen **Q**?
 - (iii) Identify three observable features which help specimen **Q** to adapt its habitat.
 - (d) In what ways the representative members of Kingdom in which the specimen **Q** belongs are advantageous to industrial development in Tanzania. Give three advantages.