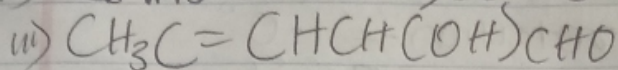
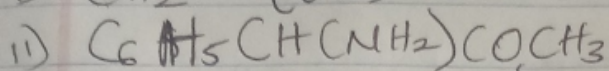
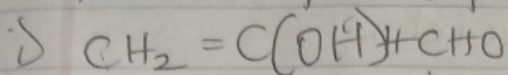
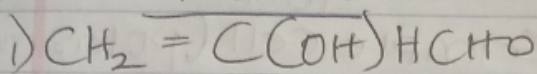


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Assignment

i) Name the functional groups present in each of the following molecules.



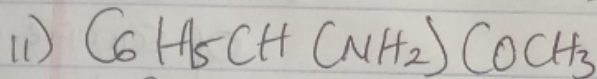
Answers



Functional group: i) aldehyde

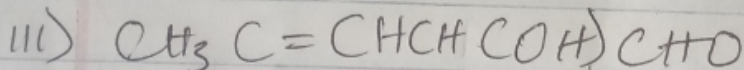
ii) alcohol

iii) alkene



functional group: - i) amides

ii) ketones.



functional group: i) Alkene

ii) Alcohol

iii) Aldehydes

2. A 0.856g sample of pure (2R, 3S) tartaric acid was diluted to 10cm^3 with water and placed in a 1.0dm polarimeter tube.

the observed rotation at 20°C was $+1.0^{\circ}$ & calculate the specific rotation of (2R,3R)-tartaric acid.

Soln

$$\text{Observed rotation} = +1.0^{\circ}$$

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

length of sample cell (polarimeter) = 10 cm

\therefore specific rotation =

Observed rotation (degrees)

Concentration in g/cm^3 \times path length

in cm of sample cell

Specific rotation of the sample =

$$\frac{+1.0}{0.856 \times 10}$$

$$= \frac{+1.0}{8.56}$$

$$= +11.6809\text{ }^{\circ}\text{cm}^3\text{ g}^{-1}\text{ dm}^{-1}$$

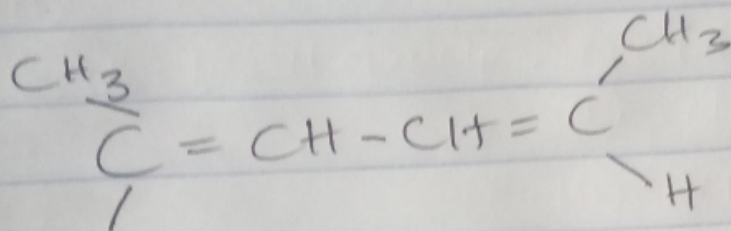
3) Draw the possible geometric isomers (where possible) for each of the following compounds.

i) Hexa-2,4-diene

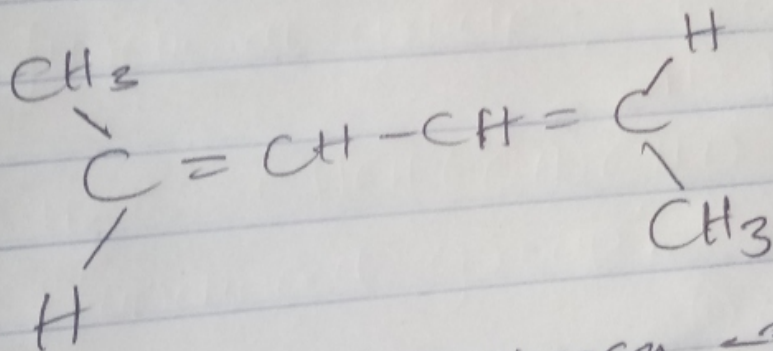
ii) 2,3-Dimethylbut-2-ene.

Soln

i) Hexa-2,4-diene

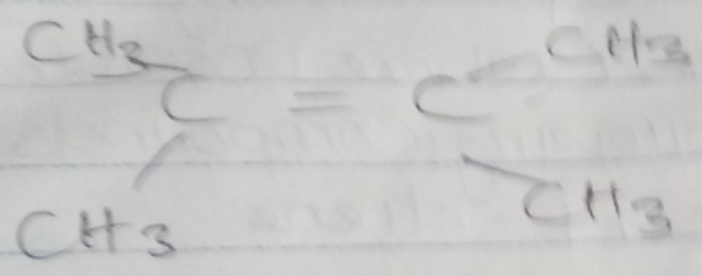


Cis Hexa-2,4-diene.



trans Hexa-2,4-diene

1) 2,3-Dimethylbut-2-ene



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