



OFFICE OF THE DEPUTY VICE CHANCELLOR
ACADEMIC, RESEARCH AND STUDENT AFFAIRS

UNIVERSITY EXAMINATIONS 2023/2024 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER MAIN EXAMINATION

**FOR THE DEGREE OF BACHELOR OF
EDUCATION SCIENCE**

COURSE CODE: CHEM 306E
COURSE TITLE: BIOCHEMISTRY

DATE: 22ND APRILL 2024

TIME: 9 – 12 NOON

INSTRUCTION TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 2 PRINTED PAGES

PLEASE TURN OVER

CHEM 306E: BIOCHEMISTRY

B. ED SCIENCES

DURATION: 3 Hours

INSTRUCTIONS TO CANDIDATES

- i. Answer *ALL* questions in section A and choose *ANY TWO* Questions in section B
- ii. Do not write on the question paper.

SECTION A (30 MARKS)

Question One

- a) Describe the main principle behind flame photometry as an analytical procedure (7 marks)
- b) Outline the difference between UV and IR spectrophotometry (5 marks)
- c) What is spectrophotometry (3 marks)

Question Two

- a) Describe the working of a filter colorimeter (15 marks)

SECTION B (40 MARKS)

Question Two

- a) Why is isoelectric potential important for amino acids? (5 marks)
- b) Explain competitive inhibition in enzyme activity (5 marks)
- c) What is the difference between a cofactor and coenzymes? (5 marks)
- d) Describe two special amino acids (5 marks)

Question Three

- a) Describe the principle and components of Electrophoresis? (10 marks)
- b) Explain the principle of paper chromatography (5 marks)
- iii. Explain briefly five main factors that affect enzyme action (5 marks)

Question Four

- a) Describe the structure of Glycogen (5 marks)
- b) Illustrate the Krebs cycle, and explain the 8 steps reactions (15 marks)
