

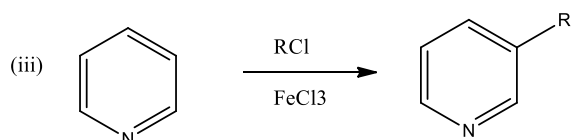
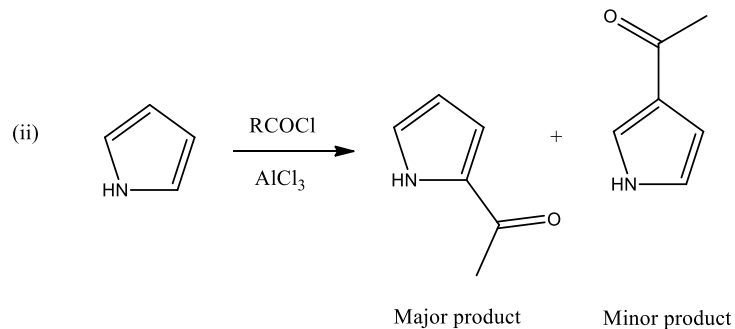
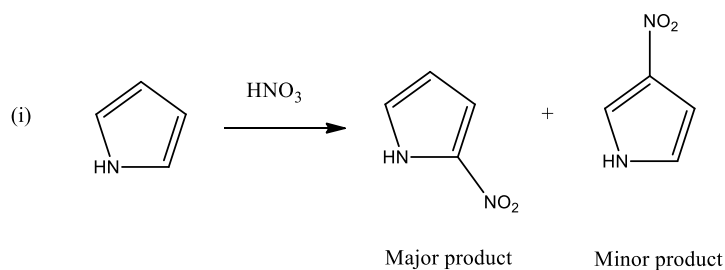
Answer on Question #52198 – Chemistry – Organic Chemistry

Question:

10. a) Compare the basicities of pyridine and pyrrole.
(2) b) Predict the major and minor products of the following reactions:
(3) i) Nitration ofazole ii) Friedel-Crafts acylation of pyrrole iii) Friedel-Crafts alkylation of pyridine
11. Complete the following reactions:
(5) i) CH_3MgX ii) $\text{H}^+/\text{H}_2\text{O}$ b) c) $\text{CH}_3\text{SCH}_3 + \text{H}_2\text{O}$ 298 K $\text{C}_6\text{H}_5\text{OHe}$ $\text{CH}_3\text{CH}_2\text{OC}_2\text{H}_5$ i) NaBH_4

Answer 10:

- a) Since the pyridine ring has 5 pi-electrons from carbons and 1 one from the nitrogen atom the electron pair on the nitrogen still has a capability to bind a proton. On the contrary, the pyrrole pi-system consists of 4 pi-electrons from carbons and 2 electrons belonged to the lone pair from the nitrogen atom. Therefore the capability to accept a proton is reduced. Thus, the pyrrole is the weaker base than pyridine.
- b) Alkylation and nitration of the azoles especially pyrrole occurs at the 2-position. Although some minor amount of the 3-substituted derivative also is formed. For pyridine, the nucleophilic substitution goes very hard and can only be at the 3-position (meta-derivative).



Answer 11:

