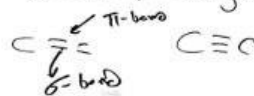
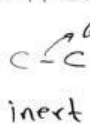


Exp. # 8

Functional group I

alkanes, alkenes, alkynes and Aromatic

Functional group:



alkenes and alkynes are more reactive than alkanes.

because they have active functional groups.

Thus alkanes can be considered as inert compounds

Thus these reactions are limited and occur under harsh conditions.

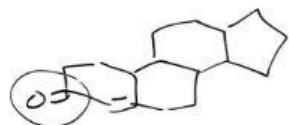
Reaction of alkanes.

1) Halogenation.



Substitution reaction.

2) Combustion rxn.



Exp. # 8

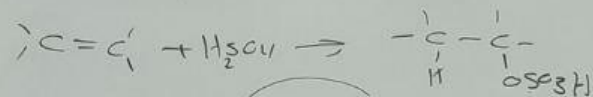
Functional group I

alkanes, alkenes, alkynes and Aromatic

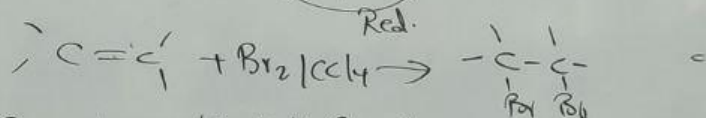
alkenes:

Chemical tests related to alkenes:

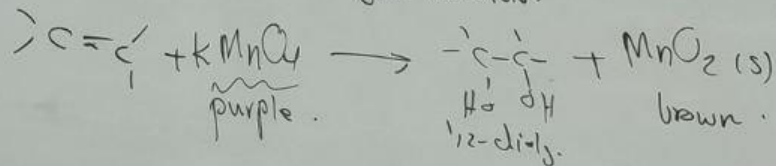
1- Reaction with conc. H_2SO_4 .



2- Reaction with Br_2/CCl_4 .



3) Reaction with $KMnO_4$ to give 1,2-diols.



CHCl₃

Exp. # 8

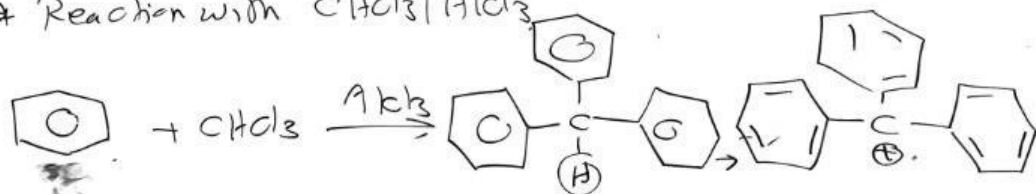
Functional group I

alkanes, alkenes, alkynes and Aromatic

Aromatic

chemical test

≠ Reaction with CHCl₃/AlCl₃



Benzene → orange-to-red color.


naphthalene → Blue.


Biphenyl and


phenanthrene → purple.

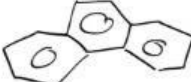
anthracene → green.

Carbocation.
Highly stable.
Colored ion.

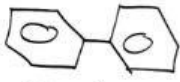
Aromatic.  Benzene

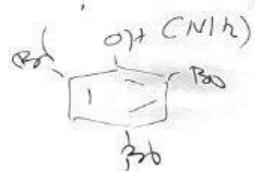
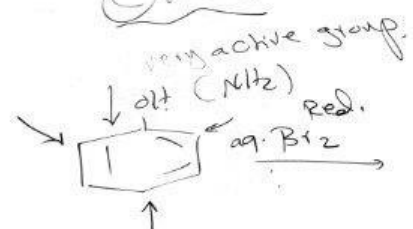
 naphthalene.

 anthracene.



phenanthrene

 Biphenyl.



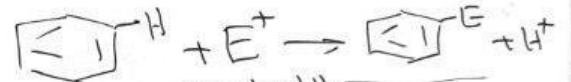
Exp. # 8

Functional group I

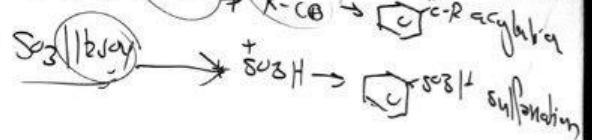
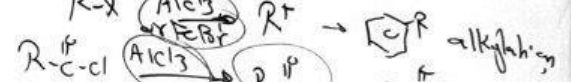
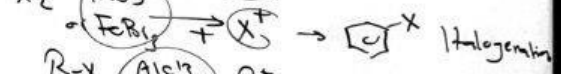
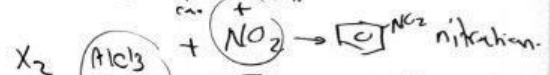
alkanes, alkenes, alkynes and Aromatic

* Bromination

electrophilic Aromatic Substitution reaction



electrophile.
 Aromatic Hydrocarbon.



	cyclohexane	cyclohexene	Toluene	chlorobenzene
H ₂ SO ₄	N.R	Color cpd Yellow-orange.	N.R	N.R
Br ₂ / CCl ₄ (red)	N.R (color red)	Colorless red color disappear	N.R	N.R
KMnO ₄ purple	N.R (purple)	Black to Brown ppt MnO ₂	color red	N.R color red
Combustion	less sooty		N.R (purple)	N.R purple
				more sooty