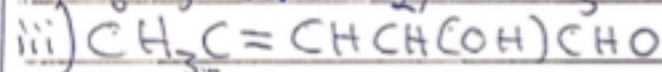
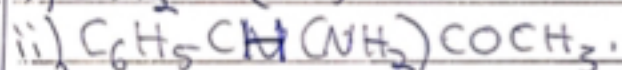
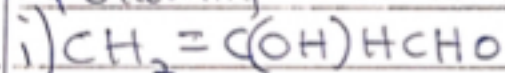
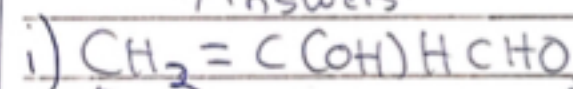


## Assignment.

1. Name the functional groups present in each of the following molecules.



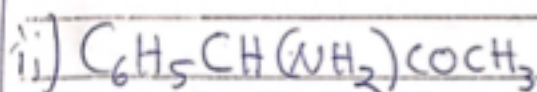
Answers



Functional group :- i) aldehyde

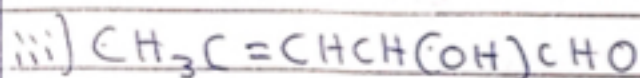
ii) alcohol

iii) alkene



Functional group :- i) amides

ii) ketones



Functional group :- i) Alkene

ii) Alkunal

iii) aldehydes

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2. A 0.856g sample of pure (2R, 3R) - tartaric acid was diluted to 10cm<sup>3</sup> with water and placed in a 1.0dm<sup>3</sup> polarimeter tube. The observed rotation at 20°C was +1.0°. Calculate the specific rotation of (2R, 3R) - tartaric acid.

Answers

Observed rotation = 1.0°

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

Length of sample cell (polarimeter) = 1.0dm

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

2. A 0.856g sample of pure (2R,3R)-tartaric acid was diluted to 10cm<sup>3</sup> with water and placed in a 1.0dm polarimeter tube. The observed rotation at 20°C was +1.0°. Calculate the specific rotation of (2R,3R)-tartaric acid.

Answers:

Observed rotation = 1.0°

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

Length of sample cell (polarimeter) = 1.0dm

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

Specific rotation of the sample =  $\frac{1}{0.0856 \times 1}$   
 $= \frac{1}{0.0856} = 11.68^\circ g^{-1} cm^3 dm^{-1}$

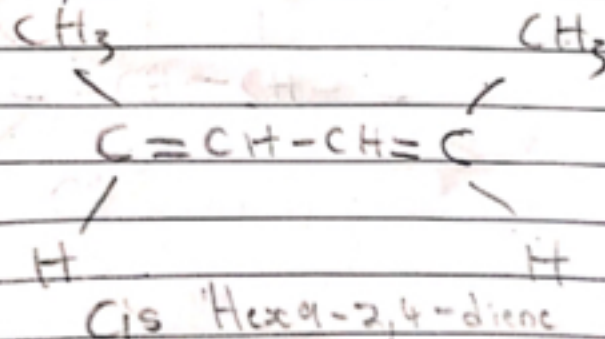
3. Draw the possible geometric isomers (where possible) for each of the following compounds.

i) Hexa-2,4-diene

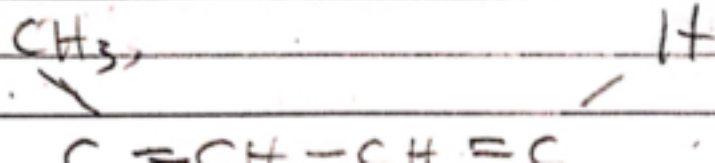
ii) 2,3-Dimethylbut-2-ene

Answers:

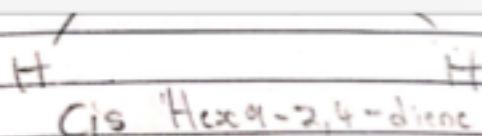
i) Hexa-2,4-diene



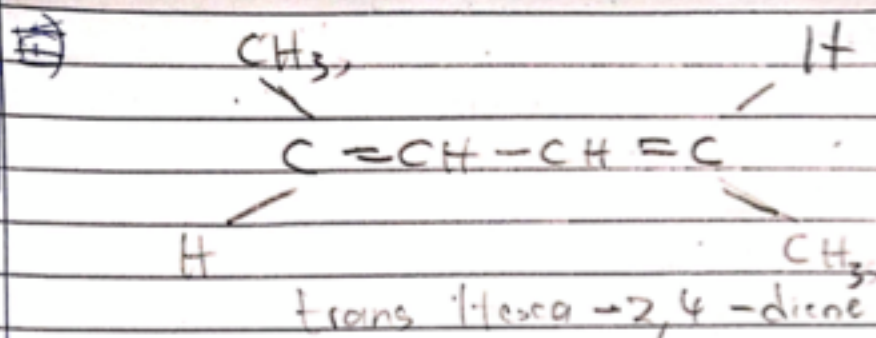
ii)



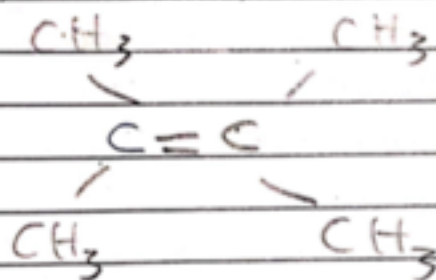
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ii) 2,3-Dimethylbut-2-ene



Geometric isomers is not possible for  
2,3-Dimethylbut-2-ene

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