

CHE 412



OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER REGULAR EXAMINATION

FOR THE DEGREE OF BACHELOR OF
EDUCATION SCIENCE

COURSE CODE: CHE 412

**COURSE TITLE: CHEMISTRY OF NATURAL
PRODUCTS**

DATE: 7TH JUNE, 2022

TIME: 0900 – 1200 HRS

INSTRUCTION TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF PRINTED PAGES 3

PLEASE TURN OVER

REGULAR – MAIN EXAM

CHE 412: CHEMISTRY OF NATURAL PRODUCTS

STREAM: BED (Scie)

DURATION: 3 Hours

INSTRUCTIONS TO CANDIDATES

- i. Answer ALL questions.*
- ii. Diagrams may be used whenever they serve to illustrate the answer.*
- iii. Do not write on the question paper.*

Question One

- a) Using appropriate examples, explain what is meant by;
- i. Natural products (2 Marks)
 - ii. Prostaglandins (2 Marks)
 - iii. Polyketides (2 Marks)
 - iv. Fatty acids (2 Marks)
 - v. Terpenoids (2 Marks)
 - vi. Alkaloids (2 Marks)

Question Two

- a) Describe in detail the techniques for the extraction and separation of natural products (7 Marks)
- b) Describe the various chemical properties of terpenoids (5 Marks)

Question Three

- a) Describe the steps involved in the biosynthesis of fatty acids (12 Marks)

Question Four

- a) What are the most common amino acids from which alkaloids can be derived (3 Marks)
- b) Describe the preparation of pyrrolidine alkaloids (9 Marks)

Question Five

- a) Describe some of the biological function of fatty acids (3 Marks)
- b) Describe how nicotine can be prepared (9 Marks)

Question Six

- a) Using appropriate examples, describe the various synthesis procedures of terpenoids (6 Marks)
- b) Give examples of polyketide derived secondary metabolites (4 Marks)
