



## **FACULTY OF SCIENCE**

### **DEPARTMENT OF BOTANY AND PLANT BIOTECHNOLOGY**

**MODULE      BOT8X00 SCIENTIFIC METHODS**

**CAMPUS      APK**

**EXAM      2019 SUPPLEMENTARY**

**DATE:**

**SESSION:**

**ASSESSOR:**

**DR A OSKOLSKII**

**INTERNAL MODERATOR:**

**DR N NGOBESE**

**DURATION: 2 HOURS**

**MARKS: 50**

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**NUMBER OF PAGES: 2 PAGES**

**INSTRUCTIONS: ANSWER ALL THE QUESTIONS.**

**REQUIREMENTS: EXAM BOOK**

## **BOT0087 – SCIENTIFIC METHODS**

### **QUESTION 1**

Study the branch of *Combretum* provided, and draw diagram of its shoot system  
(10)

### **QUESTION 2**

Study the flower of *Bignonia* provided, and draw its floral diagram. Positions of shoot stem and subtending leaf as well as of all floral organs must be indicated.  
(10)

### **QUESTION 3**

Study the microslide of *Dais cotinifolia* wood and answer the following questions:

- 3.1. Name the mounting medium and its solvent used for preparation of this microslide. (3)
- 3.2. Indicate the following traits of this wood:
  - 3.2.1. Ring-porous wood or diffuse-porous wood. (3)
  - 3.2.2. Perforation plates simple or scalariform. (3)
  - 3.2.3. Intervessel pits scalariform, opposite or alternate. (3)
  - 3.2.4. Rays exclusively uniseriate, exclusively multiseriate, or both. (3)
  - 3.2.5. Rays consist of only procumbent cells, or square/upright ray cells are also abundant. (3)

### **QUESTION 4**

Mention the information (at least five items) which must be recorded when an anatomical sample is collected in the field. (4)

### **QUESTION 5**

Suppose you need to study the fine structure of the seed coat surface of a watermelon seed.

- 3.1. What would be the most suitable method of examination for this study? (2)
- 3.3. Mention the most important steps (at least four ones) of sample preparation for this method. (6)

**TOTAL [50]**