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**DEPARTMENT: DENTISTRY AND DENTAL SURGERY.**

**COURSE: CHM IO2.**

**QUESTION 1:**

1. It has three functional groups:

* Alkene.
* Hydroxyl group.
* Aldehyde.

1. It has two functional groups:

* Amino group
* Aromatic group (Phenyl group)
* Ketone (Carbonyl group)

1. It has three functional groups:

* Alkene
* Hydroxyl group
* Aldehyde

**QUESTION 2:**

Specific rotation= Observed rotation (degrees)

(Concentration g/cm3) x (Path length of sample cell in dm)

Observed rotation= +1.0°, Path length= 1dm, Mass= 0.856g, Volume= 10cm3

Concentration g/cm3= Mass/g

Volume/cm3

Concentration g/cm3= 0.856

10

Concentration= 0.0856g/cm3

Specific rotation= 1.0°

0.0856 x 1

Specific rotation= 11.68°g-1cm3dm-1

**QUESTION 3:**

1. Hexa-2,4-diene

H H

H C C=C C=C C H

H H

Isomers:

CH3 CH3 CH3 H

C=C C=C C=C C=C

H H H CH3

cis-Hexa-2,4-diene trans-Hexa-2,4-diene

1. 2,3-Dimethyl but-2-ene

HCH3CH3

H C C=C C H

H H

CH3 CH3

C=C

CH3 CH3

No geometric isomer.