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UNIVERSITY EXAMINATIONS 2022/2023 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY

COURSE CODE: SBT 323

COURSE TITLE: MICROBIAL ECOLOGY

DATE: 26TH APRIL 2023

TIME: 2.00 - 4.00 PM

INSTRUCTIONS TO CANDIDATES

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

Question one

a) Explain the following terms as used in microbial ecology

(5 marks)

- i. Chemotaxis
- ii. Motility

b) Differentiate endomycorrhiza from ectomycorrhiza

(5 marks)

c) Explain the carbon cycling in the case of ocean environment

(5 marks)

d) Briefly explain the role of microorganisms in the sulphur cycle

(5 marks)

e) Explain how excess phosphorus caused by fertilizers leaching into water systems is dangerous in water ecosystems

(5 marks)

f) Explain any two destructive host microbe interactions

(3 marks)

g) Explain the goal of controlling the presence of microorganisms

(2 marks)

Question two

Discuss the various classes of chemotherapeutic agents used in controlling microorganisms

(20 marks)

Question three

Explain the importance of mycorrhizae as a plant-microbe interaction

(20 marks)

Question four

Discuss the processes and the role of microorganisms in the biogeochemical cycling of nitrogen.

(20 marks)

Question five

Discuss various categories of pathogenic organisms; in each case describe the characteristics and give an example of an organism and the disease it causes.

(20 marks)