

ALCOHOLS PHENOLS & ETHERS ^{1.}

CHEMISTRY , CLASS-XII , UNIT-11

LECTURE-7 ,BY:-DR.RINKY ,06/10/2020

TOPIC:-PROPERTIES OF PHENOLS

PHYSICAL PROPERTIES OF PHENOLS

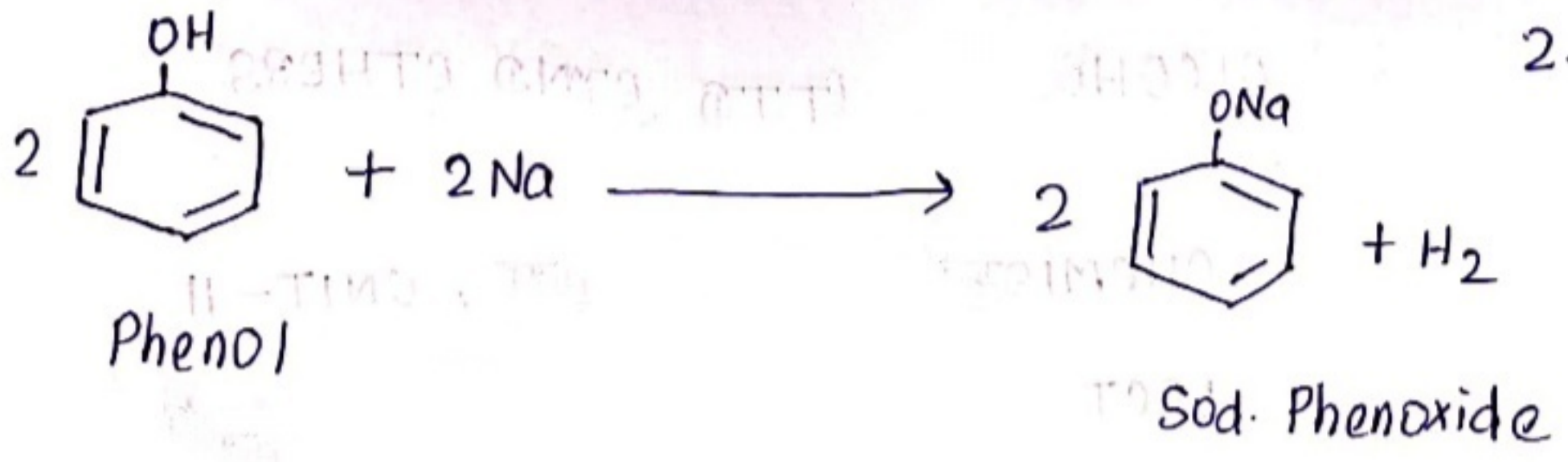
- * Phenol are colourless solids or liquids.
- * Phenols are sparingly soluble in water and have boiling point higher than corresponding alkenes.

