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QUALIFICATION : **BACHELOR OF SCIENCE**	
QUALIFICATION CODE: **07BOSC**	LEVEL: **6**
COURSE: **PLANT STRUCTURE AND FUNCTION**	COURSE CODE: **PSF602S**
DATE: **NOVEMBER 2024**	SESSION: **1**
DURATION: **3 HOURS**	MARKS: **100**

FIRST OPPORTUNITY: 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

1. None

This paper consists of 3 pages including this front page

SECTION A: SHORT ANSWER QUESTIONS [27 MARKS]

Please answer ALL of the questions in this section.
The number of marks is given in brackets () at the end of each question

QUESTION 1: SHORT QUESTIONS

1.1 Define idioblasts. (1)

1.2 Name the chemical secreted by plants in partnership with mycorrhizal fungi and rhizobia bacteria. (2)

1.3 Distinguish between scarification and stratification. (2)

1.4 Mention the types of photoreceptors in plants. (2)

1.5 Distinguish between sink and source. (2)

1.6 What is the role of *Nicotiana attenuata*, a species of wild tobacco, in response to mechanical damage caused by herbivores, and how does this alteration in the plant's physiology serves as a deterrent against future herbivore attacks? (4)

1.7 The given figure 1 below represents a typical root structure. What type of root and mention its functions. (4)

(a) (b)

Fig 1

1.8 Provide the correct term for the following statements: (5)

(a) The formation of a new generation of plants from one parent only.
(b) The swollen underground stem of a potato.
(c) The joining of two compatible plants so that the tissues of the two plants grow or merge together.
(d) Only takes a few cells and are grown in a lab situation
(e) A stem section that contains some node is cut and placed in soil

1.9 In tabular form, distinguish between racemose and cymose inflorescence, and give an example for each. (5)

SECTION B: LONG ANSWER QUESTIONS [43 MARKS]

QUESTION 2: LONGER QUESTIONS

2.1 Discuss how flowers are classified according to the sexes categories. (6)

2.2 In tabular form, distinguish between dicot and monocot seeds, providing one example of each. (6)

2.3 Describe the rapid response of the Venus flytrap to the stimulation of hairs on the lobes of its modified leaves and explain how the trap's closure is achieved. (6)

2.4 Describe the structure of a pollen wall and provide a well-labelled diagram. (7)

2.5 With neat, labelled diagram, describe the parts of a typical angiospermic megasporangium. (8)

2.6 Explain how fruits are classified based on the nature of the pericarp and the number of carpels? Provide one example for each classification. (10)

SECTION C: ESSAY QUESTIONS [30 MARKS]

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

QUESTION 3:

3.1 Describe the structure of the stomata with a labelled diagram and explain the mechanism of stomatal closure. (15)

3.2 Early angiosperm embryos undergo a series of developmental changes as a seed matures. Explain this sequence of embryogenesis in eudicots. (15)

3.3 With a neat cellular diagram, explain the anatomy of dicot root. (15)

END OF QUESTION PAPER