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.