



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF LIFE SCIENCES
DEPARTMENT OF MICROBIOLOGY
FIRST SEMESTER EXAMINATION 2016/2017 ACADEMIC
SESSION

COURSE CODE: MCB 313 - MICROBIAL ECOLOGY (3 UNITS)

Instruction: Answer any **FOUR** questions

Time allowed: 2 Hours

- 1(a). Write short notes on the following terms as they relate to microbial ecology
 - (i) rhizosphere,
 - (ii) endogenous diseases,
 - (iii) plankton,
 - (iv) phyllosphere,
 - (v) ecological niche.
- 1(b). Discuss 5 impacts of microorganisms on the environment and human activities
- 2(a). Discuss 5 ecological relationships that can be found in the rhizosphere
- 2(b). Give five (5) reasons why air is a non-hospitable environment for microbial growth.
- 3(a). In a healthy animal, the internal tissues are normally free of microorganisms however, many other sites are readily colonized by various microbial species, most of which are beneficial to human health, discuss with relevant examples.
- 3(b). List five factors influencing microorganisms in the rhizosphere.
- 4(a). Describe 5 ways *Pyrolobus fumarii* adapt to their environment
- 4(b). Give 5 reasons why the normal microbiota may be harmful to their host
5. Write short notes on mineralization, nitrification and denitrification in nitrogen cycle by microorganisms highlighting factors that affect each of them.
6. With relevant examples and distinguishing characteristics, discuss the following microbial interactions in soil environment
 - i. Cometabolism
 - ii. Protocooperation