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ASSIGNMENT ON STEREOCHEMISTRY AND FUNCTIONAL GROUPS.

1. Name the functional groups present in each of the following molecules:
2. CH2=C(OH)HCHO: alkene(=), alkanol(-OH) and alkanal(-CHO) functional groups.
3. C6H5CH(NH2)COCH3: amine(-NH2) and ketone(-C=O) functional groups.
4. CH3C=CHCH(OH)CHO: alkene(=), alkanol(-OH) and alkanal(-CHO) functional groups.
5. A 0.856g sample of pure (2R, 3R)- tartaric acid was diluted to 10cm3 with water and placed in a 1.0dm polarimeter tube. The observed rotation at 200C was +1.00. Calculate the specific rotation of (2R, 3R)-tartaric acid.

SOLUTION: specific rotation=?, observed rotation= +1.00, concentration in g/cm3= 0.856g÷10cm3 = 0.0856g/cm3, path length of sample cell in dm= 1dm

Specific rotation= observed rotation(degrees)

(concentration(g/cm3)×path length of sample cell in dm.

= +1.00

0.0856g/cm3×1dm

Therefore, specific rotation = +11.680g-1cm3dm-1.

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

## Hexa-2,4-diene

H H

C=CH-CH=C

CH3 CH3 Cis-hexa-2,4-diene.

H CH3

C=CH-CH=C

CH3 H Trans-hexa-2,4-diene.

# 2,3-Dimethylbut-2-ene

CH3 CH3

C=C

CH3 CH3