



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
SEPTEMBER/OCTOBER 2015 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: BIO 408
COURSE TITLE: SOIL ECOLOGY

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER THREE QUESTIONS

1. (a). With a good schematic diagram, discuss the carbon cycle (12 marks)
(b). Discuss the cation exchange capacity of soil (13 marks)
2. (a). Discuss briefly the basic types of biogeochemical cycle (10 marks)
(b). Define the following terms:
 - (i) Detritivous and (2.5 marks)
 - (ii) Detoxification in soil. (2.5 marks)
3. What factors limit nutrients in the soil? Discuss them. (15 marks)
4. (a). Briefly Discuss three main sources of soil nutrient . (9 marks)
(b). Compacting a soil would likely reduce the amount of water available to growing plants. Give **four** reasons for this. (6 marks)
5. Present the important groups of soil organisms in **a table** under the headings shown below: (15 marks)
 - (i). General Grouping
 - (ii). Specific grouping
 - (iii). Examples
6. Discuss briefly the following:
 - (i). Soil water content - potential relationship (8 marks)
 - (ii). Soil osmotic potential (7 marks)

(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 giving the common name of each fraction group, means of observation and dominant composition. (15 marks)