

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
DEPT. OF SOIL SCIENCE AND TECHNOLOGY
HARMATTAN SEMESTER EXAMINATIONS FOR 2009/2010 SESSION
COURSE CODE: SST 501 (Soil Biology and Biochemistry)

INSTRUCTIONS: Attempt 5 Questions 3 from section A including 1 and 2 from section B. Time Allowed: 3 hrs.

Section A: Answer 3 questions including No. 1.

1. Discuss the implication of soil biology and biochemistry in soil fertility management.

- 2(a) Define or explain the term lichens and explain its important roles.
(b) Itemize the 3 basic enzymatic transformation necessary to plant growth but specific to bacteria.

- 3(a) Distinguish between litter breakdown and litter decomposition.
(b) Using a clearly labeled diagram explain the carbon cycle.
(c) Itemize the factors affecting organic matter decomposition.

- 4(a) Define the terms (i) soil biomass (ii) commercialization of soil organisms
(b) Discuss the influence of environment on viral (virus) activities
(c) With the aid of a diagram discuss the growth curve of bacteria.

Section B: Answer 2 questions only

5. Briefly explain the terms -
(i) Immobilization (ii) phosphorilation (iii) solubilization
(iv) adsorption (v) Absorption (vi) sulphur reduction
(vii) oxidation-reduction reaction.

6. Compare and contrast phosphorus and iron transformations.

- 7(a) With the aid of a well labeled diagram discuss Nitrogen cycle.
(b) State some ways by which nitrogen can be lost from the soil.