

**NATIONAL OPEN UNVERSITY OF NIGERIA**

PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA

**FACULTY OF SCIENCES**

**DEPARTMENT OF PURE & APPLIED SCIENCES**

**JULY 2018 EXAMINATIONS**

**CHM 318 –NATURAL PRODUCT CHEMISTRY I (2 UNITS)**

**INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER 3 QUESTIONS.**

**Time allowed 2 Hours**

**QUESTION 1** (a) (i). Write short note on the general structure of steroid. **(8 marks)**

(ii). What are the skeleton features of gonane **(2 marks)**

(b). (i). What are the differences between the two types of corticosteroids. **(4 marks)**

(ii). What are the roles of anabolic steroid and cholesterol. **(4 marks)**

(c). (i). Write a short note on steroidogenesis? **(2 mark)**

(ii). Explain how steroids are degraded and eliminated from the body.**(3 marks)**

**(iii)** What is aProtoalkaloids **(2 marks)**

**QUESTION 2**(a). (i).What are the biological roles of alkaloids? **(2 ½ marks)**

(ii). Give the medicinal application of five out of the following alkaloids: **(2 ½ marks)**

Vinblastine, Codeine, Cocaine, Colchicine, Reserpine, Quinine, Quinidine, Morphine, Tubocurarine and Emetine.

(iii). Give five examples of pseudoalkaloids. **(2 marks)**

(b). Define alkaloid. **(4 marks)**

(c). Describe the psychoactive drug use of alkaloids. **(4 marks)**

**QUESTION 3** (a) Write short note on the discovery and early uses of alkaloids.**(4 ½ marks)**

(b). (i)How can alkaloids be extracted? **(5 ½ marks)**

(ii)List five methods for synthesis of alkaloids. **(5 marks)**

**QUESTION 4** (a).Give three examples each for monocyclic monoterpenes and bicyclic monoterpenes. **(7 marks)**

(b). What are the sources and uses of the following terpenes?  **(8 marks)**

* Farnesol, Farnesene, Nerolidol and Cadalene

**QUESTION 5** (a). i). Write short note on the following:

* Monoterpenes, **( 2 ½ marks)**
* Sesquiterpenes **(3 marks)**
* Diterpenes **(1 mark)**

(b). Explain the process use for the Synthesis of Schiff bases **(2 ½ marks)**

(c). What are the properties of Alkaloids? **( 6 marks)**