20/4/20

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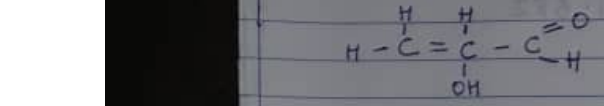
MBBS

CHEM102

Solution

1) i) $CH_2=C(OH)HCHO$ (ii) $C_6H_5CH(NH_2)COCH_3$
iii) $CH_3C=CHCH(OH)CHO$.

(i) Structural formular:



Functional Group Present

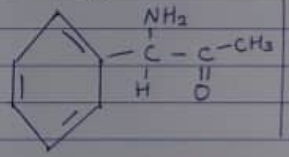
Double bond chain = (Alkene).
OH (hydroxyl group).

(Alkanol).

(ii)

ii) $C_6H_5CH(NH_2)COCH_3$

Structure



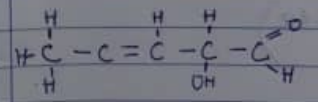
Functional Group present

Phenyl group (C_6H_5) with double bonds.
Amine.
Alkanone/Ketone 

(iii)

$CH_3C=CHCH(OH)CHO$

Structure



Functional Group Present

Alkene (C=C)
Hydroxyl group (OH)
Alkanol 

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

3) Draw the possible geometric isomers (where possible) for each of the following compounds: (i) Hexa-2,4-diene (ii) 2,3-Dimethyl but-2-ene.

Solution for NO 2 and NO3.

2) Recall;

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

where

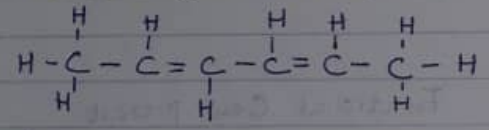
L = length of simple tube, $c = \frac{\text{mass}}{\text{volume}}$ (g/dm) or (g/ml)

α = observed rotation.

$$S_r = \frac{1.0}{1.0 \times \left(\frac{0.856}{10}\right)} = 11.682$$

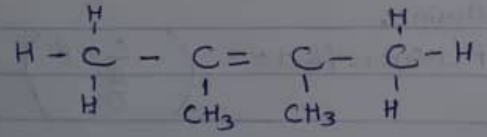
3) i)

Hexa - 2, 4 - diene



ii)

2, 3 - Dimethyl but - 2 - ene



OR