

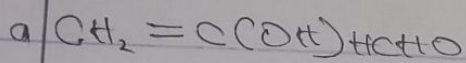
CHEM 102

Name: Stella Chineduherem Eusebius-Okoro

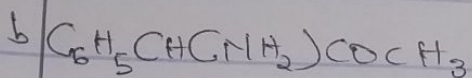
Department: M.B.B.S

Matric Number: 19/mhs01/164

1) Molecules



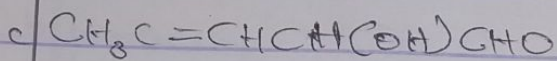
Functional groups
- Aldehyde ($\text{C}-\text{CHO}$)



- Hydroxyl group ($\text{C}-\text{OH}$)

- carbonyl group ($\text{C}-\text{CO}$)

- Amine ($\text{C}-\text{NH}_2$)



- Hydroxyl group ($\text{C}-\text{OH}$)

- Aldehyde ($\text{C}-\text{CHO}$)

2)
$$[\alpha] = \frac{\alpha}{cL}$$

where $[\alpha]$ = specific optical rotation

α = observed rotation

c = concentration in g/ml

L = path length (in dm)

$\alpha = +1.0^\circ$

$L = 1.0 \text{ dm}$

$c = ?$

1 litre = 1000 cm^3

1 mL = 1 cm^3

$1000 \text{ cm}^3 = 1000 \text{ mL} \quad \therefore c = 1000 \text{ L}$

$[\alpha] = \frac{1.0}{10 \times 10}$

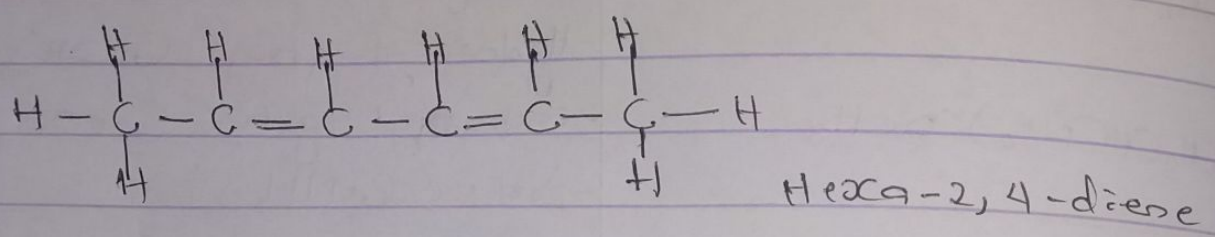
$[\alpha] = 0.01^\circ \text{ L/g dm}$

1. The specific rotation of (2R,3R)-tartaric acid is 0.01°

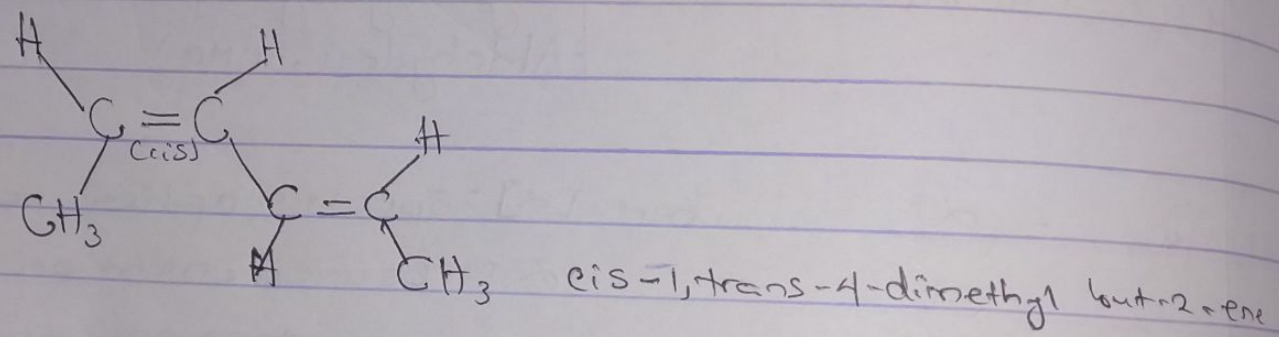
3A) Hexa-2,4-diene ($\text{CH}_3\text{CH}=\text{CHCH}=\text{CHCH}_3$)

Possible geometric isomers:

