

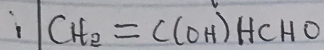
ILDDIBE ANTHONY UDENNA

COMPUTER ENGINEERING

19/ENGG02/026

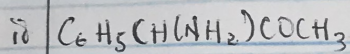
CHM 102

1 Name the functional group present in each of the following molecules



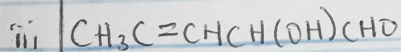
Functional group present are:

- Alkene group
- Hydroxyl group
- Aldehyde group



Functional group present are:

- Phenyl group
- Amine group
- Alkanone (ketone group)



Functional group present are:

- Alkene group
- Hydroxyl group
- Alkanal group

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

sol

$$\text{Recall; } [\alpha]_D^{25} = \frac{\alpha}{l \times c}$$

where; l = length of sample

c = $\frac{\text{mass}}{\text{volume}}$ (g/dm) or (g/mol)

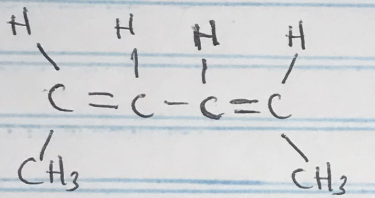
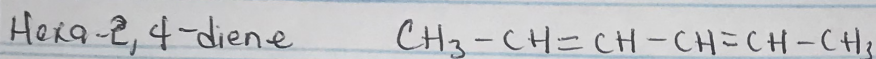
α = observed rotation

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

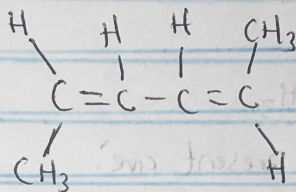
$$S_r = \frac{1}{0.0856}$$

$$\therefore S_r = +11.68^\circ$$

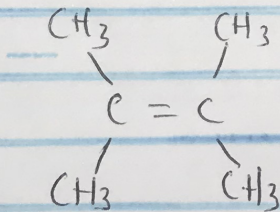
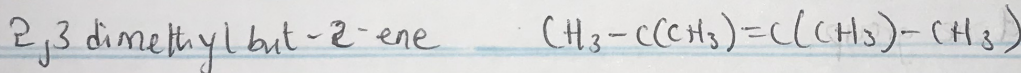
3 Draw the possible geometric isomers (where possible) for each of the following compounds



Cis Hexa-2,4-diene



trans-Hexa-2,4-diene



Due to the structure of the compound and the presence of 4 methyl groups that are the same, geometric isomerism cannot occur.