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(Course Chemistry 102 Stereodchemistry Assignment

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

(A) $\text{CH}_2 = \text{C}(\text{OH})\text{CHO}$ - [Double bond (C=C), hydroxyl group (C-OH), and carboxyl group (C=O)]

(B) $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3$ - [Amino group (C-NH₂) and carboxyl group (C-C=O)]

(C) $\text{CH}_3\text{C}=\text{CH}(\text{OH})\text{CHO}$ - [Double bond (C=C), hydroxyl group (C-OH) and carboxyl group (C=O)]

(2) A 0.856g sample of pure (2R,3R)-tartaric acid was diluted to 100ml with water and placed in a 1.0dm polarimeter tube. The observed rotation at 20°C was +1.0°. Calculate the specific rotation of (2R,3R)-tartaric acid

$$[\alpha]_D^{20} = \frac{\alpha}{LC}$$

where $[\alpha]_D^{20}$ = Specific rotation (°)

α = Observed rotation (°)

l = Cell path length in decimetres

C = Concentration in g/mol

~~to~~ Concentration in g/mol

if 0.856g is 10ml of solution

(∴ 0.856g will be present in

$$[\alpha]_D^{20} = \frac{+1.0}{1.0 \times 0.856}$$

$$\therefore [\alpha]_D^{20} = +11.86^\circ$$

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

① Hepta-2,4-diene