CHEMICAL REACTIONS OF PHENOLS

1. Reaction Involving Cleavage Of Oxygen -hydrogen Bond :-

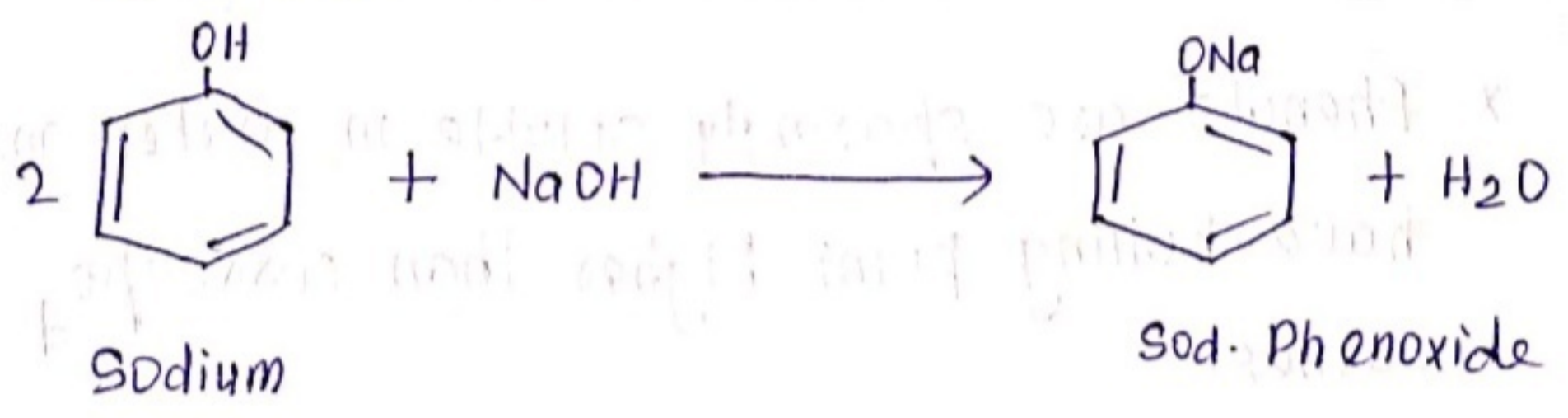
a) Reaction with sodium :-

Phenol reacts with active metals like sodium to liberate H_2 gas.



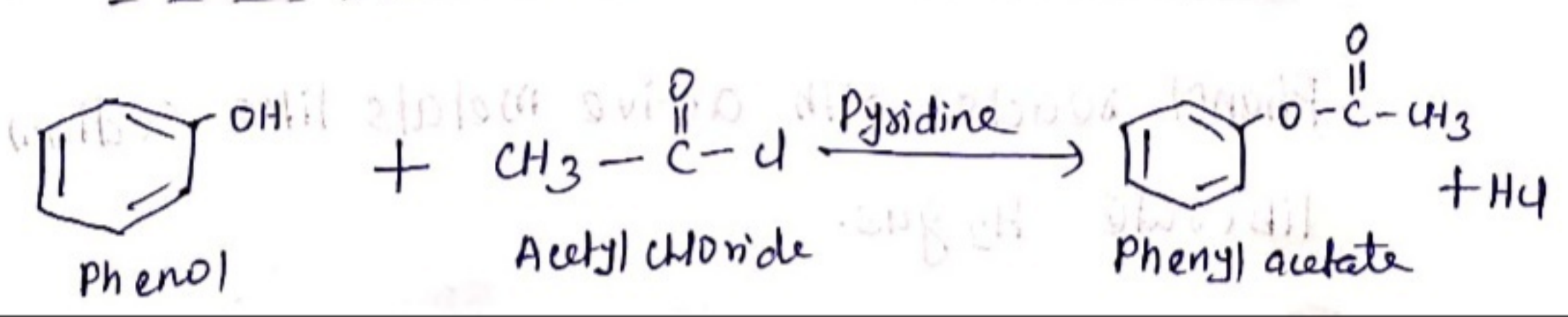
b) Reaction with NaOH

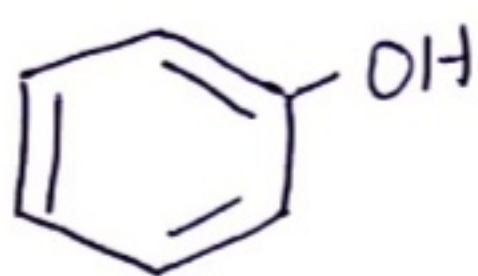
Phenol dissolves in NaOH to form sod. Phenoxide and water.



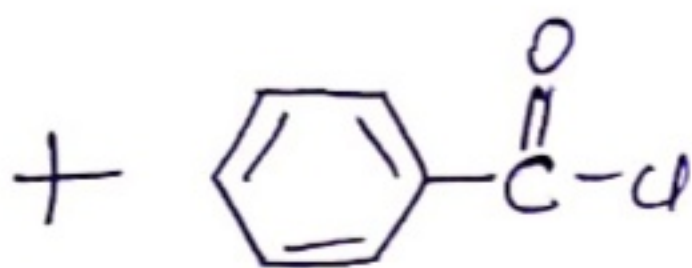
* Phenol is more acidic than ethanol. This is due to the reason that phenoxide ion left after the loss of a proton from phenol is stabilized by resonance while ethoxide ion (left after loss of a proton from ethanol) is not

