



UNIVERSITY EXAMINATIONS
SECOND YEAR EXAMINATION FOR THE AWARD OF THE
DEGREE OF BACHELOR OF SCIENCE IN FORENSIC BIOLOGY
SECOND SEMESTER 2022/2023
[JANUARY-APRIL, 2023]

BIOC 223: INTRODUCTION TO MOLECULAR BIOLOGY

STREAM: Y2S2

TIME: 2 HOURS

DAY: TUESDAY, 9:00 – 11:00 AM

DATE: 18/04/2023

INSTRUCTIONS

- 1. Do not write anything on this question paper.***
- 2. Answer Question ONE and any TWO other Questions.***

SECTION A

1. Describe DNA replication and transcription. (5marks)
2. Explain the process of translation. (5marks)
3. Describe the functions of nucleic acids. (5marks)
4. Define the following terms: (5marks)
 - i. Recombination
 - ii. Replication
 - iii. Proteomics
 - iv. Metabolomics
 - v. Transcriptomics
5. Explain the methods to study gene expression/regulation in detail. (5marks)
6. Describe the methods to study protein-protein interactions. (5marks)
7. Discuss the post-transcriptional modifications. (5marks)
8. Explain the DNA synthesis is semi-discontinuous and bidirectional with the aid of diagrammatic representation. (5marks)

SECTION B

9. Explain the process of DNA damage and repair mechanisms. (15marks)
10. Explain the recombination of genetic information in detail. (15marks)
11. Discuss models for the study of gene expression. (15marks)