



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

**Course Title: Petroleum Microbiology**

**Course Code: MCB522**

**Unit: 2 Units**

**Instructions:** Answer **THREE (3)** questions in all. At least **ONE (1)** question from **EACH** section

**1Date:** 15<sup>th</sup> December, 2023\_8:00am

**Time Allowed:** 1½ Hours

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**SECTION A**

- 1(a).** Discuss extensively the mechanisms involved in microbial enhanced oil recovery.
- (b).** Write short note on cycloalkanes in petroleum.
  
- 2(a).** Highlight five (5) characteristics of microorganisms capable of degrading hydrocarbons.
- 2(b).** How would you employ the potential of microorganisms to prospect for petroleum deposit in Gidan Kwano campus of Federal University of Technology, Minna?

**SECTION B**

- 3.** How would you use the following to remediate crude oil polluted soil;
  - (a)** Chicken droppings
  - (b)** *Sida acuta* (Stubborn grass)
  - (c)** Mixed bacterial cells
  
- 4(a)** Describe the stages of biofilm formation.
- (b)** Explain the consequences of microbial growth in fuel system.
  
- 5(a)** Define methanogenesis.
- (b)** Discuss the microbial and biochemical processes involved in methanogenesis, stressing the impacts of methanogenesis on the environment.