

### Homework exercises for the 3<sup>rd</sup> Year

- I: Find out what common functional groups contain oxygen.  
II: What type of compounds are these?  
(i)  $\text{CH}_3\text{CONH}_2$ ;      (ii)  $\text{CH}_3\text{CH}_2\text{COCl}$ ;      (iii)  $\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_2\text{CH}_3$ .
- I: Find out the name of an alkane with 15 carbons.  
II: Name these compounds:  
(i)  $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$ .  
(ii)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_3$ .
- I: Find as many different kinds of isomerism as you can.  
II: Make as many different isomers as you can with the molecular formula  $\text{C}_6\text{H}_{14}\text{O}$ .
- I: Find out the name of the typical reaction of alkanes.  
II: Write the equation for the reaction between nonane and chlorine in sunlight.
- I: Find out the proper chemical names of some plastics. What group of compounds do they belong to?  
II: Write an equation for the polymerisation of pent-2-ene.