

UNIVERSITY OF FORT HARE

BOT 121

DEGREE EXAMINATIONS

NOVEMBER 2018

TIME: 3HOURS

MARKS: 100

SUBJECT: BOTANY 121

**PAPER: INTRODUCTION TO ECOLOGY, PHYSIOLOGY AND
PLANT DIVERSITY**

This paper consists of THREE pages including the cover page

**EXAMINERS: Prof A Maroyi
Dr B Mayekiso
Ms Z Mhinana**

ANSWER ALL QUESTIONS FROM EACH SECTION

**Illustrate your answers, wherever possible with carefully labelled drawings
or diagrams**

SECTION A

Question 1

Use both, a written answer and illustrations to explain the following:

- a) Clumped dispersion of populations (6)
- b) Uniform dispersion of populations (6)
- c) Random dispersion of populations (6)

Question 2

- a) List and discuss the three key elements of the Ecological Species Concept (6)

Question 3

- a) Discuss the differences between herbivores and decomposers (3)
- b) Discuss the differences between carnivores and omnivores (3)
- c) Discuss the differences between the abiotic and biotic components of an ecosystem (3)
- d) Discuss the differences between competition and mutualism (2)

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SECTION B

Question 4

Define OR explain the following terms

- i) Micronutrient
- ii) Water potential
- iii) Hypertonic solution
- iv) Metamorphic rock
- v) Circadian rhythm
- vi) Permeability
- vii) Tropism
- viii) Geotropism
- ix) Transpiration
- x) Guttation

(10)

b) Inorganic nutrients fill a basic need and involve in such fundamental processes, the deficiencies affect a wider variety of structure and function of a cell. Discuss this statement with reference to the following:

- i) Catalysts
- ii) Electron transport
- iii) Structural component of a cell
- iv) Osmosis
- v) Effects of cell permeability (10)

c) What does the day-length **HAVE** on flowering? (10)

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SECTION C

Question 5

- a) Discuss the life cycle of Angiosperms (15)
- b) List five characteristics of Bryophytes (5)
- c) What are the economic importance of gymnosperm (5)
- d) Name the four major groups of plants (4)
- e) Name 3 divisions of Bryophytes and give examples of each (6)

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