

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF SCIENCE IN BOTANY**

BOTA 405: PLANT EVOLUTION

STREAMS: BSC (BOTANY) Y4S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 18/04/2019

8.30 AM – 10.30 PM

INSTRUCTIONS:

Answer ALL Questions in Section A and any other Two in Section B

SECTION A (30 MARKS)

1. Outline the processes of plant evolution during the Devonian period. [4 marks]
2. Explain how evolution changed the physical and biological world. [6 marks]
3. Specify the role of apomixis in plant evolution. [4 marks]
4. Describe the types of plant fossils. [6 marks]
5. State five factors that provide polyploids with evolutionary advantages. [5 marks]
6. Explain how plant chemical compounds improve adaptability to the environment. [5 marks]

SECTION B (40 MARKS)

7. Discuss the evolution of the following tissues:
 - (a) Vascular tissue [10 marks]
 - (b) Leaves [10 marks]
8. Discuss the strategies that promote out-crossing in plants. [20 marks]

9. (a) Discuss the process by which prokaryotes gave rise to the first eukaryotes. [10 marks]
- (b) Elaborate the evidence that eukaryotes evolved from prokaryotes. [10 marks]
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