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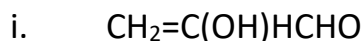
DEPT/COL: MECHATRONICS ENGINEERING

MATRIC NO: 19/ENG05/010

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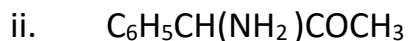
ANSWERS

1. Functional groups



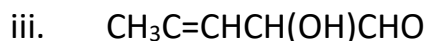
The functional groups present are:

- Double bond (=)
- Hydroxyl group (OH)
- Alkanal (CHO)



The functional groups present are:

- Amines (NH_2)
- Double bond (=)
- Alkanones (CO)



- Double bond (=)
- Hydroxyl group (OH)
- Alkanal (CHO)

QUESTION TWO

Observed rotation in degrees = 1°

Path length of sample cell in dm = 1dm

$$\text{Concentration } \text{g/cm}^3 = \frac{0.856\text{g}}{10\text{cm}^3} = 0.0856\text{g/cm}^3$$

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

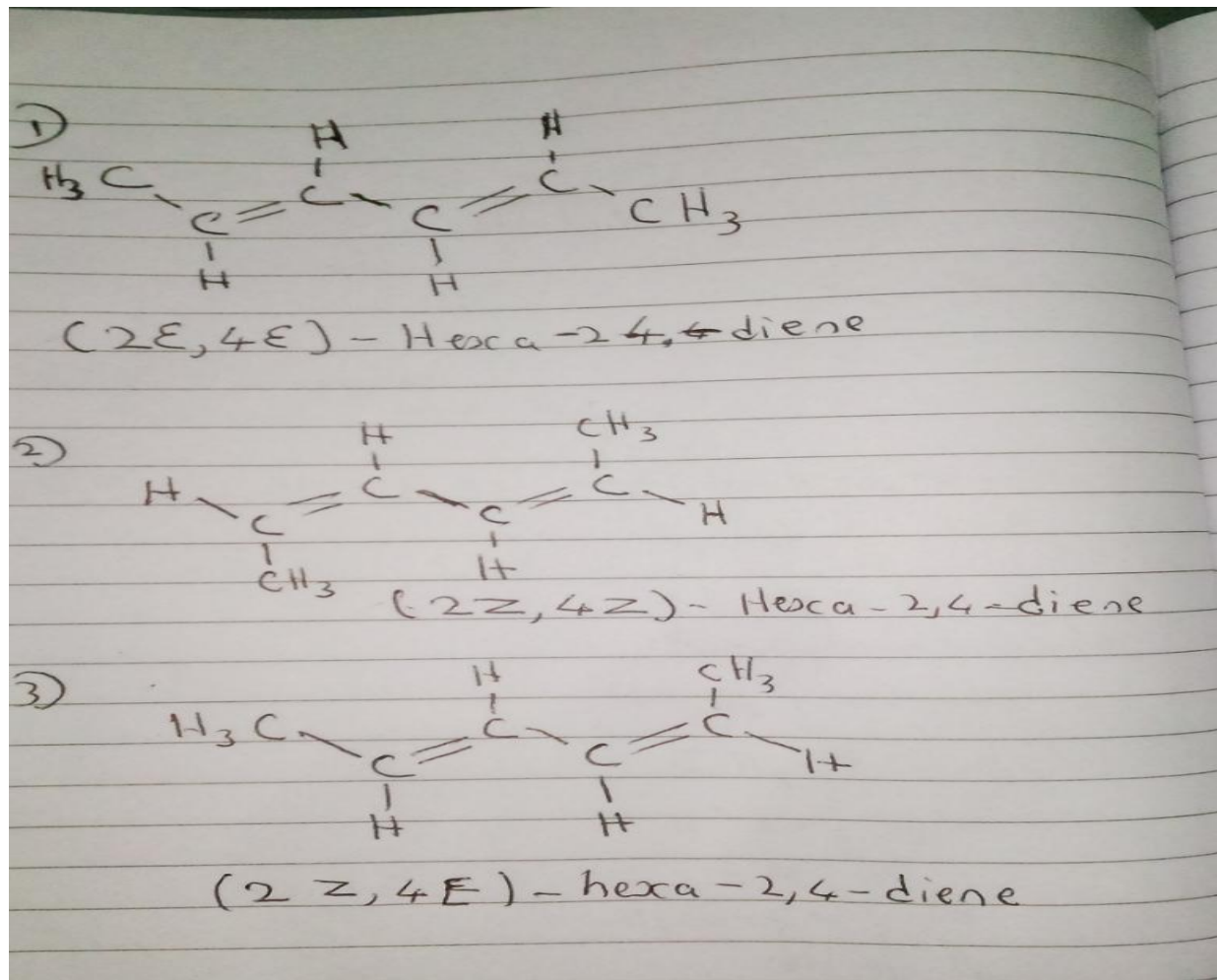
$$= \frac{1^\circ}{0.0856 \times 1}$$

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

QUESTION THREE

Geometric isomers

i Hexa-2,4-diene: This has 3 geometric isomers.



NOTE: Where E is Entgegen, a German word for 'apart' which can be used in place of **TRANS**.

Where Z is Zusammen, a German word for 'together' which can be used in place of **CIS**.

ii. 2,3-Dimethylbut-2-ene

It does not have geometric isomers because there are two identical groups attached to the same carbon of the double bond.

