

10/05/2020

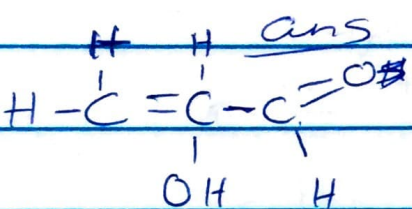
Chem 102

OLATOMIWA PRECIOUS OLANIKE

19/MAY/201332

MBBS

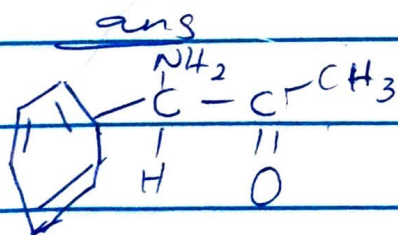
1) Name the functional groups present in each of the following molecules.



-OH (hydroxyl group)

-double bond (C=C) alkene

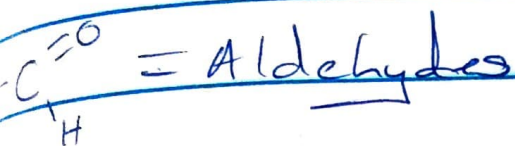
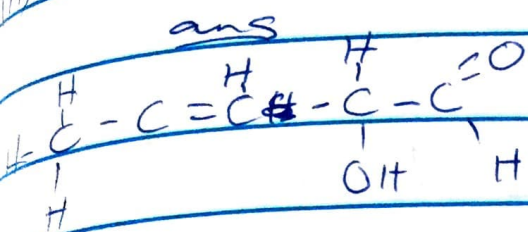
$-\text{C}(=\text{O})\text{H}$  (aldehydes or alkanals)



-NH<sub>2</sub> (Amine)

-(C<sub>6</sub>H<sub>5</sub>) phenyl group with double bond.

$-\text{C}(=\text{O})\text{CH}_3$  - Ketone



$=$  = double bond

$-\text{OH}$  = hydroxyl group

2) A 0.856 g sample of pure (2R, 3R) - tartaric acid was diluted to  $10\text{cm}^3$  with water and placed in a 1.0 dm polarimeter tube. The observed rotation at  $20^\circ\text{C}$  was  $+1.0^\circ$ . Calculate the specific rotation of (2R, 3R) - tartaric acid

Sol

$$\text{specific rotation} = \frac{\text{observed rotation (degree)}}{(\text{conc in g/cm}^3) \times \text{path length of sample (cm in dm)}}$$

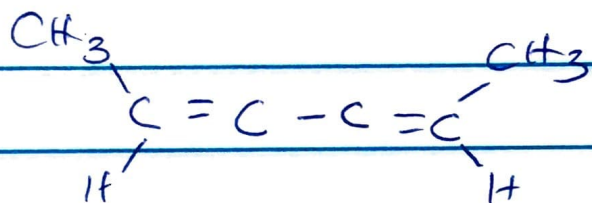
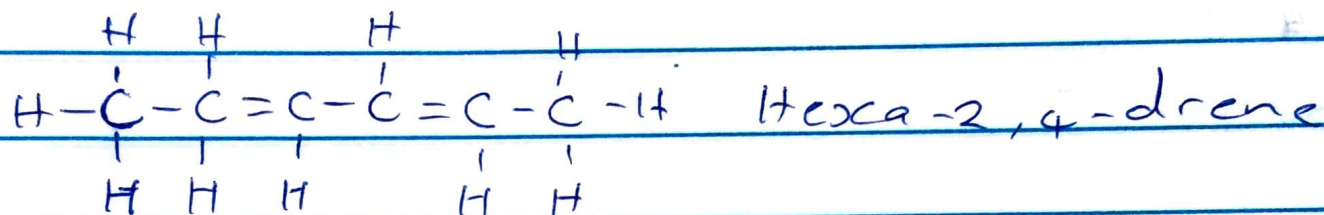
$$S_r = \frac{1.0}{\left(\frac{0.856}{10}\right) \times 1.0}$$

$$S_r = 11.68^\circ\text{cm}^3\text{dm}^{-1}$$

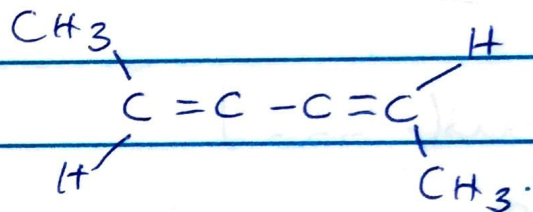
3) Draw the possible geometric isomers (where possible)

for each of the following compounds.

i) Hexa-2,4-diene.

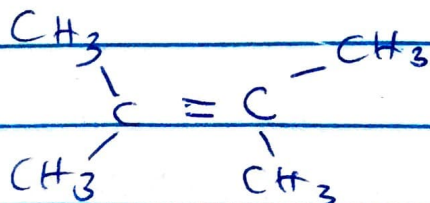
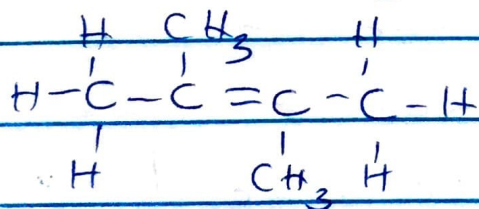


Cis-Hexa-2,4-diene



trans-Hexa-2,4-diene

ii) 2,3-Dimethylbut-2-ene



No geometric isomer.