

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DIPLOMA IN EDUCATION

CHEM 0112: INTRODUCTION TO ORGANIC CHEMISTRY

STREAMS:

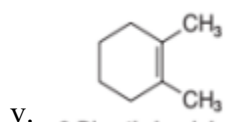
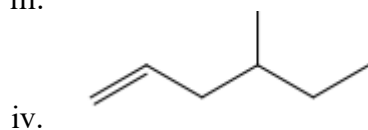
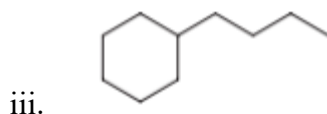
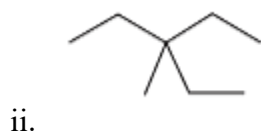
TIME: 3 HOURS

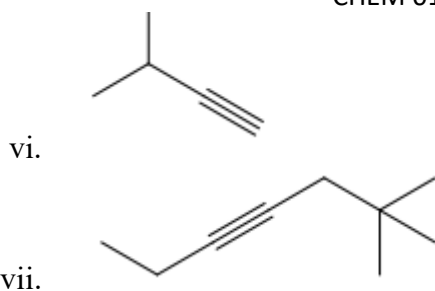
DAY/DATE: FRIDAY 12/4/2024

2.30 P.M. – 4.30 P.M.

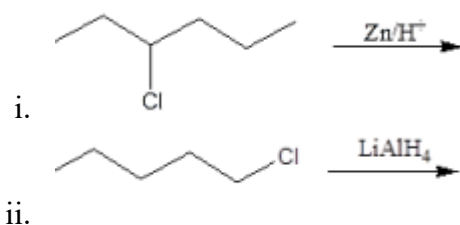
QUESTION ONE (30 MARKS)

- a) Discuss hybridization in Carbon (4 marks)
- b) Differentiate between catenation and elemental analysis (3 marks)
- c) Give the IUPAC names for the following compounds (12 marks)



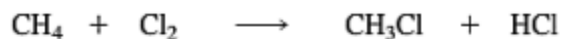


- d) Discuss two sources of Alkanes and cycloalkanes (4 marks)
- e) With the help of a suitable example illustrate hydrogenation in alkenes (3 marks)
- f) Complete the following equations : (4 marks)



QUESTION TWO (20 MARKS)

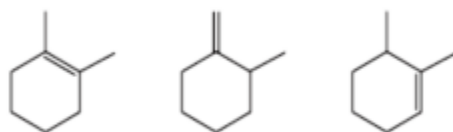
- a) Write the electronic configuration of carbon (2 marks)
- b) Discuss the Mechanism of Halogenation for the following reaction (9 marks)



- c) Differentiate between Enantiomers and Diastereoisomers (4 marks)
- d) Discuss any three methods used to prepare alkenes with a suitable example (5 marks)

QUESTION THREE (20 MARKS)

- a. Rank the following cycloalkenes in order of increasing stability (6 marks)

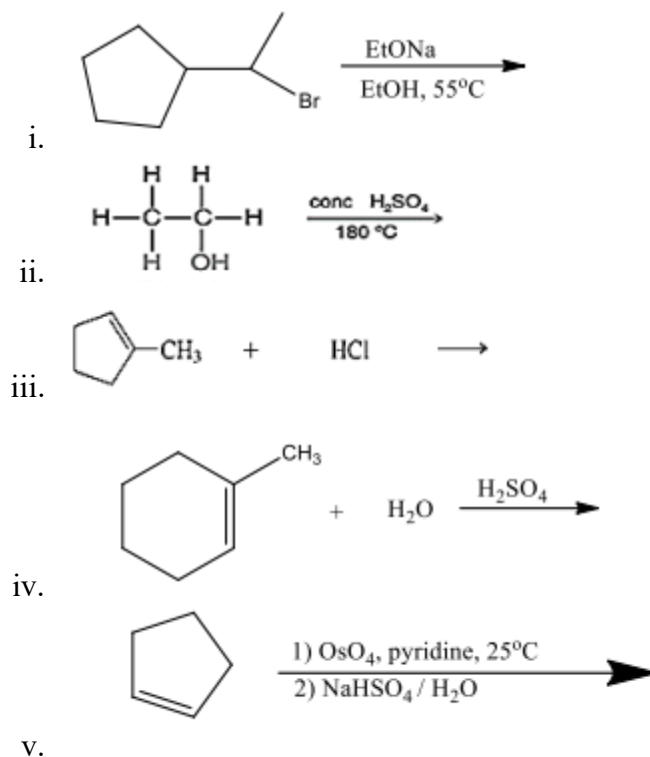


- b. Draw cis and trans isomers of (4 marks)

- i. ethyl- 3 – methylcycloheptane
 ii. ethyl- 3 - methylcyclopentane

c. Complete the following reaction giving the major and minor product where possible.

(10 marks)



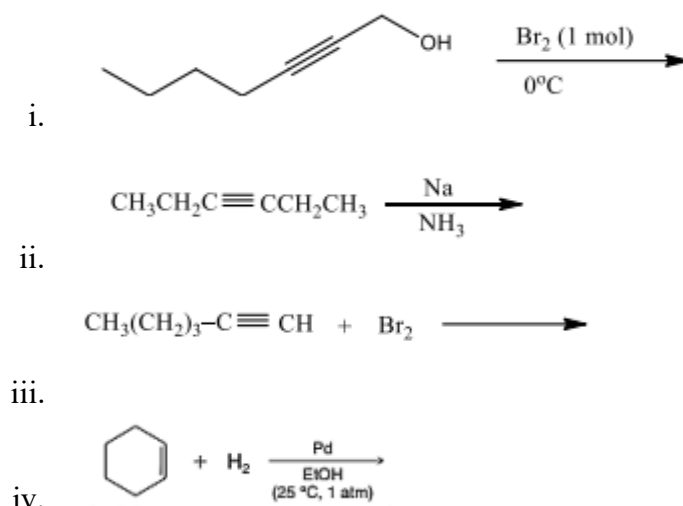
QUESTION FOUR (20 MARKS)

a. Write short notes on two examples of addition reaction of alkynes

(4 marks)

b. Complete the following reactions:

(8 marks)



c. Show isomerism in;

(8 marks)

- i. Pentane
- ii. Hexane