



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF NATURAL AND APPLIED SCIENCES

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| QUALIFICATION : BACHELOR OF SCIENCE HONOURS | |
| QUALIFICATION CODE: 08BOSH | LEVEL: 8 |
| COURSE CODE: BIO811S | COURSE NAME: BIOINFORMATICS |
| SESSION: JULY 2019 | PAPER: THEORY |
| DURATION: 3 HOURS | MARKS: 120 |

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| SUPPLEMENTARY/ SECOND OPPORTUNITY EXAMINATION QUESTION PAPER | |
| EXAMINER(S) | Prof Percy Chimwamurombe |
| MODERATOR: | Dr Jean-Damascene Uzabakiriho |

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| INSTRUCTIONS |
| <ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly.3. Number the answers clearly. |

PERMISSIBLE MATERIALS

Non-programmable Calculators

ATTACHMENTS

None

THIS QUESTION PAPER CONSISTS OF 2 PAGES (Including this front page)

SECTION A: [60]

1. Using examples, write short notes on the following term used in Bioinformatics:
 - a. BLAT (5)
 - b. BLOB (5)
 - c. Phylogenetic tree (5)
 - d. Gene ontology (5)
 - e. BankIt (5)
 - f. FASTA. (5)
2. Give a practical use of genomic circuits in single genes. (10)
3. Use the example of a human disease complex to describe the concept of integrating single gene circuits. (10)
4. Describe any complex gene circuits, which you have studied. (10)

SECTION B: ESSAY QUESTIONS [60]

1. Describe the lactose operon and how it can be used to explain a single gene circuit. (30)
2. Write a detailed essay on BLAST. (30)