c) Acylation and benzoylation

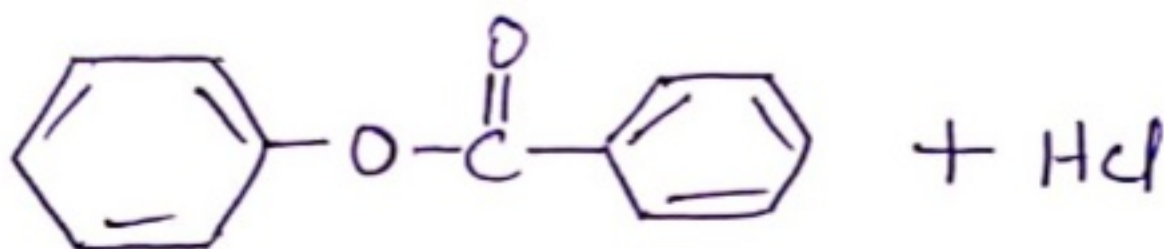
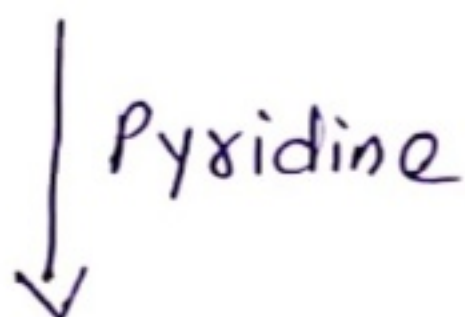




Phenol



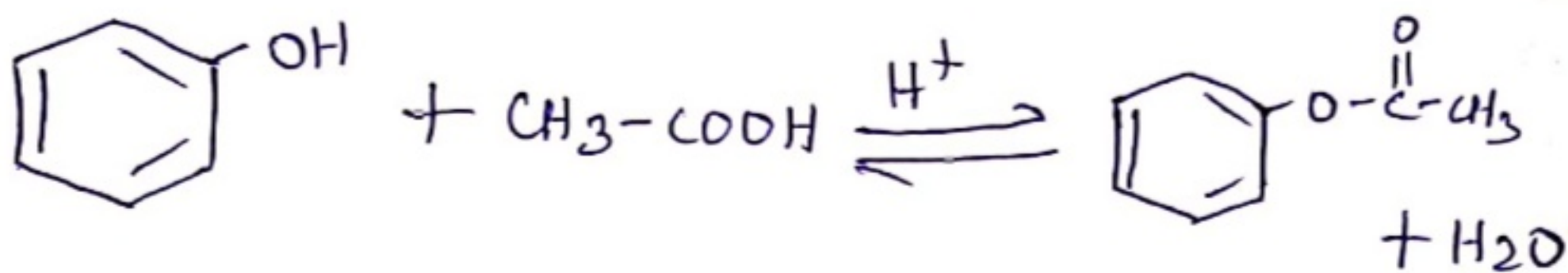
Benzoyl chloride



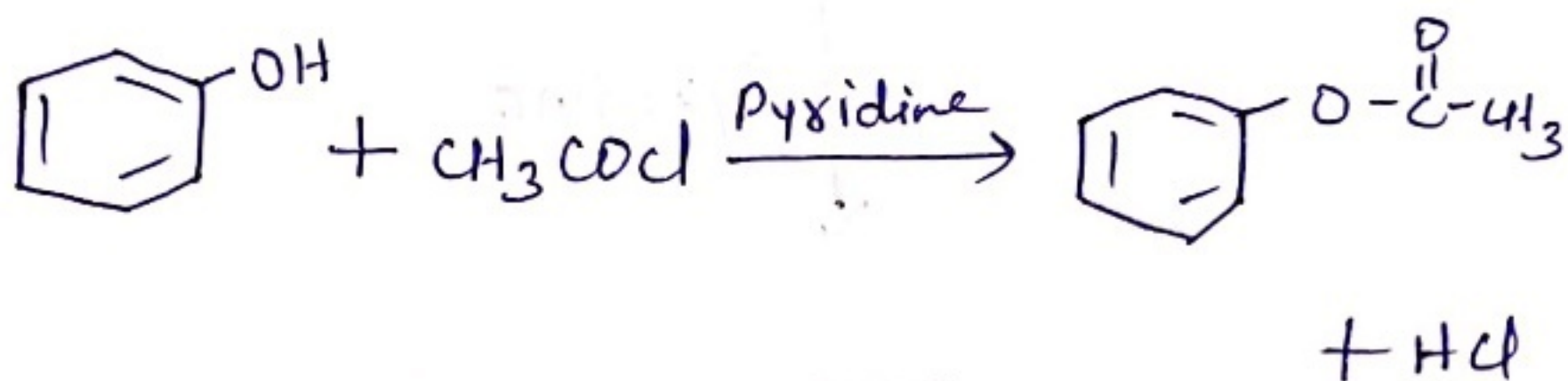
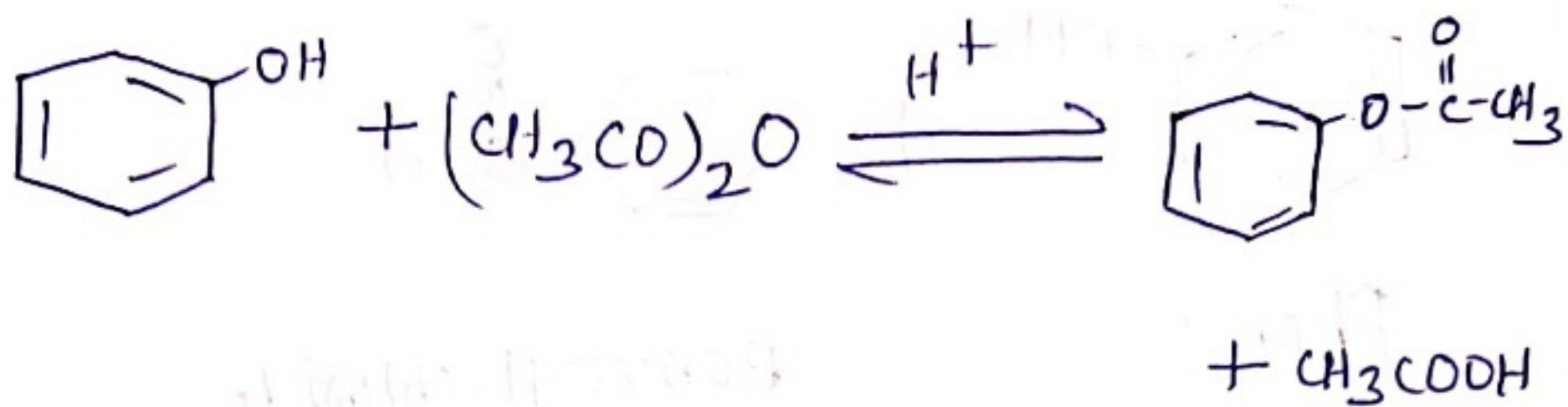
Phenyl benzoate

