



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE

OCTOBER/NOVEMBER 2016 EXAMINATION

COURSE CODE: CHM 318
COURSE TITLE: NATURAL PRODUCT CHEMISTRY
CREDIT UNIT: 2
TIME: 2 HOURS
INSTRUCTION: ANSWER QUESTION ONE AND ANY OTHER THREE QUESTIONS.
Each question carries 17 ½ marks

1a) A rational classification of the terpenes is based upon the number of isoprene units incorporated in the basic molecular skeleton. Fill the below table using the stated statement.

	Terpene	Isoprene units	Carbon atoms
1.	Sesquiterpenes		
2.		5	
3.	Carotenoids		
4.			> 500

1b) Discuss the importance of Terpenes.

2) A class of [organic compounds](#) with a chemical structure that contains the core of [gonane](#) or a skeleton derived there from.

- Give the name of these compounds.
- Draw the basic skeleton of these group of compounds
- Write short note on the simplest member of this group.

3. Fill the table below using the knowledge on classification of steroid according to their chemical composition.

Class	Examples	Number of carbon atoms
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		27
	Cholic acid	
Pregnanes		
		19
	Estradiol	

3b) Discuss steroid metabolic pathways.

4a) State the properties of Alkaloids

4b) Discuss the biosynthesis of Alkaloids.

5a) Discuss the biological roles of Alkaloids.

5b) Enumerate the major classes of alkaloids

6) Discuss any five main classes of Alkaloids with emphasis on:

i) Class

ii. Major group

iii Main synthesis steps

iv. Two examples each.