



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF NATURAL RESOURCES AND SPATIAL SCIENCES

DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCE

QUALIFICATION: BACHELOR OF NATURAL RESOURCE MANAGEMENT IN NATURE CONSERVATION	
QUALIFICATION CODE: 07BNTC	LEVEL: 7
COURSE CODE: PTS620S	COURSE NAME: PLANT STUDIES 1
DATE: January 2019	PAPER: THEORY
DURATION: 3 Hours	MARKS: 130

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	DR. J.M. KAMWI
MODERATOR:	MRS. G.L. THERON

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL six (6) questions.2. Read all questions carefully before answering.3. Number your answers clearly.4. Make sure your student number appears on the answering script.

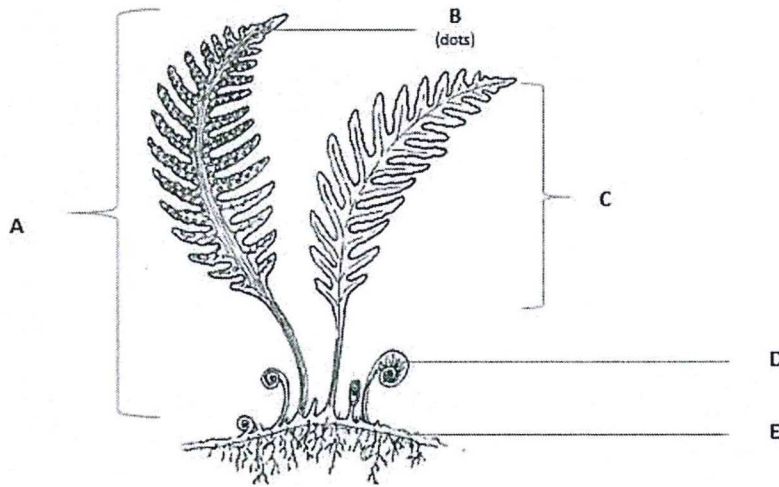
PERMISSIBLE MATERIALS

1. Examination paper.
2. Examination script.

THIS QUESTION PAPER CONSISTS OF 3 PAGES (Including this front page)

Question 1:

- 1.1 Name the 3 Pteridophyta phyla you have covered (scientific names) and provide the diagnostic characteristics of each phylum. [6]
- 1.2 Name 3 living Phyla of Bryophyta that you have studied (scientific names). [3]
- 1.3 Below is a line drawing of a true fern. Label A- E. [5]



- 1.4 Give a schematic representation (in words) of the life-cycle of the "true" moss (Bryophyta) e.g. *Polytrichum* to clearly show the alternation of generations. [12]
- 1.5 Briefly explain what a rhizoid is and mention its **two** primary functions. [3]
- 1.6 Why is the life cycle of some plants known as the alternation of generations? [4]

Question 2:

- 2.1 How does the arrangement of the vascular tissue differ in the monocot and dicot stem? [4]
- 2.2 Do monocot stems have a vascular cambium? Provide a reason for your answer. [2]
- 2.3 What is the difference between the stems of monocots and dicots? [2]
- 2.4 Briefly discuss the general function of the leaf mesophyll? [4]
- 2.5 How is the leaf structure mentioned in 2.4 adapted to carry out its function? [2]

Question 3:

Distinguish between the following pairs of terms:

- 3.1 Actinomorphic flower; zygomorphic flower [2]
- 3.2 Epigynous flower; hypogynous flower [2]
- 3.3 Apical meristems; lateral meristems [2]
- 3.4 Synsepalous; sympetalous [2]

Question 4:

- 4.1 Discuss the diversity of stems by giving examples of several adaptations. [8]
- 4.2 Draw a fully labeled diagram of a bipinnate leaf and give an example of a species that has this type of leaf (drawing 2 marks; labels 4 marks; species 2 marks). [8]
- 4.3 Draw a fully annotated diagram of a typical angiosperm leaf (drawing 3 marks; labels 9 marks). [12]

Question 5:

- 5.1 Explain the difference between the following pairs of terms:
- 5.1.1 Berry and drupe [2]
 - 5.2.2 Aggregate and multiple/compound fruit [2]
 - 5.2.3 Samara and capsule [2]
 - 5.2.4 Stolon and a rhizome [2]
 - 5.2.5 Tuber and bulb [2]
 - 5.2.6 Bilobed and bifoliolate leaves [2]
 - 5.2.7 Pinnate and bipinnate leaves [2]
 - 5.2.8 Pinna and pinnule [2]
 - 5.2.9 Decussate and sessile [2]
- 5.2 Briefly discuss **any** five adaptations of desert plants to reduce water loss through transpiration. [10]

Question 6:

- 6.1 Define the term "centre of endemism". [3]
- 6.2 Briefly discuss the **two** centres of endemism in Namibia. Provide the location, topography, precipitation and threats to their existence. [10]
- 6.3 Briefly discuss **three** botanical hotspots in Namibia focussing on their locations, vegetation types and reasons for the high vegetation diversity. [6]

Total [130]