

Name: ..... St. No. (.....)

Group NO. (.....) Serial No.(.....)

***I) Choose the correct answer for the following:***

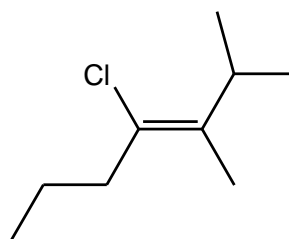
1- The IUPAC name for the following compound



is: **ii**

- i. Pent-4-en-2-yne-cyclopropane.
- ii. 5-Cyclopropylpent-1-en-3-yne.**
- iii. 1-Cyclopropylpent-4-en-2-yne.
- iv. Propyne vinyl-cyclopropane.

2- The IUPAC name for the following compound

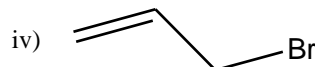
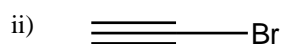
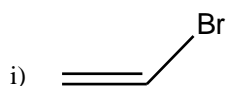


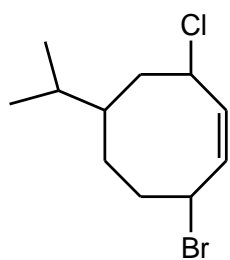
is: **iv**

- i. (Z)-3-Chloro-2-isopropyl- hex-2-ene.
- ii. (E)-4-Chloro-2,3-dimethyl hept-3-ene.
- iii. (E)-3-Chloro-2-isopropyl- hex-2-ene.
- iv. (Z)-4-Chloro-2,3-dimethylhept-3-ene.**

3- The structure of vinyl bromide is:

**i)**

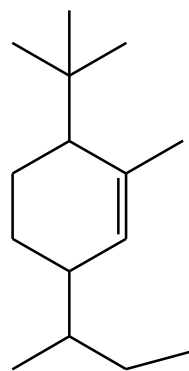
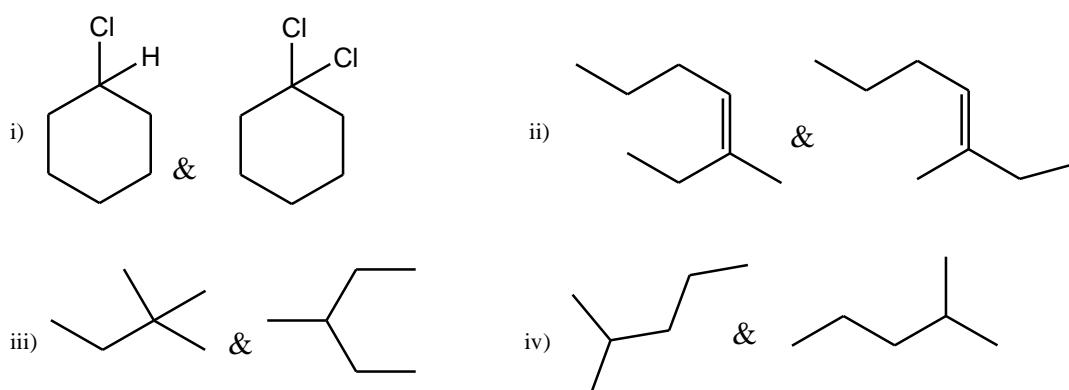




4- The IUPAC name for **Br** is: **iv**

- i. 1-Bromo-4-chloro-6-isopropyl-2- cyclooctene.
- ii. 3-Bromo-8-chloro-6-isopropyl-1-cyclooctene.
- iii. 6-Bromo-1-chloro-3-isobutyl-7-cyclooctene.
- iv. 8-Bromo-3-chloro-5-isopropyl-1-cyclooctene.**

