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DEPARTMENT: MEDICINE AND SURGERY

LEVEL: 100

COLLEGE: MEDICINE AND HEALTH SCIENCES

COURSE: CHM102

MATRIC NO: 19/MHS01/196

ASSIGNMENT

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

a. $CH_2=C(OH)HCHO$

b. $C_6H_5CH(NH_2)COCH_3$

c. $CH_3C=CHCH(OH)CHO$

ANSWER

A.FUNCTIONAL GROUP INCLUDES:

- ALKENE
- ALKANOLS (ALCOHOLS)
- ALDEHYDES

b. FUNCTIONAL GROUP INCLUDES:

- AMINES
- ALKANONES (KETONES)

c. FUNCTIONAL GROUP INCLUDES:

- ALKENE
- ALKANOL
- ALDEHYDES

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

Solution

OBSERVED ROTATION = 1.0^{o}

CONCENTRATION= MASS / VOLUME

$$\frac{0.856g}{10cm^3} = 0.0856g/cm^3$$

LENGTH OF SAMPLE CELL=1.0dm

$$\text{SPECIFIC ROTATION} = \frac{\text{Observed rotation in degrees}}{\text{Concentration} \times \text{length of cell sample}} = \frac{1}{0.0856 \times 1} = 11.68^{o}g^{-1}dm^{-1}$$

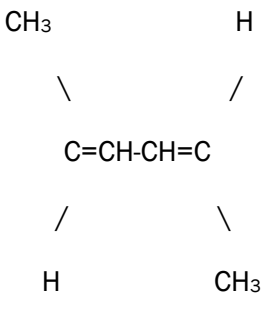
3. Draw the possible geometric isomer (where possible) for each of the following compounds.

I. Hexa-2, 4-diene

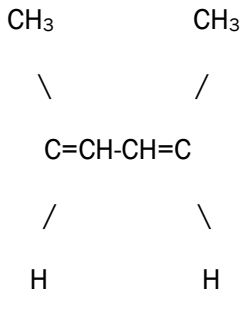
II. 2, 3,-Dimethylbut-2-ene

ANSWER

1.



Trans hexa-2,4-diene



Cis Hexa-2,4-diene

2. There is no possible geometric isomer for 2,3-Dimethylbut-2-ene.