ELIZADE UNIVERSITY,
ILARA-MOKIN, NIGERIA

FACULTY: BASIC & APPLIED SCIENCES

DEPARTMENT: BIOLOGICAL SCIENCES

~~FIRST~~ 2ND SEMESTER EXAMINATION

2020/2021 ACADEMIC SESSION

COURSE CODE: MCB 406

COURSE TITLE: ENVIRONMENTAL MICROBIOLOGY

09/05/21

COURSE UNIT: 2 UNITS

HOD's SIGNATURE

DURATION: 2 HOURS

NAME:.....

MAT. No:.....

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER TWO QUESTIONS

QUESTIONS

1a. State the role played by methanogens and methanotrophs in the carbon cycle

b. Give examples of two microorganisms involved in each of the two steps in nitrification

c. (i) Why is nitrogen fixation important

(ii) Write the equation showing the reactants and the products in nitrogen fixation and list two free-living and two symbiotic microorganisms that fix nitrogen

d. Differentiate between the following:

(i) Biodegradation and bioremediation

(ii) Bioaugmentation and Bio-stimulation

e. State any two (2) detoxification strategies used by microorganisms to counter the toxic effects of heavy metals

f. Enumerate any three (3) important functions of Plant Growth Promoting Rhizobacteria (PGPR)

g. (i) Differentiate between acquired and intrinsic recalcitrance

(ii) Highlight 2 possible reasons for intrinsic recalcitrance **20 Marks**

2a. Explain briefly the neuston microbiota with relevant examples of microorganisms

b. Discuss the fresh water microbial communities. **20 Marks**

3a. Explain any three (3) factors limiting growth of microorganisms in water

b. Discuss turbidity as a physical factor in fresh water bodies. **20 Marks**

4a. Explain any three (3) sources of air pollution

b. Discuss the microbiological qualities of air in any two (2) different environments. **20 Marks**