UNIVERSITY OF FORT HARE

BOT 211

DEGREE EXAMINATIONS

JUNE 2023

TIME: 3 HOURS MARKS: 100

SUBJECT: BOTANY 211

PAPER: AN EVOLUTIONARY SURVEY OF THE PLANT KINGDOM

This paper consists of two pages including the cover page

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ANSWER ALL QUESTIONS

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

ANSWER FOUR QUESTIONS

QUESTION 1

a) Use a diagram to present an overview of the broad classification of plants? Show the characters used to separate between them (10)
b) Darwin proposed a mechanism for organic evolution. Name his theory and its main aspects (5)
c) Name and explain four (4) sources of organic variation essential for evolution to take place (10

[25]

QUESTION 2

a) Explain what is meant by diplohaplontic life cycle and distinguish between the two types of this life cycle (10)
b) Define
   i) heterospory
   ii) homospory
   iii) eusporangiate
   iv) leptosporangiate
   v) monoecious (5)
c) Draw a diagram to describe the life cycle of *Selaginella* and point out significant features of this cycle (10)

[25]

QUESTION 3

a) Discuss the classification, distribution, ecology, vegetative and reproductive morphology of the unique southern African plant, *Welwitschia mirabilis* (15)
b) Describe with diagrams, the typical dicotyledon floral structure (10)

[25]

QUESTION 4

a) What is a stromatolite and describe its structure (4)
b) Describe the general sexual life cycle of bryophytes (10)
c) Name the African species of Pteridophyta: Psilopsida and describe its vegetative morphology (8)
d) Name any three (3) thallus types found in algae (3)

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