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UNIVERSITY OF NAMIBIA

FACULTY	AGRICULTURE, ENGINEERING & NATURAL SCIENCES		
SCHOOL	SCIENCE		
DEPARTMENT	ENVIRONMENTAL SCIENCE		
SUBJECT	PLANT FORM AND FUNCTION		
SUBJECT CODE	BLG 3612		
DATE	OCTOBER/NOVEMBER 2022		
DURATION	3 Hours	**MARKS**	100

SUMMER TERM EXAMINATION

Examiners: Dr W.C. Nesongano, Mr H. Eiman, Dr L. Horn, Ms S. Nafuka, Dr C. Amoo, and Dr D. Kavishe

Internal Moderator: Prof E.G. Kwembeya (University of Namibia)

External Moderator: Prof C.T. Downs (University of KwaZulu-Natal)

This **Examination paper** consists of **three** (3) pages (including the front page)

Instructions
- Answer **all** questions from Section A.
- Answer **only 1** question from Section B.
- Label all your answers appropriately and neatly.

UNIVERSITY OF NAMIBIA EXAMINATIONS

SECTION A

Answer all questions in this section (75 marks)

Question 1 (25 marks)

1.1 Multiple choice questions (please select the correct answer for each question)

1. The stalk of the flower is also known as the: (1)
   (a) petiole.
   (b) pedicel.
   (c) thalamus.
   (d) rachis.

2. The outermost whorl of a flower is called the: (1)
   (a) petal.
   (b) sepal.
   (c) stamen.
   (d) pistil.

3. Pollination in flowering plants means: (1)
   (a) the transfer of pollen from the stigma to the anthers.
   (b) the transfer of pollen from the stigma to the ovary.
   (c) the transfer of pollen from the anther to the stigma.
   (d) the transfer of pollen from the style to the ovary.

1.2 Define the following terms:

(i) Apomixis (2)
(ii) Seed dormancy (2)
(iii) Meristems (2)

1.3 Differentiate between spores and gametes. (6)

1.4 Name and provide the function for each of the two types of vascular tissue in plants. (4)

1.5 How do flowers attract pollinators? (6)

Question 2 (25 marks)

2.1 List any **five** characteristics common to Bryophytes (non-vascular plants). (5)

2.2 With the aid of relevant examples, explain two main functions of modified stems. (8)

2.3 Briefly discuss the purpose of leaf abscission. (4)

2.4 Humans use different plant parts for different reasons. What are the main human uses of leaves? (8)

Question 3 (25 marks)

3.1 Explain how phloem sap moves through a sieve tube by bulk flow driven by positive pressure. (5)

3.2 Briefly explain the differences between meiosis and mitosis as the two types of cell division. (4)

3.3 Explain the stages of embryo development in plant reproduction. (8)

3.4 Describe **four** major ways in which bat-pollinated flowers typically differ from bee-pollinated ones. (8)

Sub-total marks (Section A) = 75

SECTION B: ESSAYS SECTION

Answer only ONE complete question (either all of Question 1 or Question 2) from this section (25 marks)

Question 1

1.1 Explain the three phases of plant growth in detail. (9)

AND

1.2 Name and briefly discuss any four of the five major plant growth hormones and their functions. (16)

OR

Question 2

2.1 Discuss the adaptations of desert succulents to cope with life in an arid environment. (10)

AND

2.2 Discuss some strategies used by plants to attract pollinators. (15)

Sub-total marks (Section B) = 25

Grand Total Marks = 100

END OF EXAMINATION