UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMMES:

B.SC. IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING YEAR 1
B.SC. IN AGRICULTURAL ECONOMICS AND AGRIBUSSINESS MANAGEMENT YEAR 1
B.SC. IN AGRICULTURAL EDUCATION YEAR 1
B.SC. IN AGRONOMY YEAR 1
B.SC. IN ANIMAL SCIENCE YEAR 1
B.SC. IN CONSUMER SCIENCE YEAR 1
B.SC. IN CONSUMER SCIENCE EDUCATION YEAR 1
B.SC. IN FOOD SCIENCE, NUTRITION AND TECHNOLOGY YEAR 1
B.SC. IN HORTICULTURE YEAR 1
B.SC. IN TEXTILES, APPAREL DESIGN AND MANAGEMENT YEAR 1

COURSE CODE: CP 102

TITLE OF PAPER: BOTANY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ALL QUESTIONS

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## QUESTION 1

### PART A: MULTIPLE CHOICE QUESTIONS (1 Mark each)

For each question, choose the correct option which best answers that question. Read all choices before you choose.

1. In plant cells, where is the plasmodesmata located?
   **A.** Secondary pit fields **B.** Plasma membrane **C.** Primary pit fields **D.** Cytoplasm

2. What are the two biochemical layers forming the plasma membrane in plant cells?
   **A.** Phospholipids and hydrolic layers **B.** Hydrophilic and hydrophobic heads
   **C.** Primary and secondary heads **D.** Phospholipids and hydrophobic layers.

3. Which of the following is lacking in parenchyma cells?
   **A.** Primary cell walls **B.** Secondary cell walls **C.** Vacuole **D.** Both the primary and secondary cell walls.

4. Fibres are cells of which type?
   **A.** Sclerenchyma **B.** Collenchyma **C.** Parenchyma **D.** Sieve tube members

5. The ground tissues are formed by which group of cells?
   **A.** Sclereids, collenchyma and companion cells **B.** Trichomes, fibres and parenchyma
   **C.** Tracheids, sieve tube members and vessel elements **D.** Parenchyma, collenchyma and sclerenchyma.

6. Water conducting tissues are formed by which group of cells?
   **A.** Companion cells and sieve tube members **B.** Tracheids and vessel elements
   **C.** Parenchyma and sclerenchyma **D.** Trichomes and companion cells.

7. Plant food conducting tissues are formed by which group of cells?
   **A.** Companion cells and sieve tube members **B.** Tracheids and vessel elements
   **C.** Parenchyma and sclerenchyma **D.** Trichomes and companion cells.

8. Which of these cells form the dermal tissues in primary stems of monocots?
   **A.** Trichomes **B.** Cortex **C.** Endodermal cells **D.** Sclereids

9. The stele in primary roots of monocots is formed by which tissues?
   **A.** Pericycle **B.** Casparian strips **C.** Xylem and phloem **D.** Ground tissues

10. Which tissues are found in the region of cell elongation in primary roots?
**A.** Primary tissues **B.** Primary meristems **C.** Ground tissues **D.** Secondary tissues

11. Primary growth in primary stems of dicots is facilitated by;
**A.** The procambium layer **B.** The shoot apical meristem **C.** Lateral meristem **D.** Vascular cambium.

12. In both primary stems of dicots and primary roots of monocots, the vascular bundles are;
**A.** Arranged in a ring **B.** They are scattered on ground tissues **C.** They form an X-shape pattern **D.** Herbaceous and forms a cylinder of vascular tissue.

13. The collateral arrangement of vascular tissues in veins of leaves ensures that;
**A.** There is transport of water and minerals **B.** There is no secondary growth **C.** Plant food flows freely from leaves to roots **D.** There is even distribution of veins on the blade.

14. Dorsiventral leaves have;
**A.** Two epidermal layers **B.** Undifferentiated mesophyll **C.** One epidermal layer **D.** Differentiated mesophyll.

15. Amphistomatic leaves have;
**A.** Stomata on both epidermal layers **B.** No stomata **C.** Stomata on the lower epidermis **D.** Stomata on the upper epidermis

(15 Marks)

**PART B: COPY AND COMPLETE THE TABLE**

Copy and complete the table below and list the primary meristems and the primary tissues they form. Also list the secondary tissues formed by the primary tissues.

| Primary meristems | Primary tissues | Secondary tissues |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

(10 Marks)

**[25 MARKS]**

## QUESTION 2

Write short notes on the following terms related to the reproduction of angiosperms.

a) Double fertilization (6 Marks)
b) Differences between a fruit and a vegetable (6 Marks)
c) Dry indehiscent fruits (5 Marks)
d) Aggregate fruits (5 Marks)
e) Seed dispersal (3 Marks)

**[25 MARKS]**

## QUESTION 3

Write short notes on the following terms related to plant taxonomy.

a) Basic rules of the ICBN (6 Marks)
b) Advantages of using botanical names (8 Marks)
c) Hierarchical classification system of plants (8 Marks)
d) Phytography (3 Marks)

**[25 MARKS]**

## QUESTION 4

a) Give common names, botanical names and Families of **any three (3)** useful plants in Class Magnoliopsida. (15 Marks)

b) Give common names, botanical names and Families **of any two (2)** useful plant in Class Liliopsida (10 Marks)

***N.B.: For both questions, the useful plants must be from different Families.***

**[25 MARKS]**