



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

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

School of Natural and Applied
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QUALIFICATION : BACHELOR OF SCIENCE	
QUALIFICATION CODE: 07BOSC	LEVEL: 7
COURSE: BIOTECHNOLOGY	COURSE CODE: BIO702S
DATE: JANUARY 2025	SESSION: 1
DURATION: 3 HOURS	MARKS: 120

SECOND /SUPPLEMENTARY 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

1. NONE

This paper consists of 2 pages including this front pages.

SECTION A**[80 MARKS]**

1. Describe the steps of DNA extraction from a plant leaf. (5)
2. Describe a technique of plant regeneration that you know and its application in producing genetically modified plants. (5)
3. Describe any five applications of the technique of biopharming. (10)
4. Distinguish between biotechnology and biosafety. (5)
5. Explain the importance of public awareness on biotechnology and biosafety? (5)
6. Describe any five applications of the PCR technology (5)
7. Describe the process of Western blotting. (5)
8. Describe the process of Northern Blotting. (5)
9. Describe the technique of site-directed mutagenesis. (10)
10. Draw any similarities and differences between RAPDs and RFLPs (10)
11. State the details of how "Golden rice" was produced? (10)
12. Explain the use of gene mining in prospecting for genes to produce a GMO. (5)

SECTION B**[40 MARKS]**

1. Describe using examples, the application of biotechnology in forensics regarding contemporary issues of society. (20)
2. In detail, describe a risk assessment procedure for evaluating the environmental safety of a transgenic plant. (20)

-----END OF EXAMINATION QUESTION PAPER-----