

EXPRESS WAY, JABI - ABUJA.

FACULTY OF SCIENCES

DEPARTMENT OF PURE AND APPLIED SCIENCES

JANUARY/FEBRUARY 2018 EXAMINATION

COURSE CODE: CHM 422

COURSE TITLE: NATURAL PRODUCTS CHEMISTRY II

TIME: 2 HOURS

INSTRUCTION: Question one is compulsory. Answer question one and any other three questions.

QUESTION ONE

1ai) State the primary constituents of the essential oils of plants and flowers. 2marks

1aii) Explain how essential oils can be extracted from plants by steam distillation. 3marks

1aiii) What is the composition of terpenes. 2marks

1aiv) State the uses of monoterpenes. 2marks

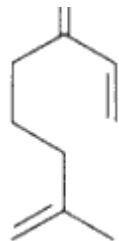
1bi) Differentiate between carotenes and xanthophylls. 3 marks

1bii) Outline the stages of the structural elucidation of natural products. 5 marks

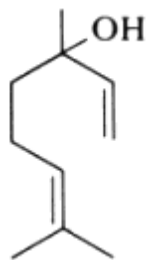
1ci) Why is it necessary to isolate, separate and purify natural products? 2 marks

1cii) Name the following compounds, and state any of their sources and uses.

D)



II)



6 marks

QUESTION TWO

2a) State the different classes of terpenes and differentiate them. 12 marks

2b) Classify alkaloids based on the heterocyclic ring system they contain in their molecular structure. 3 marks

QUESTION THREE

3a) Discuss the extraction, isolation and characterization of natural products. 10 marks

3aii) Give a brief outline of the biosynthetic pathway of carotenoids. 5 marks

QUESTION FOUR

4a) What are the general methods of extraction of natural products and what would you consider before choosing any of the methods. 6 marks

4b) Give a brief description of steroids. 9 marks

QUESTION FIVE

5ai) Write a short note on carotenoids. 6 marks

5a) List any four spectroscopic/analytical tools for the structural elucidation of natural products.
4 marks.

5b) Differentiate between terpenes and terpenoids. 3 marks

5c) State two importance of Steroids. 2 marks