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

a.CH2=C(OH)HCHO – aldehyde group(-CHO), Hydroxyl group(-OH) and double bond.

b.C6H5CH(NH2)COCH3 – phenyl group, carbonyl group (-C=O) and amine group (NH2).

c.CH3C=CHCH(OH)CHO – hydroxyl group(-OH), aldehyde group(-CHO), and double bound.

2. A 0.856g sample of pure (2R,3R)- tatrtaric acid was diluted to 10cm3 with water and placed in a 1.0dm polarimeter tube, the observed rotation at 20^0 was +1.0^0. Calculate the specific rotation of (2R,3R)- tatrtaric acid.

Solution.

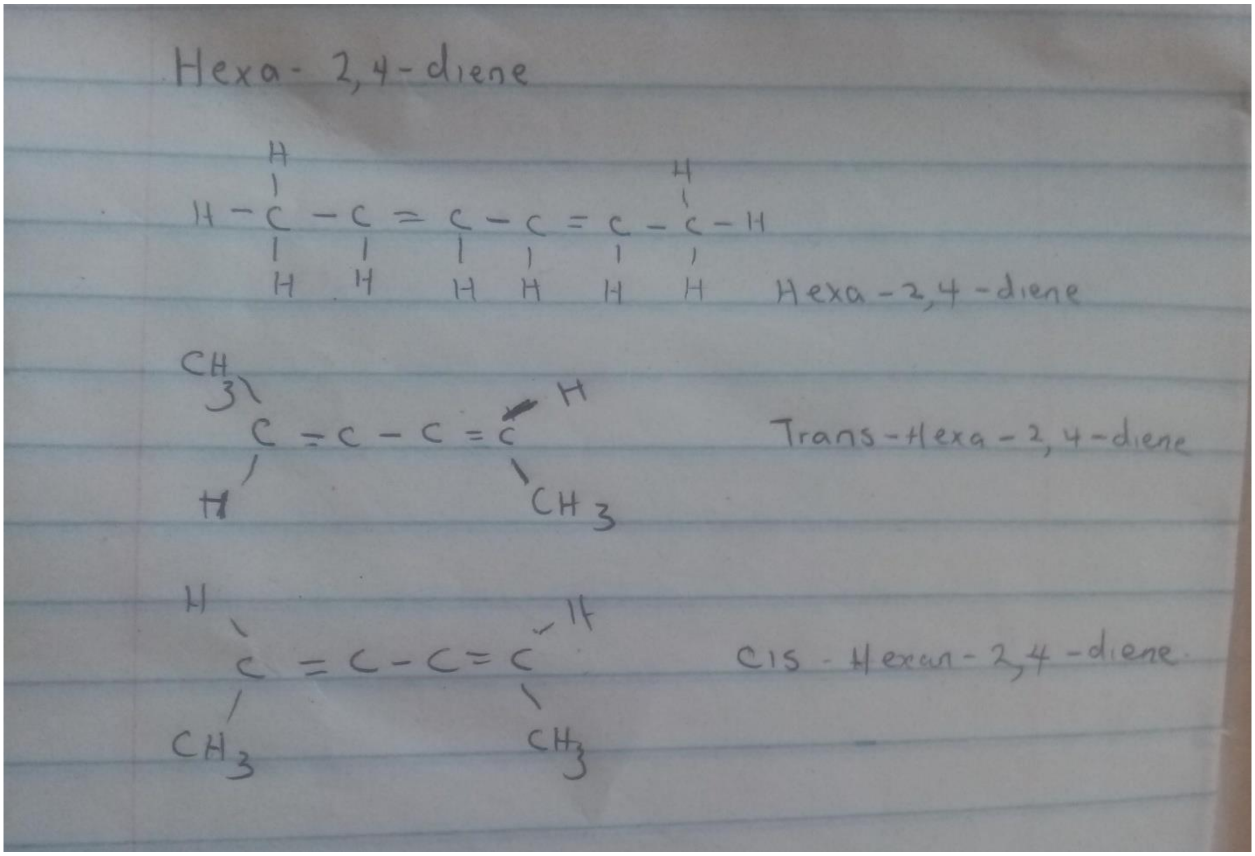
0.856g to cm3= 0.856g/10cm3 = 0.0856g/cm3.

To find specific rotation= observed rotation (degrees) /conc.* path length of sample cells in dm

=1.0/0.0856*1 = 1.0/0.0856 = 11.68= 11.7^0g^_1cm^3dm^-1.

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

A.Hexa-2,4-diene .



2,3-dimethylbut-2-ene.

Ans: this does not have a geometric isomers because they are two identical groups attached to the same carbon of the double bond.