



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**Faculty of Health, Natural
Resources and Applied
Sciences**

School of Natural and Applied
Sciences

Department of Biology,
Chemistry and Physics

13 Jackson Kaujeua Street T: +264 61 207 2012
Private Bag 13388 F: +264 61 207 9012
Windhoek E: dbcp@nust.na
NAMIBIA W: www.nust.na

QUALIFICATION : BACHELOR OF SCIENCE (HONOURS)	
QUALIFICATION CODE: 08BOSH	LEVEL: 8
COURSE: ENVIRONMENTAL, INDUSTRIAL AND MEDICAL BIOTECHNOLOGY	COURSE CODE: EIM821S
DATE: NOVEMBER 2023	SESSION: 1
DURATION: 3 HOURS	MARKS: 120

FIRST OPPORTUNITY: QUESTION PAPER

EXAMINER: *Prof Percy Chimwamurombe*
MODERATOR: *Dr Jean-Damascene Uzabakiriho*

INSTRUCTIONS

1. Answer all questions on the separate answer sheet.
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS:

1. Non-Programmable Calculator

ATTACHEMENTS: NONE

This paper consists of 2 pages including this front pages.

SECTION A:**[60 MARKS]**

1. Describe the role of bacteria in the Nitrogen cycle. (5)
2. Write short notes on use of ozone in water treatment. (5)
3. Write short notes on food reformulation. (10)
4. Write short notes on bioremediation. (10)
5. Describe the use of DNA fingerprinting in determining paternity. (10)
6. Write short notes on stem cell research, paying attention to biomedicine. (10)
7. Describe the use of gene therapy in the treatment of a disease of your choice. (10)

Section B: Essays**[60 MARKS]**

1. Write an essay describing the establishment of an industrial enterprise to remediate oil-spilled soils and freshwaters of Namibia. (30)
2. Write a detailed essay critically appraising the applications of gene therapy and pharmacogenetics in Namibia. (30)