



**NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP AND SOIL SCIENCES
2023_1 POP EXAMINATION**

COURSE CODE: SLM 305

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

INSTRUCTIONS: Answer four questions in all. Question one is compulsory 25 marks and any three questions 15 marks each.

TIME ALLOWED: 3 hours

QUESTIONS

Q1

- (a) What is the relationship between soil chemistry, geo-chemistry and soil formation (10 marks)
- (b) In Molybdenum studies (Mo), high lime application results in high level of Mo. Mention the deficiency symptoms of Mo arising from this high application of lime (5 marks)
- (c) Despite the importance of organic matter on soils with respect to soil fertility, it has also been established to have disadvantages. Mention these disadvantages of organic matter on Nigerian soils (10 marks)

Q2

How does soil pH affect the availability of micro-nutrients cations in the soil (15 marks)

Q3

- (a) State two symptoms of Iron (Fe) deficiency in soils (5 marks)
- (b) In the soil system, list the minerals that you can find Iron (Fe) (10 marks)

Q4

- (a) What are saline soils (10 marks)
- (b) Out-line the causes of soil salinity (5 marks)

Q5

In what ways can you sustainably maintain soil organic matter on Nigerian soils (15 marks)