d) Estexification

Phenol react with carboxylic acid, acid chlorides and acid anhydrides to form esters.

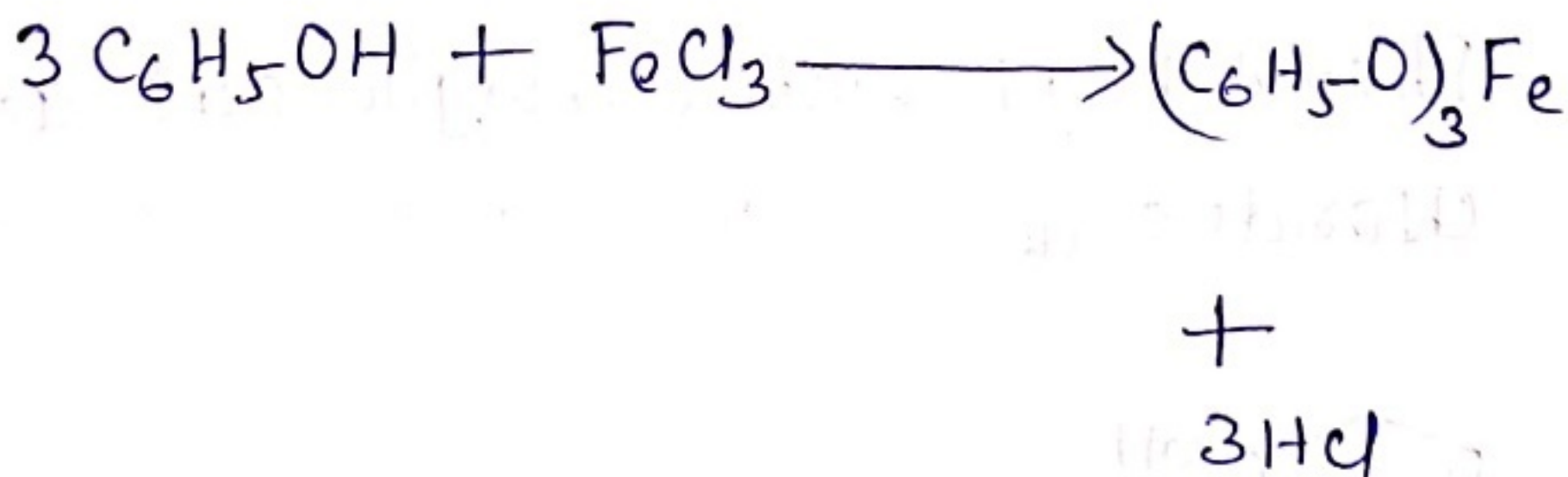


4.



e) Reaction with Neutral FeCl_3

(Test for phenol)



To be continued in next lecture..