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**Questions**

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

(i) CH2=C(OH)HCHO (ii) C6H5CH(NH2)COCH3(iii) CH3C=CHCH(OH)CHO

2. A 0.856 g sample of pure (2R, 3R)-tatrtaric acid was diluted to 10cm3 with water and placed in a 1.0 dm polarimeter tube. The observed rotation at 200 C was +1.00. Calculate the specific rotation of (2R, 3R)-tatrtaric acid.

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**

**(1)**

(i) CH2=C(OH)HCHO – Alkene (=), Hydroxyl (-OH) and Alkanal (H  C=O )

(ii) C6H5CH(NH2)COCH3 – (-NH2)Alkanide , (-OH)Hydroxyl, Alkanone or Ketone C = O

(iii) CH3C=CHCH(OH)CHO – (=)Alkene, (-OH) Hydroxyl, Alkanal (H  C=O )

**(2)**

10cm3 = 10 ml

0.856g in 10 ml of solutions = 0.0856gml-1

[$α$]IT = $\frac{α}{lC}$

$∴$ [$α$]D20.0 = $(+1.00 )/((1.00 dm)(0.0856gml^{-1})$

$∴$ [$α$]D20.0  = +11.680

**(3)**

**(I) HEXA-2,4-DIENE:**

There are three possibilities are (*E,E*), (*E,Z*) and (*Z,E*). However, (*E,Z*)(*Z,E*).

1. **(2*E,*4*E*)-hexa-2,4-diene.**
2. **(2E,4Z)-hexa-2-4-diene**
3. **(2*Z*,4*Z*)-hexa-2-4-diene**

**(II) 2,3-DIMETHYLBUT-2-ENE**