



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF MICROBIOLOGY,
FIRST SEMESTER EXAMINATION 2022/2023 SESSION
INTRODUCTION TO BIOTECHNOLOGY (MCB 516) 2 UNITS

Instruction: Answer THREE (3) Questions in All. At least ONE (1) Question from EACH Section. Section A (Questions 1a-e) is Compulsory.

Time Allowed: 1 Hr 30 minutes

SECTION A

1. (a). Biotechnology is a combination of two words. Concisely provide additional details.
(b). Catalogue the development of biotechnology.
(c). What is gene editing? Clarify how gene editing tool is used in making pig organs more compatible with human recipient.
(d). Describe one of the most widely used gene editing tool and its application in cancer research and treatment, infectious disease control and organ transplantation.
(e). The latest rise in the price of petroleum products in Nigeria has caused pandemonium. What are the probable alternative sources of fuel? Briefly provide relatable facts to support your response.
2. (a).



(a)?

(b)?

Complete the above phenomenon. What does this symbolize in biotechnology and genetic engineering?

- (b). Discuss briefly one of the **most** promising biotechnological processes.
3. Describe the role of centrifugation in product recovery from fermentation broth?

SECTION B

4. (a). Write brief notes on any four (4) of the following terms used in tissue culture.
i. Trypsinization, ii. Adherent cells iii. Suspension cells,
iv. Primary cell lines v. secondary cells vi. Passaging cells.
(b). Elucidate four (4) applications of animal cell culture
(c). State five (5) genetic methods for strain improvement
5. (a). What is biological regulation?
(b). Briefly explain the key aspects of biological regulation
(c). Outline the various methods of enzyme immobilization