



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

**COURSE TITLE: GENERAL MICROBIOLOGY II**

**COURSE CODE: MCB 321**

**UNIT: 3 UNITS**

**TIME: 2hr 30mins**

**INSTRUCTION:** Answer **FIVE (5)** questions in all. At least **ONE (1)** question must be answered in each section

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**SECTION A**

- 1(a). What are the major importance of microorganisms in food?
- 1(b). Write short note on marine microbiology.
  
- 2(a.) Describe the salient points in cycle of infection.
- 2(b). State the necessary action a pathogen must undertake in order to cause disease.
  
- 3(a). Enumerate four (4) roles of microorganisms in maintaining life on Earth.
- 3(b). Write short notes on any five (5) of the following:
  - (i). Normal Flora
  - (ii). Antibody
  - (iii). Infectious disease
  - (iv). Immune system
  - (v). Innate Immune response
  - (vi). Adaptive immune response

**SECTION B**

- 4(a). Succinctly discuss transformation.
- 4(b). Mention the two types of bacteriophage and their life cycles.
  
- 5(a). What is a recombinant cell?
- 5(b). Write a detailed note on conjugation.

**SECTION C**

- 6(a). Describe Industrial fermentation and list ten (10) products of the process.
- 6(b). As a Microbiologist, elucidate the process of producing one of the products mentioned above.
  
- 7(a). What is symbiosis?
- 7(b). Explain four (4) types of symbiotic relationships in bacteria, citing specific examples in each case.