



ELIZADE UNIVERSITY,
ILARA-MOKIN, NIGERIA

FACULTY: BASIC & APPLIED SCIENCES

DEPARTMENT: BIOLOGICAL SCIENCES

SECOND SEMESTER EXAMINATION

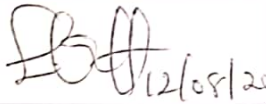
2020/2021 ACADEMIC SESSION

COURSE CODE: MCB 408

COURSE TITLE: SOIL MICROBIOLOGY

COURSE Unit(s): 2 UNITS

DURATION: 2 hours


12/08/2021

HOD's SIGNATURE

NAME:.....

MAT. No:.....

INSTRUCTIONS Answer any three questions in all, with atleast one from each section. Each question carries 20marks.

Section A

- 1a. What are the ways microorganisms effect the solubilisation of mineral phosphates?
- b. List the five (5) basic components of the soil.
- c. Describe the distribution of microorganisms in the soil based on their proportion
- d. What are the characteristics of microbial flora in the soil specifically bacteria?

(20 marks)

- 2a. Explain briefly three (3) specific importance of fungi in microbial ecology
- b. State five (5) conditions in soil that influence the number of viruses.
- c. Describe the role of microbial flora in the sulphur cycle.
- d. Write brief note on the activities of actinomyces in the soil

(20 marks)

- 3a. Describe five (5) characteristics of the soil environment.
- b. Write briefly on the two (2) natural or biological processes of nitrogen fixation
- c. Define denitrification and give examples of microorganisms involved in this process
- d. What role do methanogens and methanotrophs play in the carbon cycle?

(20 marks)

Section B

- 1a. Write concisely on the following ecological relationships
 - i. Antibiosis
 - ii. Predation
 - iii. Photo-cooperation
 - iv. Commensalism
- b. With the aid of annotated diagram ONLY, discuss the strategies of Bioremediation.

c. Discuss briefly, the mutual interaction between plants and microorganisms.

(20 marks)

2a Evaluate the benefits and effects of pesticides on the soil environment

b. Write short notes on the following terms

- i. Biodegradation
- ii. Mitigation
- iii. Biotransformation
- iv. Soil phytoedaphon

(20 marks)