



**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF MICROBIOLOGY
FIRST SEMESTER EXAMINATION,
2022/2023 ACADEMIC SESSION**

Course Title: Industrial Microbiology

Course Code: MCB 413

Instruction: Answer four (4) questions in all. Attempt any two (2) questions in each section

Time allowed: 2 hours

SECTION A

1. (a) Describe the scope of Microbiology as a course.
(b) Discuss the applications of the science of Microbiology.
2. (a) Explain culturing.
(b) Apply culturing methods for the production of penicillin and citric acid.
3. (a) Give the overview of locally fermented foods in Nigeria
(b) Describe how to obtain the following fermented foods:
 - i. *Fufu*
 - ii. *Ogiri*
 - iii. *Iru*

SECTION B

4. (a) Briefly discuss the types of biodeterioration
(b) In a tabular form, list five (5) types of biodeteriorable material and two organisms involved in each action.
5. Write short notes on the production of any two of the following:
 - i Vinegar
 - ii Ethanol
 - iii Penicillin
 - iv Yoghurt
6. Discuss strain improvement by mutation and protoplast fusion using *Aspergillus* sp. as a case study.