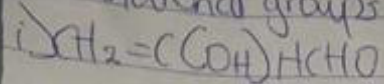


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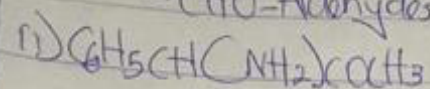
ASSIGNMENT

1) Functional groups present in the following molecules are;



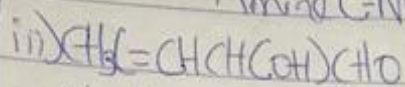
-OH (Alcohols or alcohols)

-CHO - Aldehydes or alkanals.



-ketones (C-COCH₃)

-Amine (C-NH₂)



-Hydroxyl (-OH)

-Aldehyde (-CHO)

2) Solution

$$[\alpha]_D^{25} = \frac{\alpha}{C \cdot l}$$

(1)

where $[\alpha]$ = specific optical rotation

α = Observed rotation

C = concentration in g/ml

l = path length (in dm)

$$\alpha = +1.0^\circ$$

$$l = 1.0 \text{ dm}$$

$$C = ?$$

The concentration is always measured in g/ml. In the question we were already given the mass in g so convert the volume of water (1000 cm³) to ml

$$1 \text{ Litre} = 1000 \text{ cm}^3$$

$$1 \text{ ml} = 1 \text{ cm}^3$$

$$1 \text{ cm}^3 = 1 \text{ ml}$$

$$10 \text{ cm}^3 = \frac{10 \text{ cm}^3}{1 \text{ cm}^3} \times 1 \text{ ml} = 10 \text{ ml}$$

$$\frac{10 \text{ cm}^3}{1 \text{ cm}^3}$$

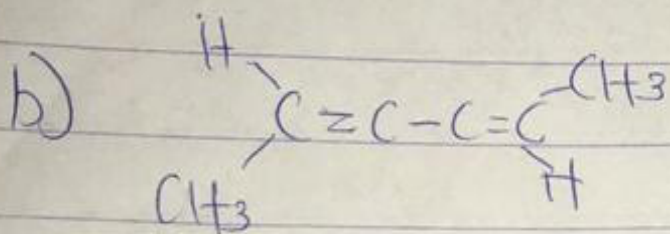
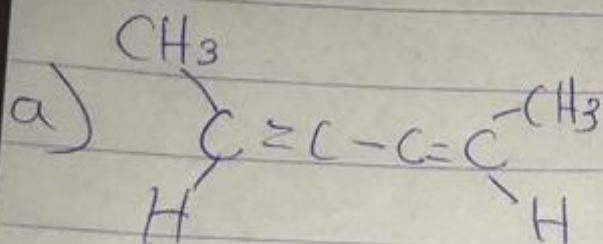
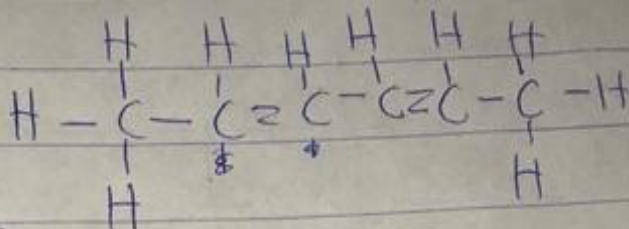
$$\text{Concentration} = \frac{g}{ml} = \frac{0.856}{10}$$

$$= 0.0856 \text{ g/ml}$$

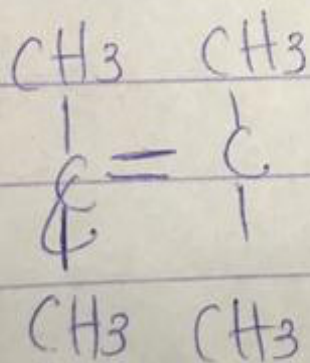
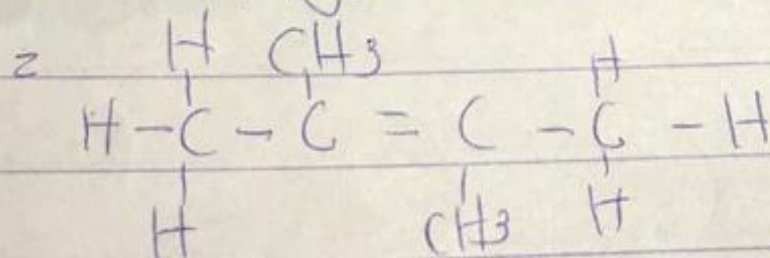
$$[\alpha]_D^{25} = \frac{1.0}{0.0856} \times 1 = +11.68^\circ$$

3) Possible geometric isomers for each of the following compounds:

i) Hexa-2,4-diene =



ii) 2,3-Dimethylbut-2-ene



∴ There is no Geometric isomerism possible for 2,3-Dimethylbut-2-ene