

## Assignment on Stereochemistry and functional group

Name: Jatto Fadelah Enice

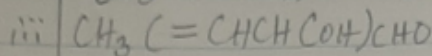
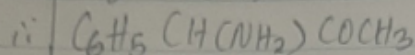
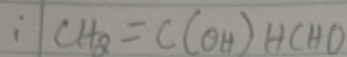
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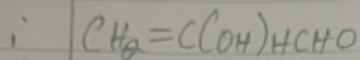
Course Code: CHM 102

### Assignment

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



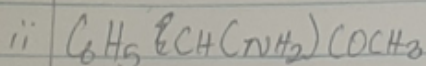
Solt



- Double bond chain

- Hydroxyl group

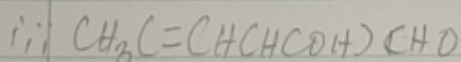
- Aldehyde



- Phenyl group

- Amine

- Ketone



- ~~Alk~~ Double bond chain

- Hydroxyl group

- ~~Alk~~ Aldehyde

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

Specific rotation,  $\alpha_{\lambda}^T = \frac{\alpha}{c \cdot l}$

$$\alpha = 1.0^\circ$$

$$c = \frac{\text{mass}}{\text{volume}} = \frac{0.856}{10} = 0.0856$$

$$l = 1.0 \text{ dm}$$

$$\alpha_{\lambda}^T = \frac{1.0}{0.0856 \times 1.0}$$

$$\text{So } \alpha_{\lambda}^T = 11.68^\circ \text{ g}^{-1} \text{ cm}^3 \text{ dm}^{-1}$$

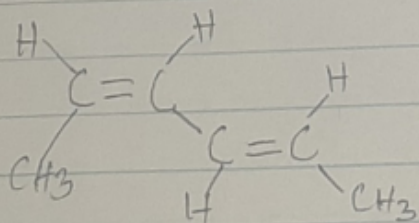
3 Draw the possible geometric isomers (where possible) for each of the following structure compounds:

i Hexa-2,4-diene

ii 2,3-Dimethylbut-2-ene

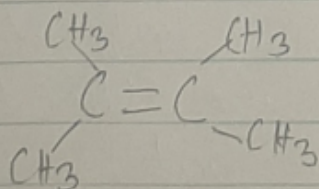
Solt.

i Hexa-2,4-diene



Cis,trans-Hexa-2,4-diene

ii 2,3-Dimethylbut-2-ene



2,3-Dimethylbut-2-ene (No possible geometric isomers)

