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COLLEGE: MHS

DEPARTMENT: NURSING SCIENCE

COURSE CODE: CHM102

1. Name the functional group present in each of the following molecule;

$$CH\_{2}=C\left(OH\right)HCHO, C\_{6}H\_{5}CH\left(NH\_{2}\right)COCH\_{3}, CH\_{3}C=CHCH\left(OH\right)CHO$$

ANSWERS

1. $CH\_{2}=C\left(OH\right)HCHO-$ Aldehyde group (-CHO), Hydroxyl group(-OH) and Double bond
2. $C\_{6}H\_{5}CH\left(NH\_{2}\right)COCCH\_{3}-$Phenyl group, Carbonyl group (-C=O) and Amine group ($NH\_{2})$
3. $CH\_{3}C=CHCH\left(OH\right)CHO$−Hydroxyl group (-OH), Aldehyde group (-CHO), and Double bond.
4. A 0.865g sample of pure (2R, 3R) tatrtaric acid was diluted to 10$cm^{3}$ with water and placed in a 1.0dm polarimeter tube. The observed rotation at 20$℃$ was +1.0$°$ calculate the specific rotation of (2R, 3R) tatrtaric acid.

ANSWER

Concentration=$\frac{0.865g}{10cm^{3}}$=0.0865g/$cm^{3}$

Observed rotation=+1.0$°$

Path length=1dm

Specific rotation=$\frac{observed rotation (degrees)}{Concentration × Path ength of sample cell in dm}$=$\frac{1.0°}{0.0865cm^{3}×1dm}$

Specific rotation =11.560$°g^{-1}cm^{3}dm^{-1}$

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

$$Hexa-2,4-diene and 2,3-Dimethylbut-2-ene$$

ANSWERS

1. 2, 3-Dimethylbut-2-ene, does not have a geometric isomer because there are two identical groups attached to the same carbon of the double bond.
2. Hexa-2,4-diene