



UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

**THIRD YEAR EXAMINATION FOR THE DEGREE
BACHELOR OF SCIENCE (BIOCHEMISTRY)**

BIOC 313: BIOCHEMISTRY OF BACTERIA AND FUNGI

STREAM: R

TIME: 2 HRS

DAY: THURS [11.30AM – 13.30]

DATE: 08/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: - This paper contains TWO sections A and B. Answer ALL questions in section A and only ONE in section B.

SECTION A (50 MRKS) Answer ALL questions

QUESTION ONE

- (a) What are the differences between the bacterial and eukaryotic DNA. (2 marks)
- (b) Outline sources of Nitrogen for bacteria. (4 marks)
- (c) Show diagrammatically the growth rates of bacterial groups at different temperatures. (4 marks)

QUESTION TWO

- (a) Describe the light independent (dark) reaction otherwise known as Calvin-Benson cycle. (4 marks)
- (b) With a diagram show anabolic pathway of anoxygenic microorganism such as green non-sulfur bacteria (6 marks)

QUESTION THREE

Explain the following:

- (a) Blood agar as a differential media. (4 marks)
- (b) The principle and expected results of Triple Sugar Iron Test. (6 marks)

QUESTION FOUR

Discuss the following processes:

- (a) Lipid catabolism in microorganisms (3 marks)
- (b) Electron acceptors in the electron transport chain of different microorganisms. (7 marks)

QUESTION FIVE

Illustrate fermentation pathways in different microorganisms (10 marks)

SECTION B

Instructions: Answer only ONE question – 20 marks

QUESTION SIX

Discuss fungal enzymes and their roles in pathogenesis (20 marks)

QUESTION SEVEN

Discuss bacterial toxins and their roles in pathogenicity (20 marks)

