

### **PAPER 3 (PRATICAL)**

**YEAR 2015**

#### **SPECIMEN;**

A---- Twig of mango plant

B---- Twig of Ixora plant

C---- Leaf of Hibiscus

D---- Green leafy vegetable

F---- A piece of fleshy cut beef

G---- Worker bee (wet preserved)

H---- Soldier termite (wet preserved)

K---- Adult cockroach (wet preserved)

L---- Nymph of cockroach (wet preserved)

M---- Young toad (freshly preserved)

N---- Scale of a bony fish

P---- Freshly preserved mammalian skin preferably of goat or ram with hair/fur measuring at least 4cm by 4cm placed in a petri dish

S---- A small amount of garden soil in a petri dish

T--- Orange/lemon/lime/citrus fruit

V---- Tomato fruit

W---- Cassava tuber

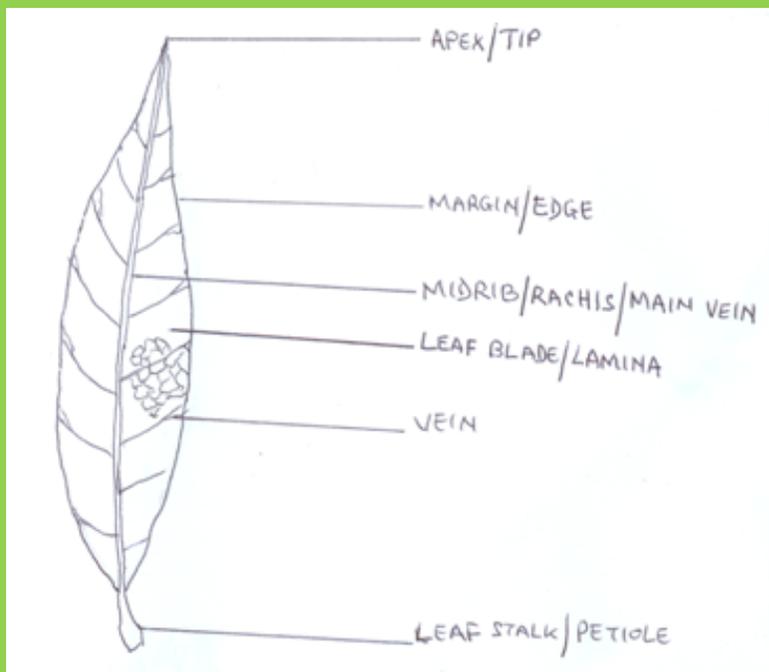
Xi---- Stem of young cassava plant measuring at least 10cm in length

Xii---- Stem of young cassava plant measuring at least 10cm in length as in Xi.

**QUESTIONS AND ANSWER**

- ❖ Classify specimen B (twig of Ixora) into its division and class.  
 Division----- Angiospermatophyta  
 Class----- Dicotyledoneae
  
- ❖ State the types of leaf arrangements in specimens A (twig of Mango) and B (twig of Ixora)  
 Specimen A----- Spiral  
 Specimen B----- Opposite
  
- ❖ Name the leaf shape of specimens A(twig of Mango) and B(twig of Ixora)  
 Specimen A-----Lanceolate  
 Specimen B-----Oval
  
- ❖ State the type of leaf margin in specimen A (twig of Mango)  
 Smooth/ Wavy
  
- ❖ State the types of venation found in the leaves of specimens A (twig of Mango) and B (twig of Ixora)  
 Specimen A----- Net  
 Specimen B----- Net
  
- ❖ List three observable similarities found in specimens A and B
  1. Both leaves have pointed apex.
  2. Both leaves have net venation
  3. They both have leaf stalk
  
- ❖ In a tabular form, state four observable differences between specimens A and B
 

	Specimen A (twig of Mango)	Specimen B (twig of Ixora)
•	Leaves are bigger	Leaves are smaller
•	Leaves shape is Lanceolate	Leaves shape is Oval
•	Leaves arrangement is Spiral	Leaves arrangement is opposite
•	Leaves have elongated apex	Leaves have short apex
  
- ❖ Make a drawing 8cm-10cm long of the leaf of specimen A labelfully.



- ❖ Name the phylum of specimens G (Worker bee) and H (Soldier termite) and state two reasons for the answer given.

The phylum of specimens G and H is Arthropoda

Reasons

1. They have jointed legs
2. They are bilateral symmetry

- ❖ Name the structures on specimens G (Worker bee) and H (Soldier termite) that are used for defense.

Specimen G---- Sting

Specimen H---- Biting

- ❖ State the habitat of each of specimens G and H

Habitat of specimen G----Hive

Habitat of specimen H---- Anthill, old logs of tree.

- ❖ State two ways in which each of specimens G and H are of economic importance.

Economic importance of specimen G

1. It pollinate flower

2. It produces honey

Economic importance of specimen H

1. Source of food and protein
2. Aids soil aeration through tunneling

- ❖ Name the class of organism to which each of specimens M,N and P are associated

Specimen M (Young toad) -----Aves

Specimen N (Scale of a bony fish) ----- Osteichthyes

Specimen P (mammalian skin) ----- Mammalia

- ❖ Name one function common to the specimens M,N and P

Protection of the organism against injury.

- ❖ In a tabular form, state four observable differences between specimen M and P

	Specimen M	Specimen P
	Absence of hair	Presence of hair
	Presence of inferior umbilicus	Absence of umbilicus
	Texture is hard when touched	When touched, texture is soft
	Presence of shaft	No shaft

- ❖ Explain three features of biological importance in specimen M

Vane is broad to provide surface area against desiccation

Shaft which is centrally placed to provide point of attachment

- ❖ Classify specimens T, V and W according to the following criteria

Agricultural classification

Life cycle

Agricultural classification

1. Specimen T (Orange/lemon/lime/citrus fruit) ----- Fruit crop
2. Specimen V (Tomato fruit) ----- Vegetable crop
3. Specimen W (Cassava tuber) ----- Root tuber



- ❖ Make a transverse section of specimen V (Tomato fruit) and state:
  - a. Three observable differences
  - b. Three observable similarities between the transverse sections of specimens T and V

Three observable differences

	Specimen T	Specimen V
1.	Small placenta	Big placenta
2.	Few seeds	Many seeds
3.	Epicarp are hard	Epicarp is soft

Three observable similarities between the transverse sections of specimens T and V

1. Both are spherical
2. They both have fused epicarp
3. They both axile placentation

- ❖ Carefully remove the bark of specimen Xi to expose the naked part and:
  - a. State two observable differences between specimens' xi and Xii

	Specimen Xi	Specimen Xii
	No internode	Presence of internode
	Presence of node	Absence of node

- b. If Xi and Xii are planted, what difference will be noticed after a month? And give one reason.

Difference that will be noticed

Xii will germinate while Xi will decay and will not germinate.

Reason

Xii possesses axillary buds that will make it germinate but they were removed in Xi.

