



NATIONAL OPEN UNIVERSITY OF NIGERIA
UNIVERSITY VILLAGE, PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY, JABI - ABUJA.
FACULTY OF SCIENCES
DEPARTMENT OF PURE AND APPLIED SCIENCE
APRIL/MAY, 2019 FIRST SEMESTER EXAMINATION

COURSE CODE: CHM 422
COURSE TITLE: NATURAL PRODUCTS CHEMISTRY II
CREDIT UNIT: 2
TIME: 2 HOURS
INSTRUCTION: Answer question one (1) and any other three (3) questions.

QUESTION ONE

- 1a. List five main classes of natural products. 2 mks
- 1bi Explain how terpenes are obtained from plant tissue. 5 mks
- 1bii. State three physical properties of terpenes 3 mks
- 1c. A terpene composed of four isoprene units and has the molecular formula $C_{20}H_{32}$, to what class of terpenes does it belongs? 2mks
- 1d. Mention two basis for naming alkanoids. 2 mks
- 1e. Enumerate the basic and acidic character of alkaloids. 3 mks
- 1f Outline the stages of the structural elucidation of natural products. 5 mks
- 1g) Why is it necessary to isolate, separate and purify natural products? 3 mks

QUESTION TWO

- 2ai. Define the term *Natural Products*. 2 mks
- 2aii Explain briefly the three broad categories of natural products. 6 mks
- 2b. Describe briefly each of the following group of natural product:
(i) Terpenoids 2 mks

(ii) Alkaloids

2mks

2c. Explain the significant of natural product in medicine.

3 mks

QUESTION THREE

3ai. What are the general methods of extraction of natural products?

1 mk

3aai. What would you consider before choosing any of the methods?

6 mks

3b. Give a brief description of steroids.

8 mks

QUESTION FOUR

4ai. Describe the structure of carotenoids molecule.

4 mks

4aai. Explain the importance of carotenoids in plants.

4 mks

4b. Explain briefly the biochemical importance of Vitamins.

3 mks

4c. Write short note on flavonoids.

4 mks

QUESTION FIVE

5a. Discuss the extraction, isolation and characterization of natural products.

7 mks

5b. State the importance of carotenoids in animal

2 mks

5c. Explain the procedure involved in TLC analysis.

6 mks