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DEPARTMENT: NURSING SCIENCE
MATRIC NUMBER: 19/MHS02/046
COURSE CODE: CHM102

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

(i) $CH_2=C(OH)HCHO$
a. alkene(double bond)
b. alkanol
c. alkanal
(ii) $C_6H_5CH(NH_2)COCH_3$
a.amine
b. alkanone/ketone
c. phenyl group
(iii) $CH_3C=CHCH(OH)CHO$
a. alkene
b. alkanol
c. alkanal

2.A 0.856 g sample of pure (2R, 3R)-tatrtaric acid was diluted to 10cm3 with water and placed in a 1.0 dm polarimeter tube. the observed rotation at 200 C was +1.00.
Calculate the specific rotation of (2R, 3R)-tatrtaric acid.

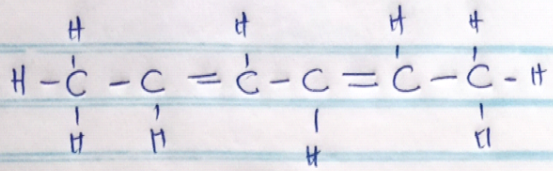
$$\text{Specific rotation} = \frac{\text{Observed rotation(degrees)}}{\text{concentration g/cm}^3 \text{ x path lenght of sample in dm}}$$

$$\text{Specific rotation} = \frac{+1.0^\circ}{0.0856 \text{g/cm}^3 \text{ x } 1\text{dm}}$$

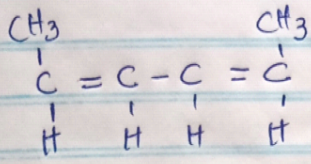
Specific rotation= $11.68^\circ g^{-1}cm^3dm^{-1}$
3.Draw the possible geometric isomers(where possible) for each of the following compounds
a. Hexa-2,4-diene b. 2,3-dimethylbut-2-ene

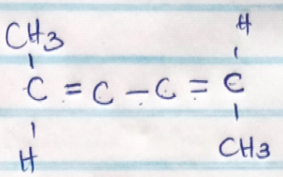
ANSWER

4.



Hexa 2, 4, di-ene

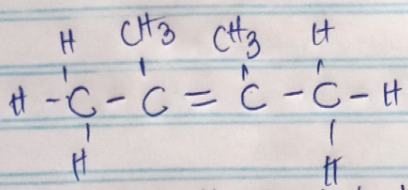




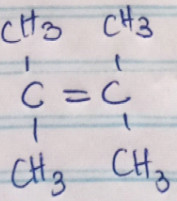
Cis Hexa 2,4, diene

trans Hexa 2,4, diene

(b)



2,3 dimethyl but-2-ene



2,3 dimethyl but-2-ene

(NO geometric isomers)