

Name: Mathias Shadrach Ojochibe

Dept: Mechatronics Engineering

Matric: 19/ENG-05/1036

CHM 102

Assignment

1. Answer

- i. $\text{CH}_2=\text{C}(\text{OH})\text{HCHO} \rightarrow$ Alkene, Alcohols, Aldehydes
- ii. $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3 \rightarrow$ ~~Alkyl~~ Amines, Alkanone
- iii. $\text{CH}_3\text{C}=\text{CHCH}(\text{OH})\text{CHO} \rightarrow$ Alkene, Alcohols, Aldehydes

2. Answer

$$\text{Specific rotation} = \frac{\text{Observed rotation (degrees)}}{\text{Concentration in g/cm}^3 \times (\text{path length of sample in dm})}$$

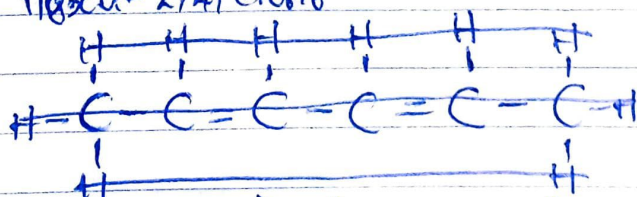
$$\text{Conc in g/cm}^3 = \frac{0.856\text{g}}{10\text{cm}^3}$$

$$= 0.0856\text{g/cm}^3$$

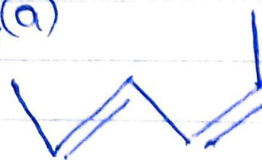
$$\text{Specific rotation} = \frac{+1.0^\circ}{(0.0856) \times (1)}$$
$$= +11.68\text{g}^{-1}\text{cm}^3\text{dm}^{-1}$$

3. Answer

(i) Hexa-2,4-diene



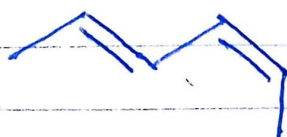
(2) (a)



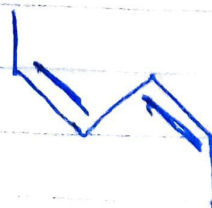
(b). (2E, 4E) - hexa-2,4-diene



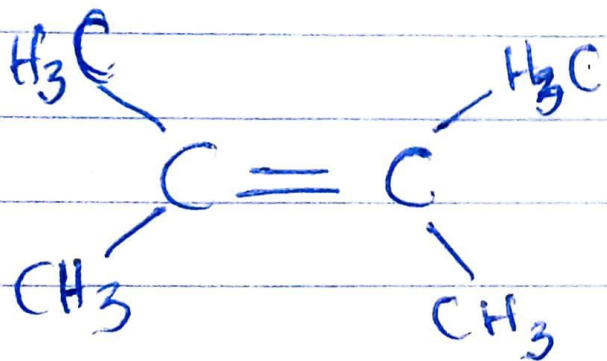
(c). (2E, 4Z) - hexa-2,4-diene



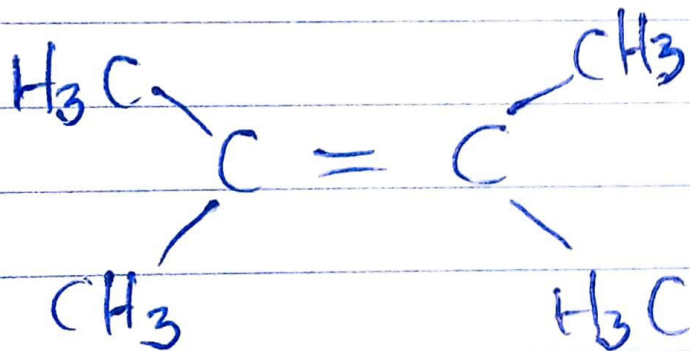
(d) (2Z, 4Z) - hexa-2,4-diene :



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



Cis-2,3-Dimethyl but-2-ene



Trans-2,3-Dimethyl but-2-ene