ORGANIC REACTIONS II

6) CONDENSATION REACTIONS

a) Formation of Ethers

General Reaction:

alcohol + alcohol ether + water
$$R - OH + HO - R' \xrightarrow{H_2SO_4} R - O - R'$$

Example:

$$H_3C$$
— CH_2 — CH_2 — OH + H_3C — OH H_2SO_4 H_3C — CH_2 — CH_2 — CH_2 — O — CH_3 + H_2O

b) Formation / Decomposition of Esters

General Reaction:

Example:

c) Amides

General Reaction:

$$R-NH$$
 + HO $C-R'$ H_2SO_4 $R-N-C-R$

Example:

7) SYNTHESIS OF AMINES

General Reaction:

alkyl halide + ammonia
$$\longrightarrow$$
 amine + hydrogen halide
R-CI + NH₃ \longrightarrow R-NH₂

Example:

a) Reaction of Alkyl halide with Ammonia

$$H_3C$$
— CH_2 — CI NH_3 — CH_3 — CH_2 — N — H + HCI

b) Reaction of Alkyl Halide with a Primary Amine

$$H_3C-CH_2-NH_2 + H_3C-CH_2-CI - CH_3-CH_2-N-CH_2-CH_3 + HCI + H$$