

Name: SAAC GRACE ANOHOICHO  
 DEPARTMENT: PETROLEUM ENGINEERING  
 MATRIC. NO: K151409/012

- 1.) (i)  $\text{CH}_2 = \text{C}(\text{OH})\text{HCHO}$  - Alkene, Alcohol, Alkanal  
 (ii)  $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3$  - Amine, Benzene  
 (iii)  $\text{CH}_3\text{C}=\text{CHCH}(\text{OH})\text{CHO}$  - Alkene, Alcohol, Alkanal

2.)  $[\alpha]_D^{20} = \frac{\alpha}{c \times l}$

Solution  
 $m = 0.856 \text{ g}$ ,  $V = 10 \text{ cm}^3$ ,  $c = \frac{0.856}{10} = 0.0856 \text{ g/cm}^3$   
 $\alpha = +1.0^\circ$   
 $l = 1 \text{ dm}$   
 $T = 20^\circ\text{C}$

$[\alpha]_D^{20} = \frac{1.0}{0.0856 \times 1} = \frac{1}{0.0856}$   
 $[\alpha]_D^{20} = 11.6822$   
 $= 11.68^\circ / \text{g cm}^3 \text{ dm}$

3.) (a) Hexa-2,4-diene - No geometric isomers

(b) 2,3-Dimethyl but-2-ene

