



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
KM 4 Kaduna - Zaria Expressway Riga Chikun Kaduna
DEPARTMENT OF CROP AND SOIL SCIENCES
EXAMINATION: 2022_2 EXAMINATION

COURSE CODE: SLM 305

COURSE TITLE: Introductory Soil Chemistry, Fertility and Micro-biology

INSTRUCTIONS: Answer five questions in all. Question one is compulsory 30 marks and any four questions 10 marks each.

TIME ALLOWED: 3 hours

QUESTION

- 1)
 - (a) 'Soil chemistry, water chemistry and pollution science are related' Justify (10 marks)
 - (b) What is the determinant of the composition of the soil gaseous phase (10 marks)
 - (c) List two (2) bacteria genera that are responsible for Nitrogen fixation (10 marks)
- 2)
 - (a) What are the effects of soil organic matter on phosphorus (P) availability to crops (5marks)
 - (b) Explain the effect of soil clay content on phosphorus (P) availability (5marks)
- 3)
 - (a) Mention the factors affecting Zinc (Zn) availability to crops (5marks)
 - (b)Mention the factors affecting copper (Cu) availability to crops (5marks)
- 4)
 - (a) What are saline soils (5marks)
 - (b) Mention the main causes of saline soils (5marks)
- 5) Explain in detail:
 - (a) Saline-Sodic Soils (5 marks)
 - (b) Saline-Alkaline Soils (5 marks)
- 6) List and explain two (2) different ways plants uptake nutrients from soil (10 marks)
- 7)
 - (a) Mention the effects of nematodes on plants (5marks)
 - (b) State the importance of Algae in the soil (5marks)