



NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, Nnamdi Azikiwe Expressway, Plot 91, Cadastral Zone, Jabi,
Abuja
Faculty Agricultural Sciences
DEPARTMENT OF CROP AND SOIL SCIENCES
2020_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 and it carries 30 marks. Any other four questions of 10 mark each.

TIME ALLOWED: 3 hours

- 1) (a) Explain in detail why organic matter has little capacity to fix Phosphorus ions (P ions). (10 marks)
(b) (i) State the two main roles of Iron (Fe) in plants. (5 marks)
(ii) Mention deficiency symptoms of Fe in plants. (5 marks)
(c) Explain in detail, the importance of fungi in soils. (10 marks)
- 2) Based on the source of food for soil micro-organisms, differentiate between
(a) Photoautotrophs (5 marks)
(b) Chemoautotrophs (5 marks)
- 3) Molybdenum (Mo) is a micro-nutrient with noticeable roles in plants. Mention the functions of Mo in plants (10 marks)
- 4) Explain in detail, the importance of earth worms in soil micro-biology (10 marks)
- 5) Adsorption is the process of concentrating materials at the inter phase of two phases. Mention the characteristics of Adsorption in soils. (10 marks)
- 6) Describe the soil micro-organism, Actinomycetes and state its importance. (10 marks)
- 7) Organic matter is an important portion of the soil as it has the capacity to modify soil physical properties. But it has disadvantages. Mention the disadvantages of organic matter in soils. (10 marks)