

HM 102 Assignment on STEREOCHEMISTRY

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

- i) $CH_2=C(OH)HCHO$: $=$ (alkene functional group)
 $-OH$ (alcohol functional group)
 $-CHO$ (aldehyde functional group)
- ii) $C_6H_5CH(NH_2)COCH_3$: $-NH_2$ (amine functional group)
 $-C=O$ (carbonyl functional group)
- iii) $CH_3C=CHCH(OH)CHO$: $=$ (alkene functional group)
 $-OH$ (alcohol functional group)
 $-CHO$ (aldehyde functional group)

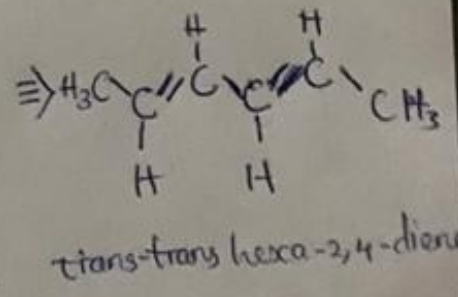
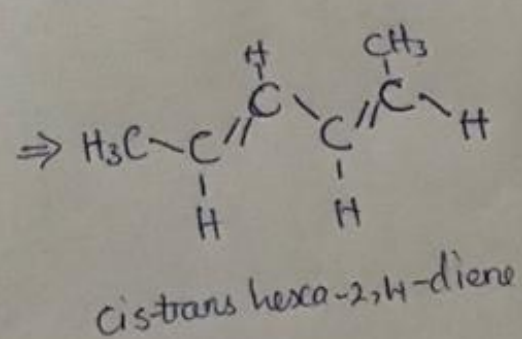
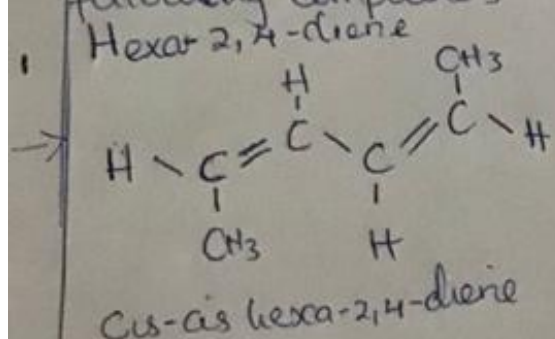
2 A 0.856g sample of pure (2R, 3R)-tartaric acid was diluted to 10cm³ with water and placed in a 10dm polarimeter tube, the observed rotation at 20°C was +1.0°. Calculate the specific rotation of (2R, 3R)-tartaric acid

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

Conc = $\frac{0.856g}{10cm^3}$ S.R = $\frac{+1.0^\circ}{(0.0856g/cm^3)(1dm)}$

∴ Specific rotation = $+11.68^\circ$

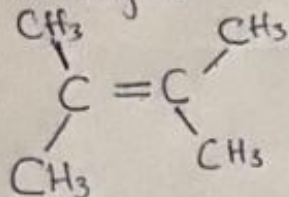
3 Draw the possible geometric isomers (where possible) for each of the following compounds



ii

2,3-

Dimethylbut-2-ene



This compound cannot show geometric isomerism as it has the same groups attached to the carbons having the double bond.