



National Open University Of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
OCTOBER/NOVEMBER 2016 EXAMINATION

COURSE TITLE: SOIL ECOLOGY

COURSE CODE: BIO 408

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER **QUESTION 1** AND **ANY OTHER THREE** QUESTIONS

1. (a) Explain why soil taxonomy is said to be a hierarchical classification system (3 marks)
(b). Discuss the applications of soil and plant tests; explain the implications of the results (10 marks)
(c). With the aid of a **schematic diagram**, discuss the nitrogen cycle (12 marks)
2. Present the important groups of soil organisms in **a table** under the headings shown below:
 - (i). General Grouping (5 marks)
 - (ii). Specific grouping (5 marks)
 - (iii). Named examples. (5 marks)
3. (a). The primary minerals found in soils can be grouped in terms of size of fraction into **very coarse, coarse, fine** and **very fine**. Present this in **a table** providing the common name of each fraction group, means of observation and dominant composition (10 marks)
(b). What are the ways by which carbon dioxide is released in the carbon cycle? (5 marks)
4. (a). Briefly discuss **three** main sources of soil nutrient. (9 marks)
(c). Compacting a soil would likely reduce the amount of water available to growing plants. Give **four** reasons for this condition. (6 marks)
5. What factors limit nutrients in the soil? Discuss (15 marks)
6. Discuss briefly the following:
 - (i). Soil water content - potential relationship (8 marks)
 - (ii). Soil osmotic potential. (7 marks)