THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

033/2B **BIOLOGY 2B**

(ACTUAL PRACTICAL B)

(For Both School and Private Candidates)

Time: 2:30 Hours **ANSWERS** **Year: 2015**

Instructions

1. This paper consists of two questions.

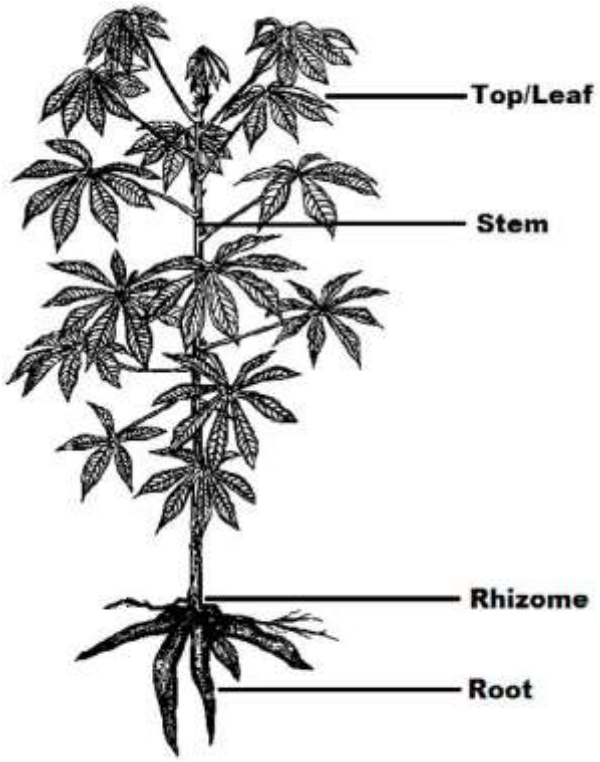
2. Answer all questions.

1. Study specimens R, S, T and U then answer the questions that follow.

(a)(i) Identify specimens R, S, T and U by their common names.
- Specimen R: Cassava stem
- Specimen S: Sweet potato root
- Specimen T: Onion bulb
- Specimen U: Flower

(ii) What part of a plant are specimen R, S, T and U?
- R: Stem
- S: Root
- T: Bulb (modified stem and leaf)
- U: Flower (reproductive part)

(iii) Draw and label a diagram of specimen R.



(iv) Name the type of reproduction common in specimens R and S. Give reason to support your answer.
Type: Asexual reproduction (vegetative propagation)
Reason: New plants grow from parts of the plant like stem (R) or root (S) without seeds

(v) Briefly explain three advantages and two disadvantages a farmer gets in crop production by using a type of reproduction you named in (a)(iv).
Advantages:
- Rapid multiplication of plants

- Genetically identical crops with desired traits
- No need for pollination or seeds

Disadvantages:
- Low genetic variation
- Susceptibility to diseases and pests

(b) Name the type of pollination which is likely to take place in specimen U. Give reason to support your answer.
Type: Insect pollination
Reason: Bright-colored petals, scent, and presence of nectar attract insects

(c) Carefully remove all the sepals, petals and the entire stamen tube from specimen U then:
(i) Give the name of the remaining part of a specimen U.
Pistil or Carpel (female part of the flower)

(ii) Draw a well labelled diagram to show the structures of the remaining part of specimen U.
[Draw the pistil showing stigma, style, ovary, ovule]

2. You have been provided with specimens W, X and Y.

(a)(i) Identify specimens X and Y by their common names.
- Specimen X: Fern
- Specimen Y: Mushroom

(ii) Classify specimens W, X and Y to Phylum/Division level.

Specimen W:
- Kingdom: Plantae
- Division: Angiospermophyta

Specimen X:
- Kingdom: Plantae
- Division: Pteridophyta

Specimen Y:
- Kingdom: Fungi
- Division: Basidiomycota

(b) List three distinctive features used to place each specimen W, X and Y in their respective Kingdom.

Specimen W:
- Has true roots, stems and leaves

- Produces flowers and seeds
- Has vascular tissues

Specimen X:
- Has true roots and leaves
- Reproduces by spores
- No flowers or seeds

Specimen Y:
- Lacks chlorophyll
- Body is made of hyphae or mycelium
- Reproduces by spores

(c) State where specimens X and Y could be found?
- X (Fern): Shady, moist forests or gardens
- Y (Mushroom): Damp, decaying organic matter or soil

(d) State two advantages and one disadvantage of each specimen X and Y.

Specimen X (Fern):
Advantages: Prevents soil erosion, used in ornamental gardening
Disadvantage: Grows slowly and sensitive to dry conditions

Specimen Y (Mushroom):
Advantages: Used as food, aids in decomposition
Disadvantage: Some species are poisonous or toxic