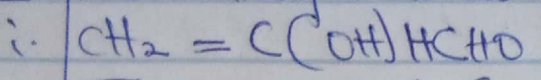


NAME: OLASDI. OLUWABARI. C  
 MATRIC NO: 19/ENGG07/016.

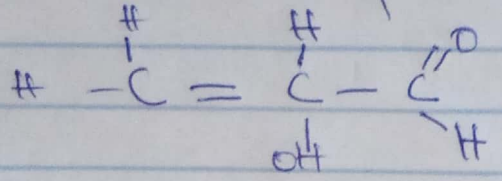
DEPT: PETROLEUM ENGINEERING.

ASS TITLE: STEREOCHEMISTRY AND FUNCTIONAL GROUP.

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

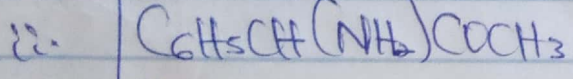


The structural formula:

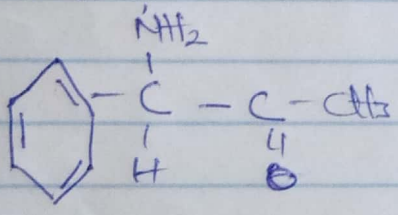


Functional groups present are:  
 Double chain = (Alkene)

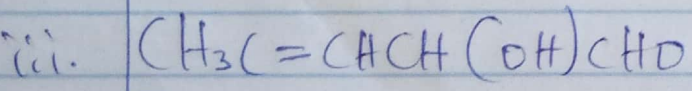
$OH$  = hydroxyl group  
 $C=O$  = Alkanol



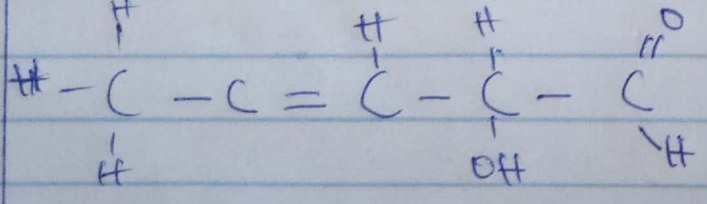
Structure:



Functional groups: - Phenyl group ( $C_6H_5$ ) with double bonds.  
 - Amines ( $NH_2$ )  
 - Alkanone/ketone ( $C=O$ )



Structure:



Functional groups: - Alkene ( $C=C$ )  
 - Hydroxyl group ( $OH$ )  
 - Alkanol ( $C=O$ )

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  $20^\circ C$  was  $+10^\circ$ . Calculate the specific rotation of (2R,3R)-tartaric acid

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

where

$l$  = length of sample tube  
 $c$  = mass (g/dm) or (g/mol)  
 Volume

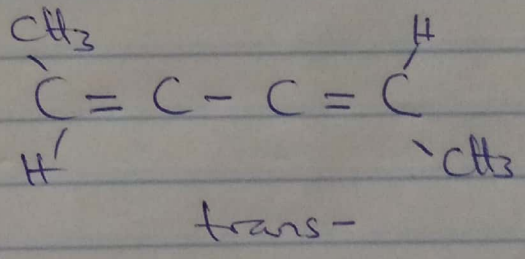
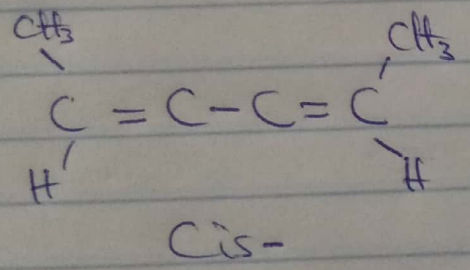
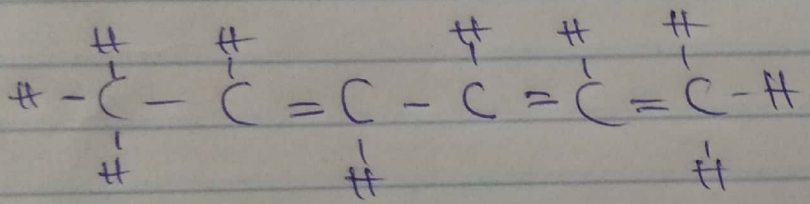
$\alpha$  = Observed rotation.

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

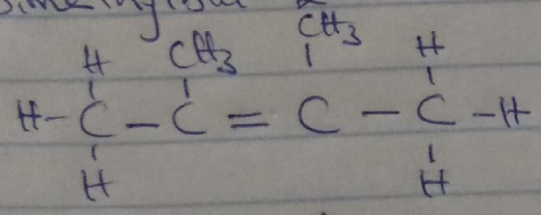
$$[\alpha] = \frac{1}{0.0856} = 11.68$$

3. Draw the possible geometric isomer (where possible) for:

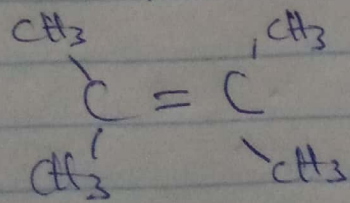
i. Hexa-2,4-diene



ii. Dimethylbut-2-ene



2,3-dimethylbut-2-ene



No geometric isomer