NATIONAL OPEN UNIVERSITY OF NIGERIA

Plot 91, Casdestral Zone, Nnamdi Azikwe Expressway, Jabi Abuja

Faculty of Sciences

Department of Pure and Applied Sciences

April / May 2019 Examination

COURSE CODE: BIO408 **CREDIT UNIT: 2**
COURSE TITLE: SOIL ECOLOGY **DURATION: 2 HRS**
INSTRUCTION: *Answer **Question one** and any **other three** questions*

1(a). Complete the table below of the important groups of soil organisms **(10 marks)**

Generalized Grouping	**Specific Grouping**	**Examples**
Macrofauna (>2 mm)		
Macroflora		
Mesofauna (0.1 – 2 mm)		
Microfauna(<0.1mm)		
Microflora(<0.1mm)		

(b). What are the ways by which carbon dioxide is released in the carbon cycle? **(5 marks)**

(c). The primary minerals found in soils can be grouped in terms of size of fraction into very coarse, coarse, fine and very fine. Fill in the blank spaces on the table below for the common name of the fraction groups, means of observation and dominant composition**. (10 marks)**

Size fraction	**Common name**	**Means of observation**	**Dominant composition**
			Rock fragments
Coarse	Sands		
Fine			
	Clay	Electron microscope	

2. With the aid of a schematic diagram, discuss the nitrogen cycle. **(15 marks)**

3. Describe the phosphorus cycle using a well labeled schematic diagram and explain how phosphorus is recycled locally in most ecosystems. **(15 marks)**

4. (a). Write briefly on the following:
(i). Soil Families (**5 marks)**
(ii). Soil Series (**3 marks)**

4 (b). Discuss the applications of plant tests; explain the implications of the results. **(7 marks**)

5 (a). Briefly discuss the atmosphere as a source of nutrients. **(4marks)**

(b). Give three reasons why soil compaction would likely reduce the amount of water available to growing plants. **(3 marks)**

(c). Briefly discuss **Soil Water Content - Potential Relationship. (8 marks)**