



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF PURE & APPLIED SCIENCES
2021_1 EXAMINATION¹²³

COURSE TITLE: NATURAL PRODUCTS CHEMISTRY **COURSE CODE: CHM318**
TIME ALLOWED: 2 Hours **CREDIT: 2 Units**
INSTRUCTION: Answer Question ONE (1) and any other Three (3) Questions

1. a. Classify the following into monocyclic, acyclic and bicyclic monoterpenes;
Camphor, α -pinene, citral, limonene, γ -terpinene, myrcene, ocimene, menthol, linalool, geraniol, nerol
[6 marks]
- b. What are anabolic steroids? Give an example
[4 marks]
- c. Classify alkaloids based on the nature of the heterocyclic ring system present in their molecular structure
[6 Marks]
- d. State two steroidal hormones that are formed in ovary and placenta during pregnancy
[4 marks]
- e. List five sources of Nerolidole
[5 marks]

QUESTION 2

2. Structurally, classify steroids
[15 marks]

QUESTION 3

- a. State three physiological/therapeutical properties of Dehydroleucodine
[6 marks]
- b. Draw the basic structure of cholestane and number the carbon atoms
[9 marks]

QUESTION 4

- a. List four examples of terpenoids that have physiological activities
[6 marks]
- b. i. Draw the structure of diterpenoids 'retene'
[3 marks]
- c. State three types of monoterpenes each with an example
[6 marks]

QUESTION 5

- a. Give one example each of the following;
[3 marks]
 - i. Animal steroid
 - ii. Plant steroid
 - iii. Fungus steroid
- b. Draw the structures of the following terpenes
[8 marks]
 - i. Farnesol
 - ii. Myrcene
 - iii. limonene
 - iv. α -pinene
- c. Differentiate between terpenes and terpenoids.
[4 marks]