CHM 102

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MECHATRONICS ENGINEERING

19/ENG05/1014

STEREOCHEMISTRY AND FUNCTIONAL GROUP

~~$2H_2$~~

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

i) $CH_2 = C(OH)HCHO$

C=) alkene functional group
(OH) phydroxyl functional group
(CHO) Alkanal/Aldohyde functional group.

ii) $C_6H_5CH(NH_2)COCH_3$

(NH_2) Amine functional group
C=O Ketone functional group
(≡) di-alkyne functional group

iii) $CH_3C=CHCH(OH)CHO$

(=) Alkene functional group
(OH) hydroxyly functional group
(CHO) Alkanal functional group

2 A 0.856g same pure (2R, 3R)-tartaric acid was diluted to 10cm³ with water and placed in a 1.0m polarimeter trepe. The observed rotation at 20° was + 1.0°. calculate the specific rotation of (2R, 3R) tartaric acid

Concentration = 0.856g ÷ 10cm³ = 0.0856g/cm³
Observed rotatation = + 1.0°

co. Cpath length of sample all in dm = $1 dm^3$

Specific rotation = $\frac{\text{observed rotation}}{\text{conc. in g/cm}^3 \times \text{path length of sample all in dm}^3}$

Specific rotation = $\frac{+1}{0.0856 g/cm^3 \times 1 dm^3}$

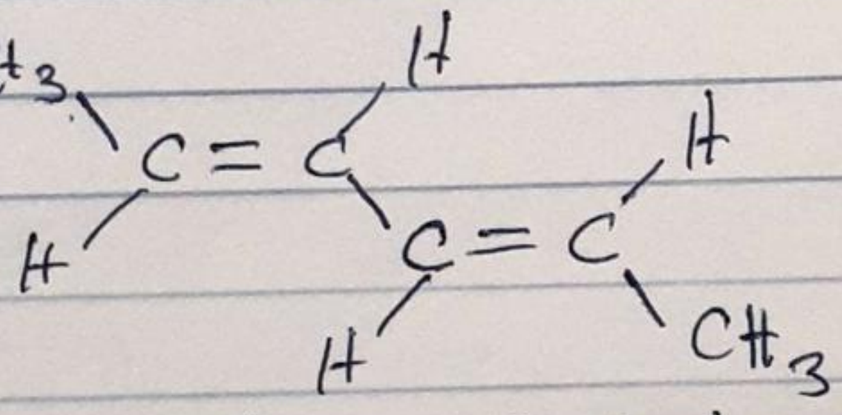
$= \underline{\underline{11.6822 g^{-1} cm^3 dm^{-1}}}$

1

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

: Hexan 2, 4 diene

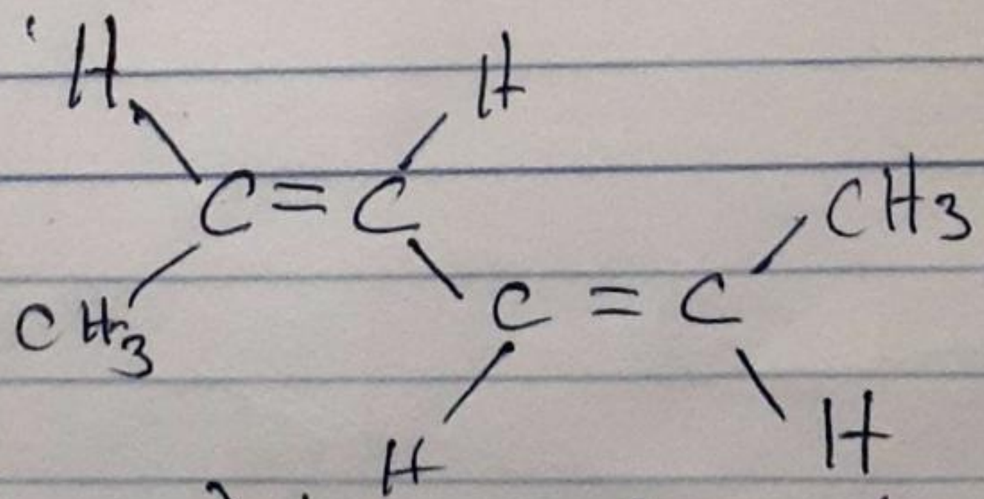
1)



(2E, 4E) hexan 2, 4 diene

trans - trans isomer

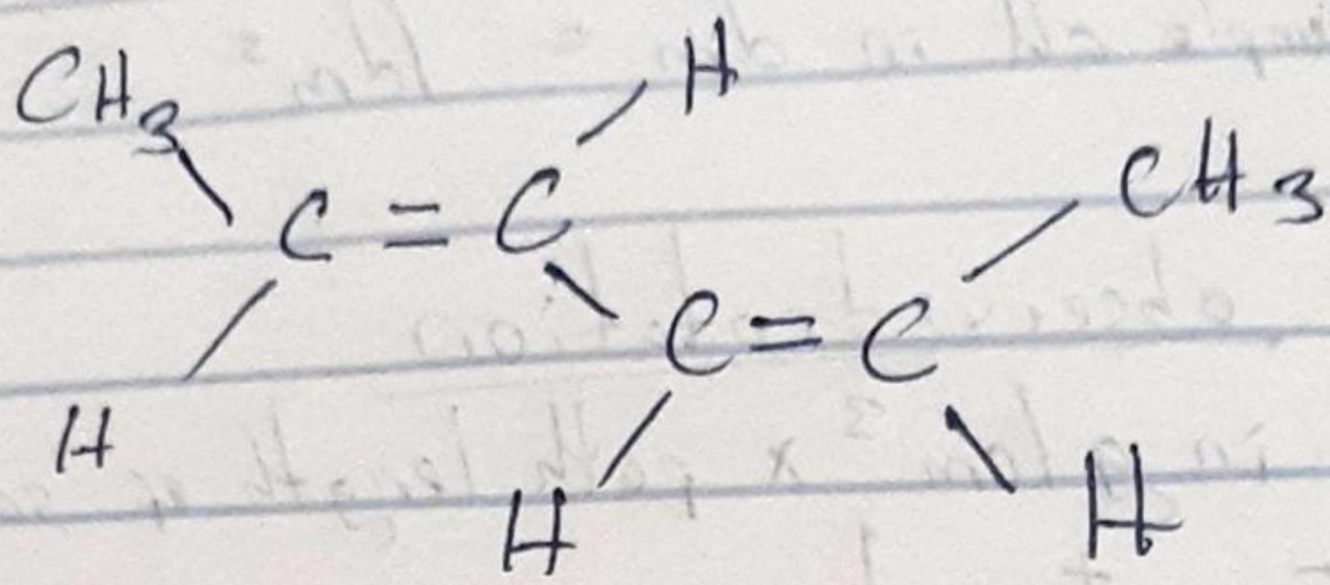
2 2z, 4z)



(2z, 4z) hexan 2, 4 diene

cis - cis isomer

3



(2Z, 4E) hexan-2,4- diene

cis-trans isomer.

ii 2,3 Dimethyl but-2-ene