

BOT1501

October/November 2017

PLANT STRUCTURE: CYTOLOGY, MORPHOLOGY AND ANATOMY

Duration 2 Hours

100 Marks

EXAMINERS

FIRST

MR AR MUDAU

SECOND

MS LT MANKGA

Closed book examination

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue

This paper consists of FOUR (4) pages.

ANSWER ALL THE QUESTIONS IN THE EXAMINATION ANSWER BOOK PROVIDED.

[TURN OVER]

QUESTION 1

Describe the following terms

- 4 1 Classification (2)
- 4 2 Evolution (2)
- 4 3 Leucoplasts (2)
- 4 4 Zygote (2)
- 4 5 Natural selection (2)
- 4 6 Ethnobotany (2)

[12]**QUESTION 2**

Match each group in column A to one relevant reproduction in column B Write down the number and the letter only, for example 6. f **Do not rewrite the whole sentence**

Column A	Column B
1 Lycophytes	a Seeds in cones, eggs and sperm (the sperm of some groups, but not all of them, have flagella)
2 Molds	b Single-celled spores, eggs and flagellate sperm
3 Gymnosperms	c Flowers, seeds in fruits, eggs and non-flagellate sperm
4 Yeasts	d Reproduce asexually through budding
5 Angiosperm	e Reproduce asexually through spores

[5]**[TURN OVER]**

QUESTION 3

Distinguish or explain the difference between the following

- 3 1 Primary and secondary growth (4)
- 3 2 Autotrophic and heterotrophic organisms (4)
- 3 3 Angiosperms and gymnosperms (4)
- 3 4 Light and electron microscope (4)
- 3 5 Prokaryotes and eukaryotes (4)

[20]

QUESTION 4

- 4 1 Differentiate between eukaryotic cells and prokaryotic cells (8)
- 4 2 List two functions of cell membrane proteins (4)
- 4 3 Compare the collenchyma and sclerenchyma cells with respect to their structure and functions (8)

[20]

QUESTION 5

- 5 1 Briefly describe five different methods of seed dispersal (10)
- 5 2 Name at least five different types of modified stems and give the function of each (10)
- 5 3 Summarize the advantage of asexual and sexual reproduction in plants (4)

[24]

[TURN OVER]

QUESTION 6

- 6 1 Describe the five factors that, according to the Hardy-Weinberg equilibrium, cause the frequency of alleles to remain constant in a population (10)
- 6 2 Explain the contribution that Carolus Linnaeus made to binomial nomenclature (6)
- 6 3 List three scientific names of South African plants (3)

[19]**TOTAL: 100 marks**