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QUALIFICATION : **BACHELOR OF SCIENCE**	
QUALIFICATION CODE: **07BOSC**	LEVEL: **6**
COURSE: **PLANT STRUCTURE AND FUNCTION**	COURSE CODE: **PSF602S**
DATE: **JANUARY 2025**	SESSION: **1**
DURATION: **3 HOURS**	MARKS: **100**

SECOND OPPORTUNITY / SUPPLEMENTARY: QUESTION PAPER

EXAMINER: **DR JEYA KENNEDY**

MODERATOR: **PROF PERCY CHIMWAMUROMBE**

INSTRUCTIONS:

1. Answer all questions on the separate answer sheet.
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS:

1. Non-Programmable Calculator

ATTACHEMENTS

NONE

This paper consists of 4 pages including this front page

SECTION A: SHORT ANSWER QUESTIONS [47 MARKS]

Please answer ALL of the questions in this section.

QUESTION 1: DISTINGUISH BETWEEN THE PAIRS OF THE FOLLOWING TERMS [8]
Each answer carries two marks

1.1 Simple fruits and aggregate

1.2 Albuminous and exalbumnious seed

1.3 Intrafascicular and interfascicular cambium

1.4 Phytochromes and cryptochromes

QUESTION 2: SHORT QUESTIONS [39]

The number of marks is given in brackets () at the end of each question

2.1 Name the four stages of embryogenesis in eudicots. (2)

2.2 You observe necrotic lesions on the leaves of a plant in your garden. Are they more likely caused by a hypersensitive response or to systemic acquired resistance (SAR)? Explain your answer. (2)

2.3 Phloem tissue is found in close association with xylem tissue. Explain the importance of this close association. (2)

2.4 Draw and label a diagram of an embryo sac. (3)

2.5 The figure 1 below represent self-incompatibility pollination. Give a brief explanation of each diagram. (3)

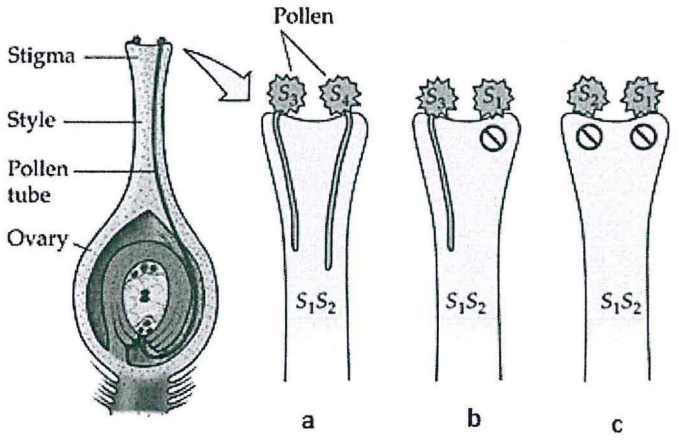


Figure 1

2.6 Name and describe the types of an inflorescences seen in figure 2. (4)

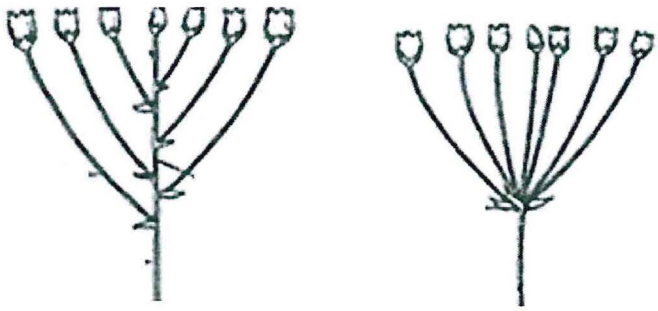


Figure 2

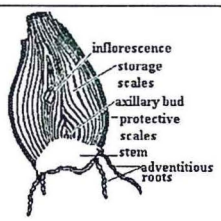
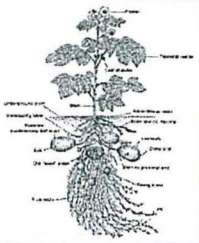
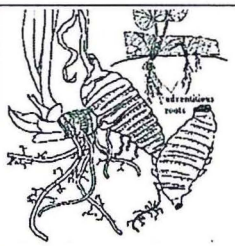
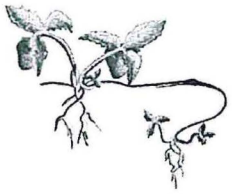
2.7 What type of fruit is a cucumber, and how is the pericarp structured? (3)

2.8 Differentiate between microsporogenesis and megasporogenesis. (4)

2.9 Sketch the internal structure of a dicot seed and label its parts. (5)

2.10 Discuss how flowers are classified based on floral asymmetry and composition categories. (5)

2.11 The table below contains diagrams of various methods of asexual reproduction. Study the diagrams 3 and fill in the information in the table as required. (6)

Diagram - 3				
Name of plant part				
Explanation of how a new plant is formed from this plant part				

SECTION B: LONG ANSWER QUESTIONS [23 MARKS]

QUESTION 3: LONGER QUESTIONS

3.1 What is the stomatal apparatus? Explain the structure of stomata with a labelled diagram. (7)

3.2 Describe four types of root modifications that provide mechanical support to plants, giving an example for each. (8)

3.3 Explain the biological mechanism of auxin's role in gravitropism. (8)

SECTION C: ESSAY QUESTIONS [30 MARKS]

Please answer **ANY TWO** of the questions in this section C.

QUESTION 4:

4.1 Explain why do plants abscise their leaves? Do all plants abscise their leaves at once? Describe the important tissue and physiological changes leading to leaf abscission. (15)

4.2 Describe secondary growth in dicot roots. (15)

4.3 Explain how do plants defend themselves from predators and respond to wounds? (15)

END OF QUESTION PAPER