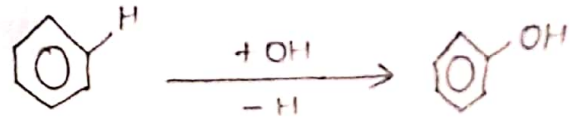
SUBJECT - CHEMISTRY
CLASS - BSc(Sub/Gen) PART-II
GROUP - C
TOPIC - PHENOLS

Dr Hari Mohan prasad Singh
Department of Chemistry
Dr. L.K.V.D College Tajpur Samastipur

Q What are phenols?

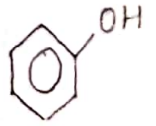
Ans Hydroxy derivatives of aromatic hydrocarbons in which -OH group is directly attached to the C-atom of the aromatic ring are called phenols -



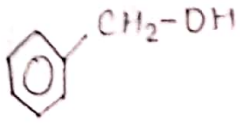
Benzene phenol

Q How do phenols differ from aromatic alcohols?

Ans In phenols. the OH-group is directly attached to the C-atom of the aromatic ring while in aromatic alcohols, the OH group is present in the Side chain -



phenol



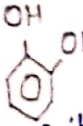
phenylmethanol
(aromatic alcohol)

Aromatic alcohols resemble aliphatic alcohols in its properties.

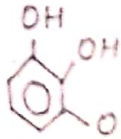
Q How phenols are classified?

Ans phenols are classified like alcohols as mono-di-tri or polyhydric of their molecules have one, two, three or many OH groups respectively -

phenol
(monohydric



1 2-Dihydroxy benzene
(dihydric)

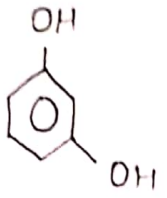


1 2 3-Trihydroxy benzene trihydric

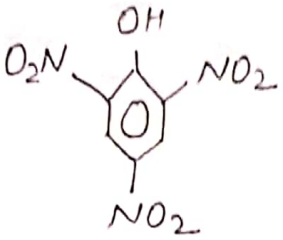
Q Discuss the IUPAC nomenclature of phenol.

Ans All substituted phenols are named as derivatives of phenols. The position of substituents with respect to -OH group is shown by Arabic numerals with the carbon having -OH group being numbered as -

4-Nitrophenol



1,3-Dihyoroxy benzene



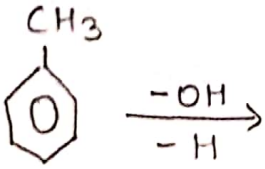
2,4,6 Trinitrophenol

As carbonyl or allyl group is senior to phenolic -OH group, so in such cases -OH group is named as hydroxy and is taken as a substituent -

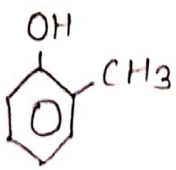
4-Hydroxy benzoic acid

Q What are cresols?

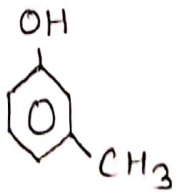
Ans Cresols are hydroxy derivatives of toluene -



Toluene



o-cresol
(2-Methyl phenol)



m-cresol
(3-Methylphenol

p-cresol
(4-Methyl phenol)