

**FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY
DEPARTMENT OF SOIL SCIENCE AND TECHNOLOGY**

2016/2017 RAIN SEMESTER EXAMINATION

COURSE CODE: SST 916

**COURSE TITLE: NUCLEAR TECHNIQUES IN SOIL AND PLANT
RESEARCH**

TIME: THREE (3) HOURS

INSTRUCTION: ATTEMPT ALL QUESTIONS.

1. ^{15}N as tracer has extensively been used in the soil plant system. Give 13 reasons why this is so.
2. There is a logical sequence in the application of nuclear techniques in Agricultural research.
 - a. State these sequence.
 - b. State the general rule.
3. Enumerate the precautions that will be required in order to obtain reliable and precise analytical data.
4. Write extensively about the following:
 - a. Fertilizer use efficiency.
 - b. Measurement of fertilizer use efficiency.
5. Define the following terms.
 - a. Root activity
 - b. Root activity ratio
 - c. Root activity distribution.
6. Nutrient supply from several fertilizer management practices can be quantitatively evaluated using isotopic techniques. Discuss.