5- Which of the following couple of molecules are structural isomers? **iii**

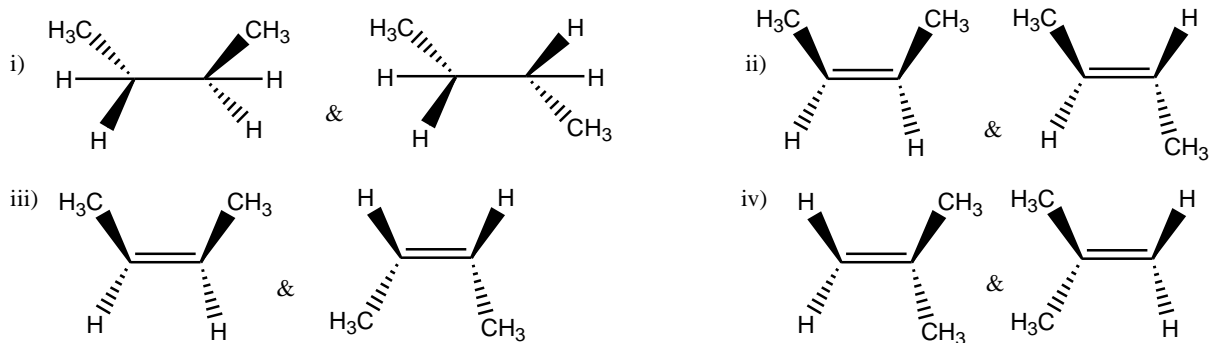


6- The IUPAC name for is:

- i) 2-Methyl-3-*tert*-butyl-6- *sec.* butylcyclohexene. **iii**
- ii) 1-*sec*-Butyl-4-*tert*-butyl-3-methyl-2-cyclohexene.
- iii) 3-*sec*-Butyl-6-*tert*-butyl-1-methylcyclohexene.
- iv) 1-*tert*-butyl-4-*sec*-butyl-2-methyl-2- cyclohexene.

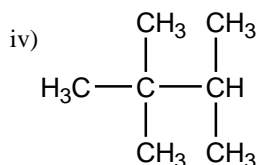
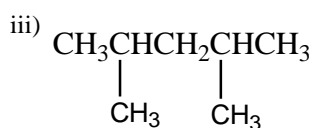
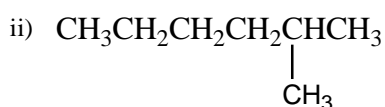
7- Which of the following couple of molecules are geometrical isomers?

ii



8- Which of the following alkanes would have the lowest boiling point?

iv



9- Which of the following hydrocarbons have acidic hydrogen?

iii

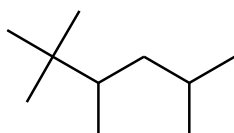
i) 2-Butyne

ii) 1-Butene

iii) 1-Butyne

iv) 2-Butene

10- (2-*tert*-Butyl-4-methyl pentane) is incorrect name according to IUPAC rules correct it.



2,2,3,5-Tetramethylhexane

II) State whether the following statements are true or false?

1. The number of  $\sigma$  bonds in 2-butene is 9 bonds. (T) (F)

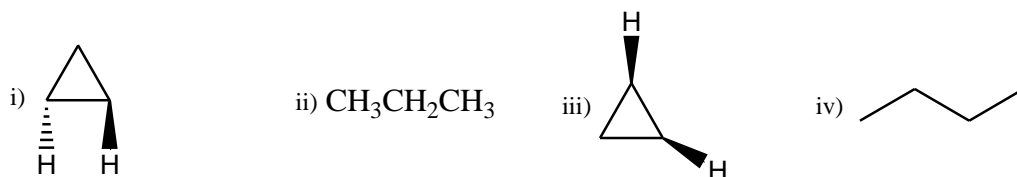
2. Alkanes can react by addition. (T) (F)

3. The bond angle in hybrid orbitals in ethane is equal to 109.5. (T) (F)

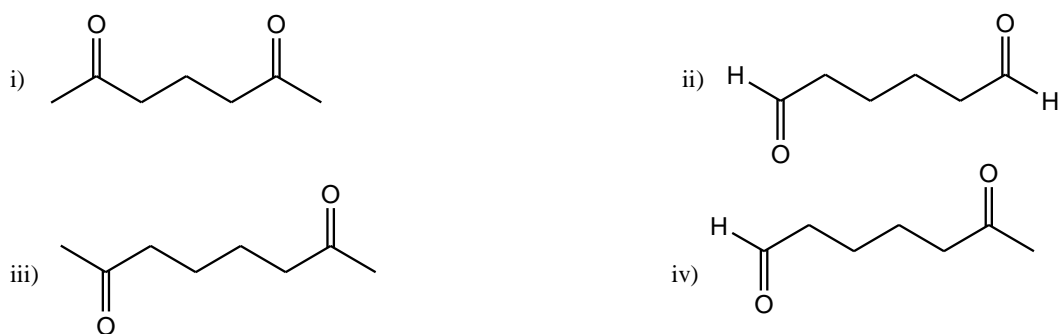
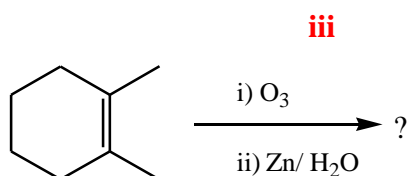
4. The sigma bond between the two carbon atoms in ethyne is made by overlap of two  $sp^2$  orbitals (T) (F)

