



NATIONAL OPEN UNIVERSITY OF NIGERIA

PLOT 91 UNIVERSITY VILLAGE, JABI CADASTRAL ZONE, AIRPORT ROAD, JABI, ABUJA

FACULTY OF SCIENCES

Department of Biological Sciences

2022_2 EXAMINATION

COURSE TITLE: SOIL ECOLOGY

COURSE CODE: BIO 408

TIME ALLOWED: 2 HOURS

CREDIT UNIT: 2 CREDIT UNITS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER TWO QUESTIONS

- 1(a) Briefly describe Nomenclature of soil taxonomy (**5marks**)
 - (b) Write short notes on
 - (i) Alfisols and distribution uses (**4marks**)
 - (ii) Anisols and distribution use (**4marks**)
 - (c) Write short notes on the following
 - (i) Suborders as categories and nomenclature of soil taxonomy (**4marks**)
 - (ii) Families as categories in soil taxonomy (**4marks**)
 - (d) Explain
 - (i) Soil Density (**3marks**)
 - (ii) Atmosphere as a source of nutrients (**3marks**)
 - (e) Briefly describe soil reaction (**3marks**)
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- 2(a) Nutrients are essentially needed for plant growth. Discuss (**5marks**)
 - (b) (i) Write a comprehensive note on Soil pH (**8marks**)
(ii) Define soil or sediments as source of nutrients (**3marks**)
 - (c) Explain moisture as factors limiting nutrients (**4marks**)
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- 3(a) State three characteristics of biogeochemical cycle (**3marks**)
 - (b) (i) Mention any two biogeochemical cycle types with examples (**3marks**)
(ii) Highlight four sources of organic materials (**4marks**)
 - (c) Write a short note on Transformation of inorganic (**5marks**)
 - (d) Briefly describe ecosystem dynamics of soil microorganism (**5marks**)
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- 4(a) Briefly describe Microbial Diversity (**5marks**)
 - (b) Write on Mineral Matrix (Inorganic/organic soils) (**5marks**)
 - (c) Succinctly describe the chemical nature of soil (**6marks**)
 - (d) How does moisture and temperature affect growth of soil organism? (**4marks**)

- 5(a) Explain soil compaction (**5marks**)
- (b) Write short notes on soil aeration (**4marks**)
- (c) Describe soil depth and layering (**6marks**)
- (d) List five primary pools of nutrients (**5marks**)