

ALCOHOLS PHENOLS & ETHERS 1.

CHEMISTRY , CLASS-XII , UNIT-11

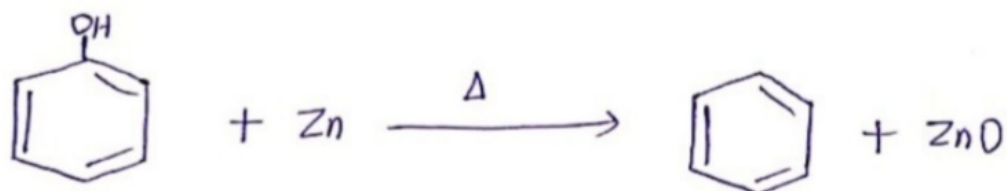
27/11/2020

TOPIC :- CHEMICAL REACTIONS OF

PHENOLS CONTINUES..

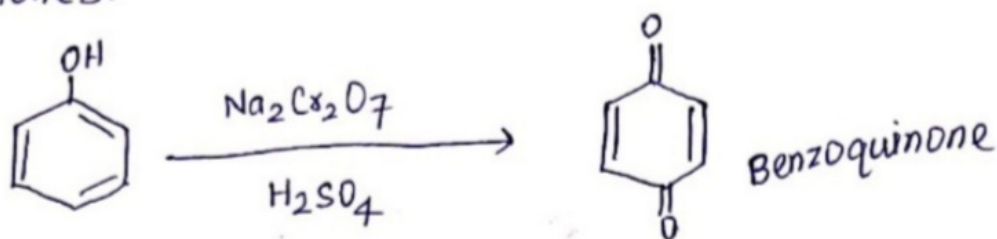
2. Reduction Reaction

* Reaction of Phenol with Zinc dust reduces it to benzene.



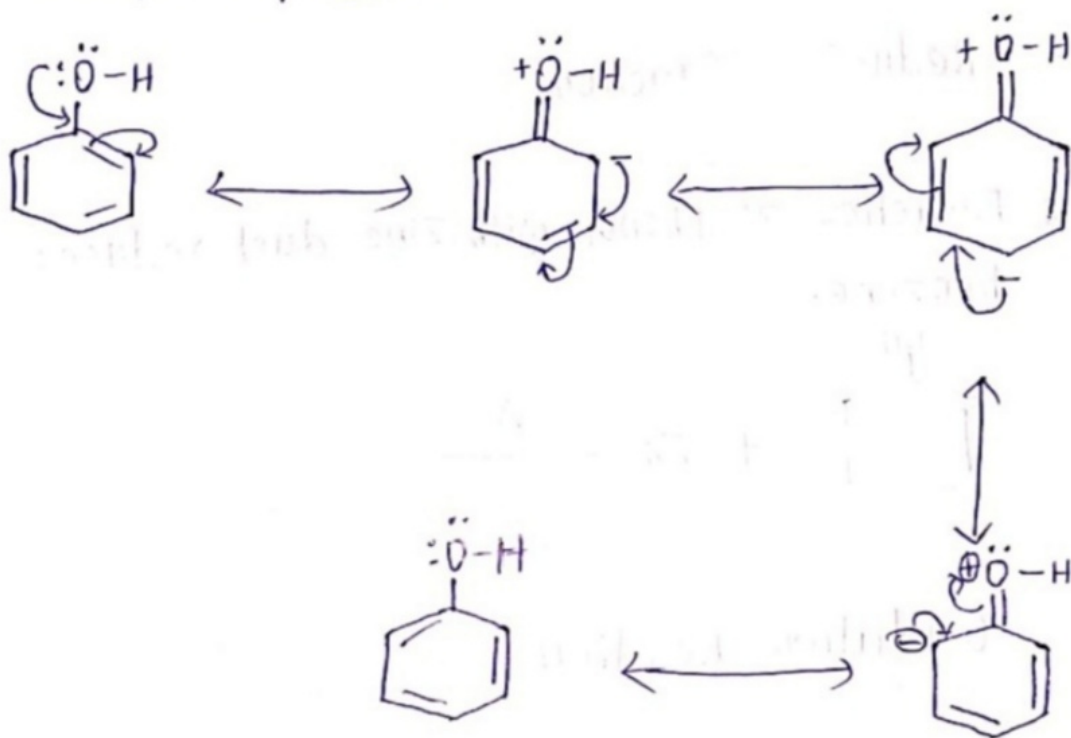
3. Oxidation Reaction

* Oxidation reaction of Phenol with chromic acid produces a conjugated diketone known as benzoquinone. In the presence of air, phenols are slowly oxidised to dark coloured mixtures containing quinones.



4. Electrophilic Substitution Reaction of Phenol

- * The OH group is a ring activating group and directs the incoming electrophilic group to ortho- and para- position.



Q Explain how does the -OH group attached to a carbon of benzene ring activate it towards electrophilic substitution?

Ans. Phenol may be regarded as a resonance hybrid of five resonating structures. As a result of +R effect of the OH group, the electron density

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in the benzene ring increases thereby facilitating the attack by an electrophile.

In other words, presence of OH group, activates the benzene ring towards electrophilic substitution reactions. Further since the electron density is relatively higher at the two O- and P- position, therefore, electrophilic substitution occurs mainly at O- and P- positions. //

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