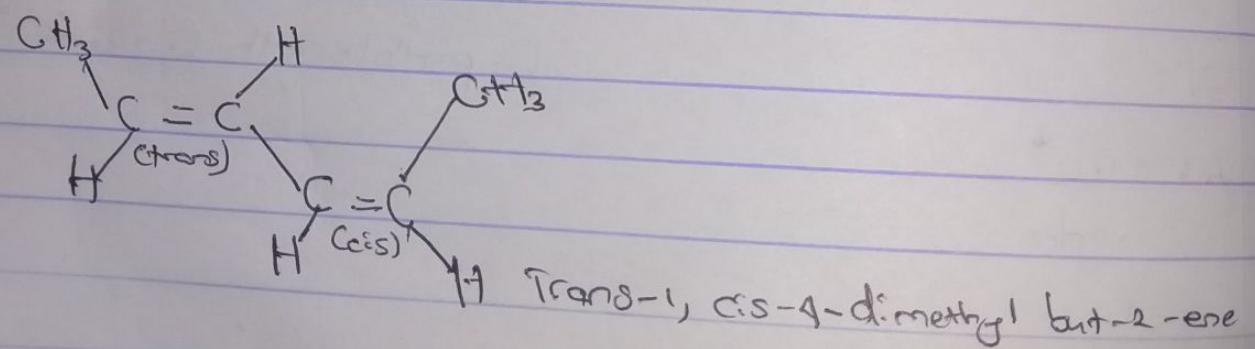
a



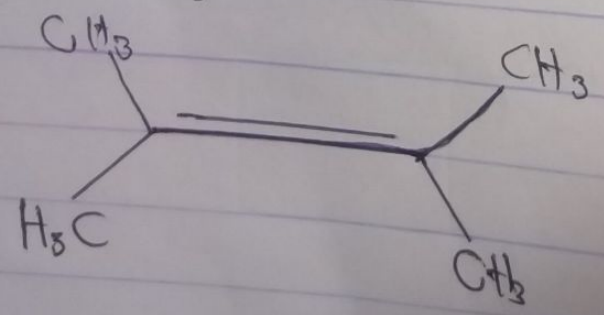
b



c

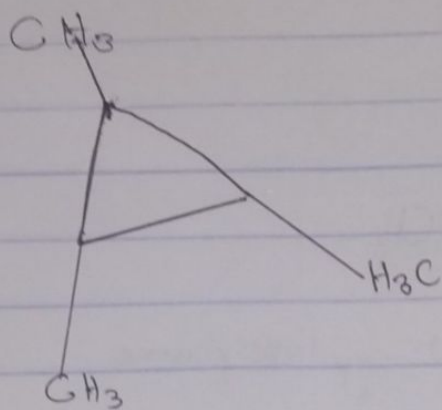


3B) 2,3-Dimethylbut-2-ene

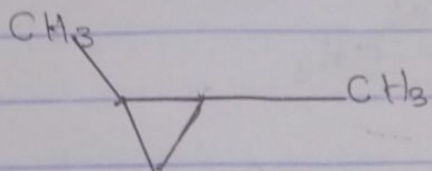


Possible Geometric Isomers

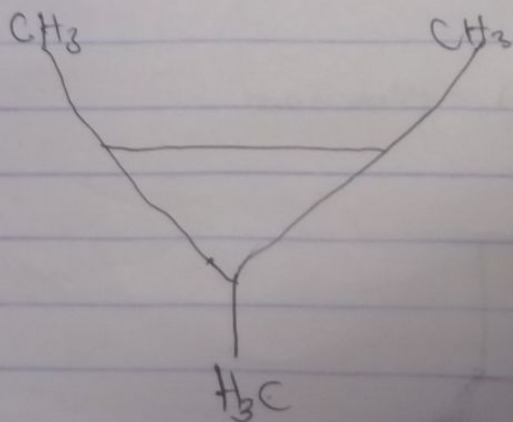
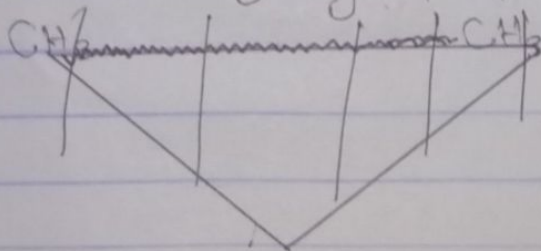
a 1-cis-2-trans-3-trimethylcyclopropane



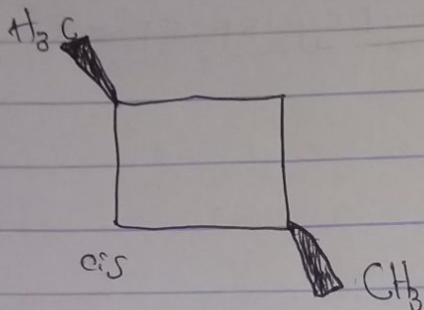
b 1-methyl-trans-2-ethylcyclopropane



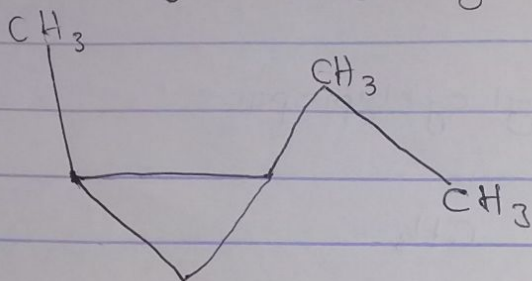
c cis-1,2,3-trimethylcyclopropane



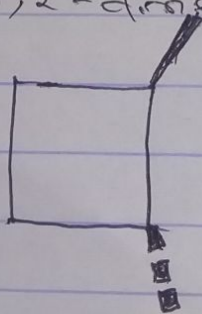
d cis-1,3-dimethyl cyclobutane



e cis-1-methyl-2-ethyl cyclopropane



f Trans-1,2-dimethyl cyclobutane



g Trans-1,3-dimethyl cyclobutane

