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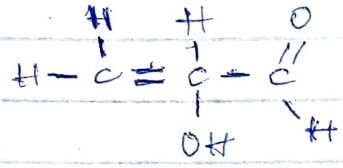
MECHATRONICS ENGINEERING
19/ENG05/043

CHM102 STEREOCHEMISTRY AND FUNCTIONAL GROUP

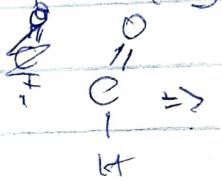
1) i) $CH_2 = C(OH)HCHO$

Structural formula:



Functional group are: Double ~~chain~~ bond ⇒ (Alkene) [C=C]

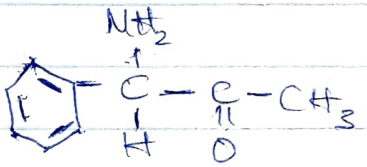
Hydroxyl group ⇒ OH



⇒ Alkanal

ii) $C_6H_5CH(CH_2)COCH_3$

Structure



Functional group are: Alkene [C=C] double ~~chain~~ bond

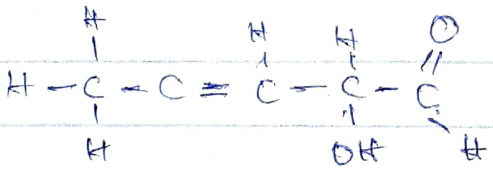
Amines (NH_2)

Alkanone/ketone ($C(=O)-R$)

Phenyl group ~~(C6)~~ (C_6H_5)

iii) $CH_3C=CHCH(OH)CHO$

Structure:



Functional group are: Alkene (C=C) double bond

Hydroxyl group ⇒ (OH)

Alkanal ⇒ 

2) Recall

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

where

l = length of sample tube

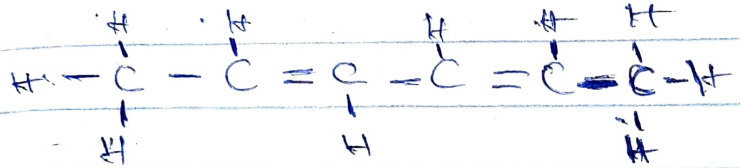
c = ~~mass~~ mass / volume (g/dm) or (g/mol)

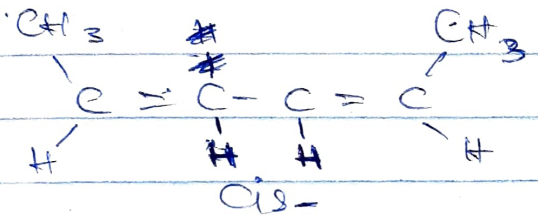
α = Observed Rotation

$$= \frac{1.0}{1.0 \times \left(\frac{0.856}{100}\right)}$$

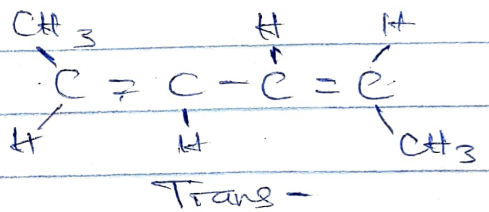
$$\int \delta = \frac{1}{0.0856} = 11.68$$

3) i) - Hexa - 2,4 - diene.



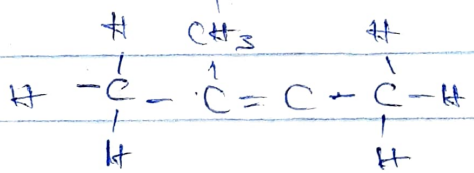


Cis -

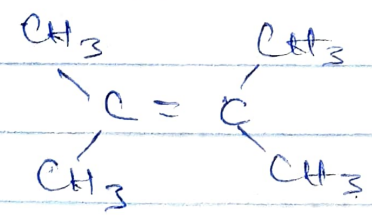


Trans -

ii) 2,3 - Dimethyl but - 2 - ene



2,3 - dimethyl but - 2 - ene.



(No geometric isomer).