



**NATIONAL OPEN UNIVERSITY OF NIGERIA**

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

**FACULTY OF SCIENCES**

Department of Biological Sciences

**2023\_1 POP 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) In a tabular form explain in details the three forms of soil rock formation and their composition (**6marks**)
- (b) Briefly explain the following impact on soil formation
- (i) Biota (**3marks**)
  - (ii) Topography (**3marks**)
- (c) Write short notes on the following:
- (i) Climate as factor that affects soil formation (**4marks**)
  - (ii) Physical weathering as a factor affecting soil formation (**4marks**)
- (d) Explain sub-surface horizon (**10marks**)
2. Discuss the cation exchange capacity of soil (**20 marks**)
- 3(a) Explain the following:
- (i) Inceptisols (**3marks**)
  - (ii) Histosols (**3marks**)
- (b) Briefly describe plant-stalk nitrate (**3marks**)
- (c) Summarize the classification of soil based on soil moisture regime (**5marks**)
- (d) Discuss Soil water content - potential relationship (**6 marks**)
- 4(a) Soil or sediments as source of nutrients. Discuss (**5marks**)
- (b) 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
- 5(a) (i) Explain Gelisols (**4marks**)
- (ii) How are Gelisols distributed and what are their uses (**3marks**)
- (b) Give a detailed description of the Histosols, their distributions and uses (**5marks**)
- (c) Write a comprehensive note on soil order (**8marks**)