



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH AND APPLIED SCIENCES
DEPARTMENT OF NATURAL AND APPLIED SCIENCES**

QUALIFICATION: BACHELOR OF SCIENCE (MAJOR AND MINOR)	
QUALIFICATION CODE: 07BOSC	LEVEL: 6
COURSE CODE: PSF602S	COURSE NAME: PLANT STRUCTURE AND FUNCTION
SESSION: JANUARY 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	DR JEYA KENNEDY
MODERATOR:	DR JONATHAN MUTAU KAMWI

INSTRUCTIONS	
<ol style="list-style-type: none">1. Write clearly and neatly2. Number the answers clearly3. All written work MUST be done in blue or black ink4. No books, notes and other additional aids are allowed5. Mark all answers clearly with their respective question numbers	

ATTACHMENTS
NONE

THIS QUESTION PAPER CONSISTS OF 4 PAGES
(Including this front page)

QUESTION 1:

Multiple choices

[5]

- 1.1 Meristem tissue that gives rise to epidermal tissue is called; (1)
a) procambium
b) ground meristem
c) epidermis
d) protoderm
- 1.2 Plants with an alternate leaf arrangement have; (1)
a) blades divided into two or more leaflets
b) major veins that radiate out from one point
c) one leaf at each node
d) two leaves at each node
- 1.3 The two lateral meristems responsible for secondary growth are; (1)
a) phloem and xylem
b) cork cambium and vascular cambium
c) epidermis and periderm
d) primary xylem and secondary xylem
- 1.4 Stele is composed of; (1)
a) pericycle, xylem, phloem
b) pericycle, endodermis, phloem
c) pericycle, casparian strip, xylem
d) endodermis, casparian strip, xylem
- 1.5 Which group of seeds wait for rainfall to break the dormancy? (1)
a) pea
b) apple
c) cacti
d) orchid

QUESTION 2:

Fill in the blanks

[4]

- 2.1 A _____ compound leaf has all the leaflets attached at the same point at the end of the petiole. (1)
- 2.2 _____ anchor plants to the ground. (1)
- 2.3 The waterproof region around the radial and transverse walls of endodermal cells in the root is known as _____. (1)
- 2.4 The bending of a plant's stem toward light is an example of a _____. (1)

QUESTION 3:

Define the following terms [5]

- 3.2 Dermal tissue system (1)
- 3.2 Guttation (1)
- 3.3 Pericycle (1)
- 3.4 Androecium (1)
- 3.5 Imbibition (1)

QUESTION 4:

Distinguish between the pairs of the following terms. [10]

- 4.1 Indeterminate growth; determinate growth (2)
- 4.2 Heartwood; sapwood (2)
- 4.3 Actinomorphic; zygomorphic flower (2)
- 4.4 Simple fruits; multiple fruits (2)
- 4.5 Scarification; stratification (2)

QUESTION 5:

Short questions [13]

- 5.1 Which macronutrient element is needed for opening of stomata in plant? (1)
- 5.2 Define water potential. (2)
- 5.3 Distinguish between the hypersensitive response and systemic acquired resistance. (2)
- 5.4 Name four plant structures that are adapted for vegetative reproduction. (2)
- 5.5 Mention two types of venation with examples. Mention the function of underground stem of ginger. (3)
- 5.6 Name three common methods of seed dispersal and give an example of each method. (3)

QUESTION 6:

Longer questions

[18]

- 6.1 What are mesophytes, xerophytes, and hydrophytes, and how are the epidermis and cuticles of each modified to permit growth in their respective habitats? (5)
- 6.2 Define humus and why is humus an important component of fertile soil? (5)
- 6.3 Outline the physiological changes that accompany stomatal opening and closing. (8)

QUESTION 7:

Essay question

[45]

- 7.1 Describe the steps of a female gametophyte development and explain these terms by means of suitable diagrams. (10)
- 7.2 Sketch and explain the main stages of eudicot seed structure. (10)
- 7.3 Describe at least five leaves, and roots that are modified to perform uncommon function of several adaptations. (10)
- 7.4 Describe the internal structure of a dicot root. Draw its labeled diagram. (15)

END OF EXAM