5. Isopentane has one tertiary hydrogen. (T) (F)

**III) Choose the correct and the major product for the following reactions:**

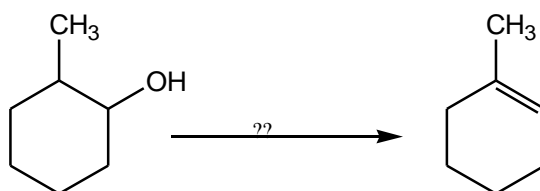


2-



3- What is the best reagent used for the following reaction?

**ii**



i)  $\text{LiAlH}_4$

ii) Conc.  $\text{H}_2\text{SO}_4$ , heat

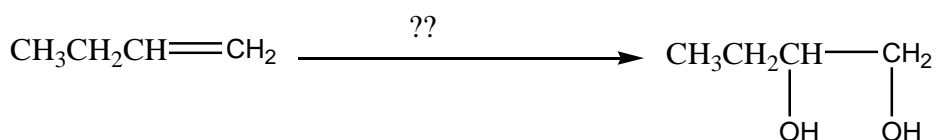
iii)  $\text{NaOH}$

vi)  $\text{H}_2/\text{Pd}$

---

4- What is the best reagent used for the following reaction?

**iv**



i) 2 moles of  $\text{H}_2\text{O}$

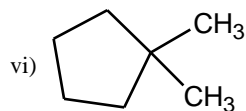
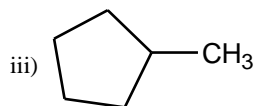
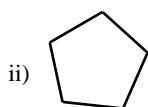
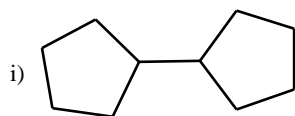
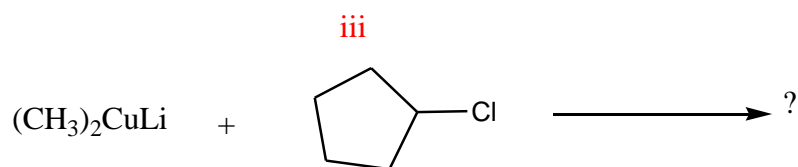
ii)  $\text{O}_3/ \text{Zn}, \text{H}_2\text{O}$

iii) Alcoholic  $\text{KOH}$ , heat

iv) dil.  $\text{KMnO}_4$

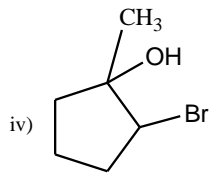
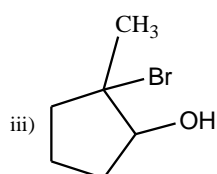
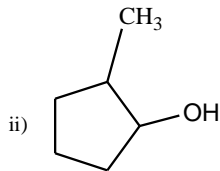
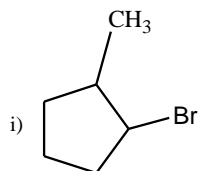
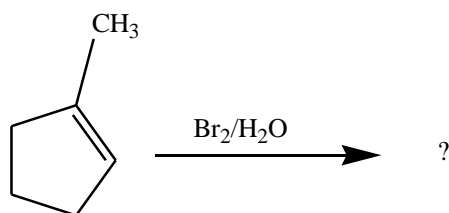
---

5-

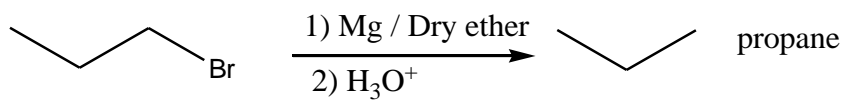


6-

iv



7-



وبالله التوفيق،،،

Dr. Siham Lahsasni, Dr Shatha Alaqeel and Dr. Seham Al Terary

Dr. Nahed Nasser