NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY, JABI - ABUJA.

FACULTY OF SCIENCE

OCTOBER/NOVEMBER 2016 EXAMINATION

COURSE CODE: CHM 414

COURSE TITLE : Photochemistry and Pericyclic Reactions

TIME: **2 Hours**

CREDIT UNIT **2**

INSTRUCTION: **Answer any Four Questions**

1a. Differentiate between thermal and photochemical reactions.

b. What are selection rules in photochemistry?

2. State and explain the 1^{st} and 2^{nd} laws of photochemistry.

3. Write a short note on photochemistry induced by visible and ultraviolet light.

4. Discuss briefly the processes involved in a photochemical reaction.

5. When a sample of 4-heptanone was irradiated with 313 nm light with a power output of 50 W under conditions of total absorption for 100 s, it was found that 2.8 $x10^{-3}$ mol C_2H_4 was formed. What is the quantum yield for the formation of ethane. Plank's constant = 6.63 x 10^{-34} J.Sec, speed of light (c) = 3x 10^{8} m.sec^{-1}

6. Discuss the Frank – Condon principle.