



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**  
**Faculty of Science**  
**JULY 2017 EXAMINATION**

**COURSE TITLE: SOIL ECOLOGY**

**COURSE CODE: BIO 408**

**CREDIT: 2 units**

**TIME ALLOWED: 2 HOURS**

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

1. (a). With a good schematic diagram, discuss the nitrogen cycle (12 marks)  
(b). Discuss the cation exchange capacity of soil (13 marks)
2. Discuss briefly the following:  
(i). Soil water content - potential relationship (8 marks)  
(ii). Soil osmotic potential (7 marks)
3. (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)
4. What factors limit nutrients in the soil? Discuss them. (15 marks)
5. (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)
6. 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

