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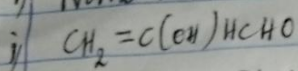
Matric number: 19/MHS01/421

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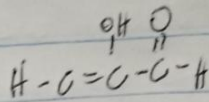
MBBS

Stereochemistry and functional group

i) Name the functional groups present in each of the following molecules,

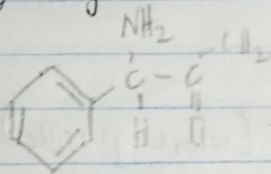
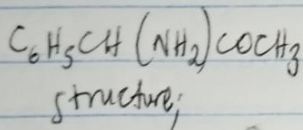


with structural formula



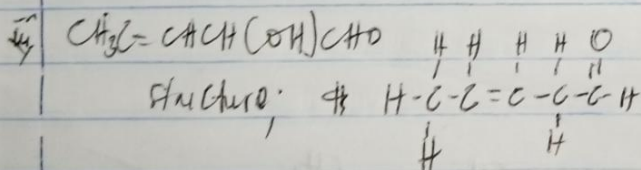
Functional groups present

- Double bond chain :- Alkene
- Hydroxyl group (-OH)
- Carbonyl group (-CHO) - alkanal



Functional group present

- Amine group (-NH₂) - Single bond chain (-C-H)
- Phenyl group (C₆H₅)
- Carbonyl group (-COR) - ketone



Functional group present

- Double bond (C=C)
- Hydroxyl group (-OH)
- Carbonyl group (-CHO) (as in alkanal)

2) A 0.356g sample of pure (2R, 3R)-tartaric acid was diluted to 100cm³ with water and placed in a 1.0dm² polarimeter tube. The observed rotation at 20°C was +1.0°. Calculate the specific rotation of (2R, 3R)-tartaric acid.

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Solution

Recall;

$$[\alpha]_{\lambda}^T = \frac{\alpha}{l \times c}$$

where;

l = length of sample base

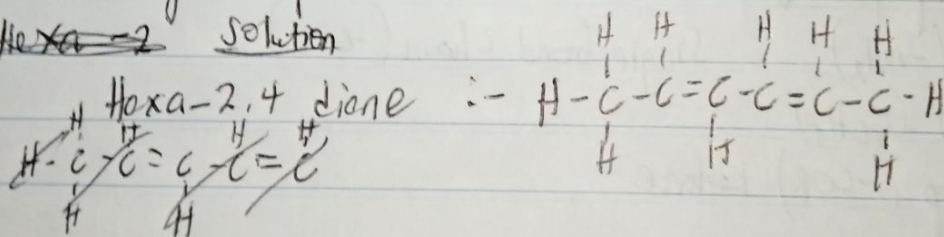
$c = \frac{\text{mass}}{\text{volume}}$; α = observed rotation

$$[\alpha]_D = \frac{\alpha}{1 \times \left(\frac{0.856}{10}\right)}$$

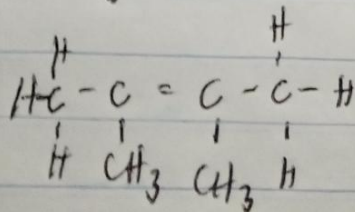
Specific rotation = 11.682°

- 3) Draw the possible geometric isomers (where possible) for each of the following compounds:

~~Hexa-2~~ Solution



2,3-dimethylbut-2-ene



OR

