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Matric No:19/MHS01/328

Subject: CHM 102

CHM 102 ASSIGNMENT

1&2.

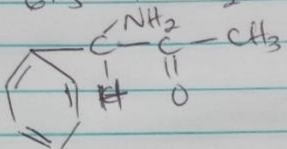
CHM 102

1. a)  $\text{CH}_2 = \overset{\text{OH}}{\text{C}} \text{HCHO}$

Functional group present:

- Double bond chain (Alkene)
- OH (Hydroxyl group)
- $\overset{\text{O}}{\parallel} \text{C} - \text{H}$  (Alkanol)

b)  $\text{C}_6\text{H}_5 \text{CH}(\text{NH}_2) \text{COCH}_3$



Functional group present:

- Phenol group with double bonds
- Amine ( $\text{NH}_2$ )
- Alkanone / ketone  $\overset{\text{O}}{\parallel} \text{C} - \text{R}$

c)  $\text{CH}_3 \text{C} = \text{CHCH}(\text{OH})\text{CHO}$

Functional group present:

- Double bond (=)
- $\overset{\text{O}}{\parallel} \text{C} - \text{H}$  Alkanol
- OH Hydroxyl group.

2) mass of tartaric acid = 0.856g

Vol. of water diluted in = 10cm<sup>3</sup>

Recall,

$$\text{Mass conc. (c)} = \frac{\text{Mass}}{\text{Vol}} = \frac{0.856\text{g}}{10\text{cm}^3}$$
$$= 0.0856\text{g/cm}^3$$

Vol. of polarimeter tube = 1dm<sup>3</sup>

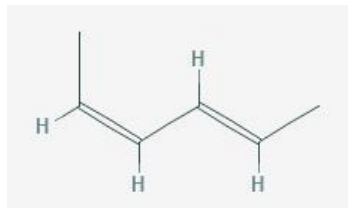
∴ length of tube = 1dm

Observed rotation ( $\alpha$ ) = +1.0° at 20°C

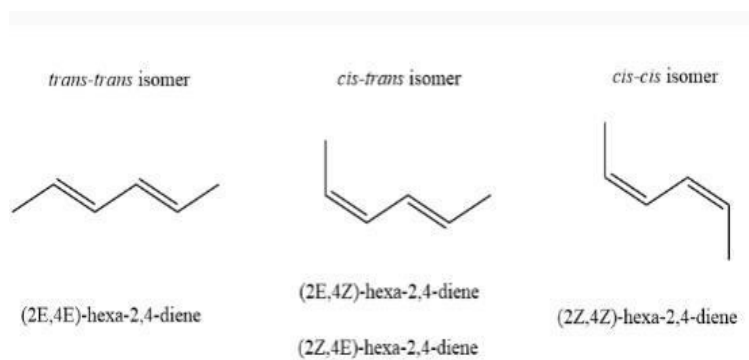
Specific rotation  $[\alpha] = ?$

$$[\alpha] = \frac{\alpha}{c \times l}$$
$$= \frac{+1.0^\circ}{0.0856\text{g cm}^{-3} \times 1\text{dm}}$$
$$[\alpha] = \frac{+1}{0.0856} = +11.6822^\circ$$

3A. Hexa-2,4-diene – has only 3 isomers



Isomers



B. 2,3 dimethyl but-2-ene. - does not have geometric isomers because there are two identical groups attached to the same carbon of the double bond.

