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DEPARTMENT: Nursing

MATRIC NO.: 19/mhs02/052

ASSIGNMENTS ON STEREOCHEMISTRY AND FUNCTIONAL GROUP

1. FUNCTIONAL GROUPS PRESENT IN MOLECULES OF COMPOUNDS

- I. $\text{CH}_2=\text{C}(\text{OH})\text{HCHO}$, functional groups include; $=$, $-\text{OH}$, $-\text{C}-\text{H}$ (Alkene, alcohols and alkanals)
- II. $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3$, functional groups include; phenyl group, amine(NH_2), ketones; $-\text{C}=\text{O}$
- III. $\text{CH}_3\text{C}=\text{CHCH}(\text{OH})\text{CHO}$, functional groups include; $=$ (alkene), aldehydes and alcohols ($-\text{OH}$)

2.

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

$$\text{Amount in grams} = 0.856\text{g}$$

$$\text{Amount in cm}^3 = 10\text{cm}^3$$

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

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

$$\text{Path length of sample in dm} = 1\text{dm}$$

$$\text{Specific rotation} = \frac{+1.0^\circ}{0.0856 \times 1}$$

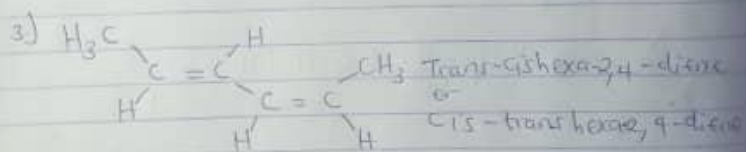
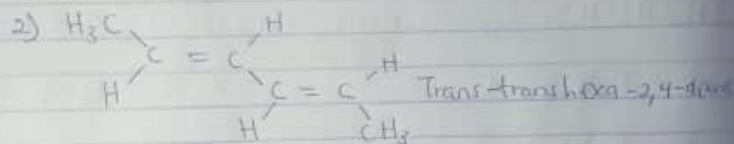
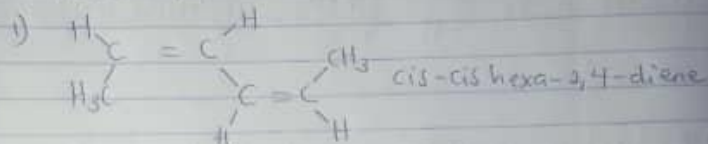
$$\text{Specific rotation} = 11.68\text{g}^{-1}\text{cm}^3\text{dm}^{-1}$$

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

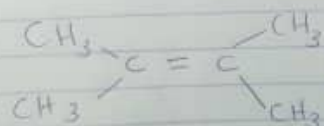
i) Hexa-2,4-diene

ii) 2,3-Dimethylbut-2-ene

i) Hexa-2,4-diene.



ii) 2,3-Dimethylbut-2-ene.



Cannot form geometric isomers. Each double bonded carbon has identical groups.