



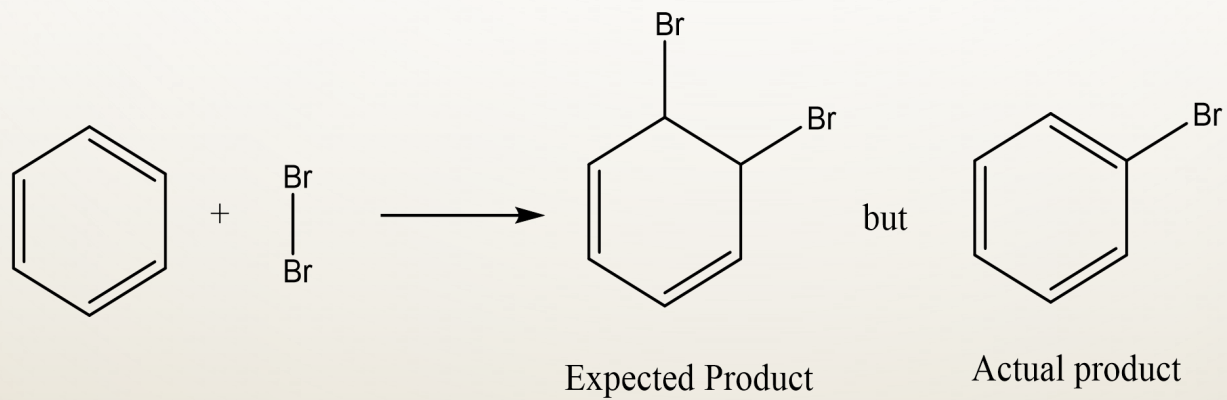
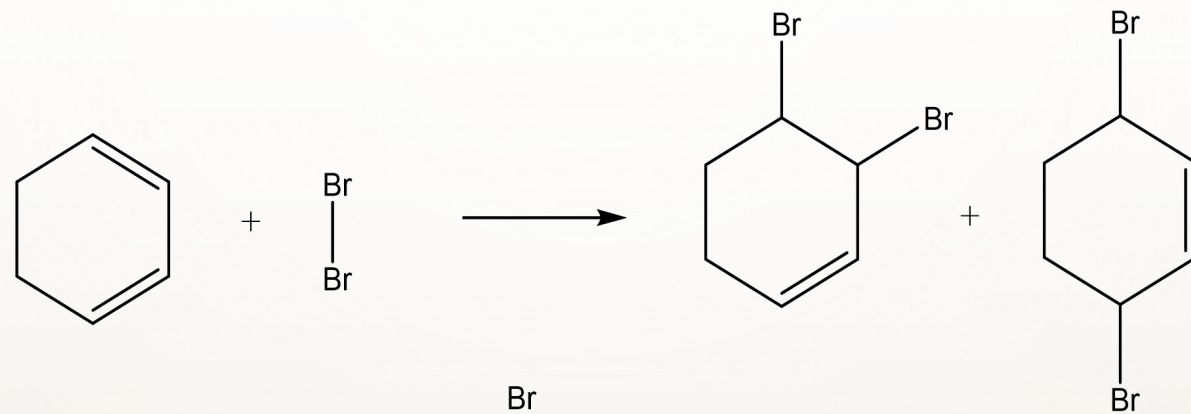
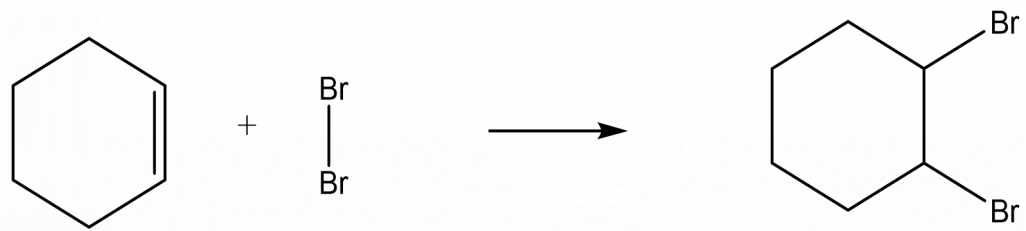
॥ ज्ञानम् परम् ध्येयम् ॥

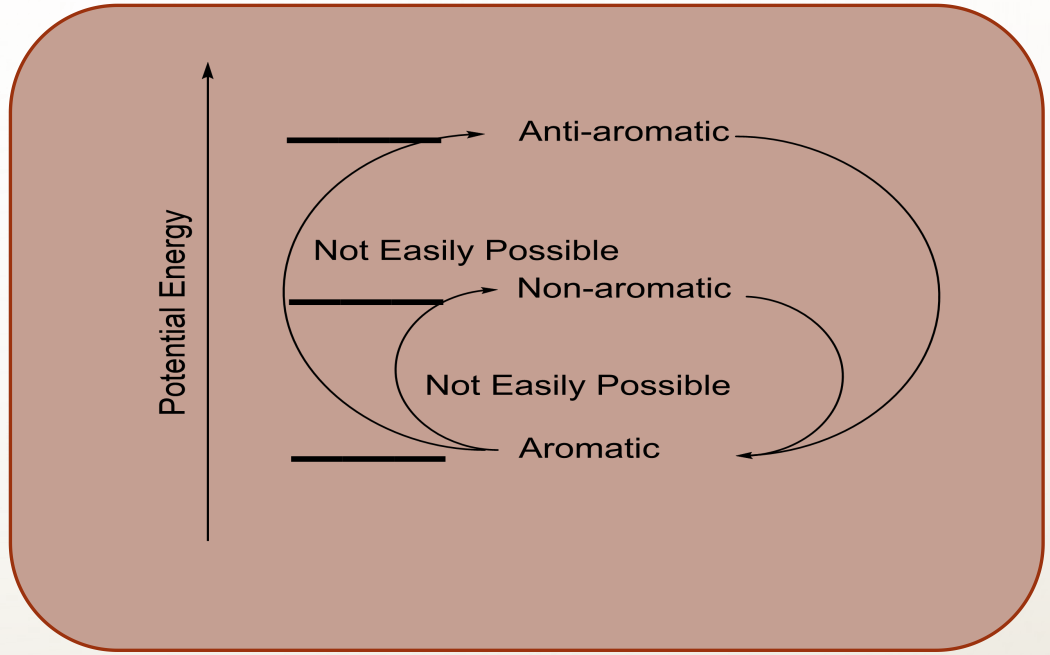
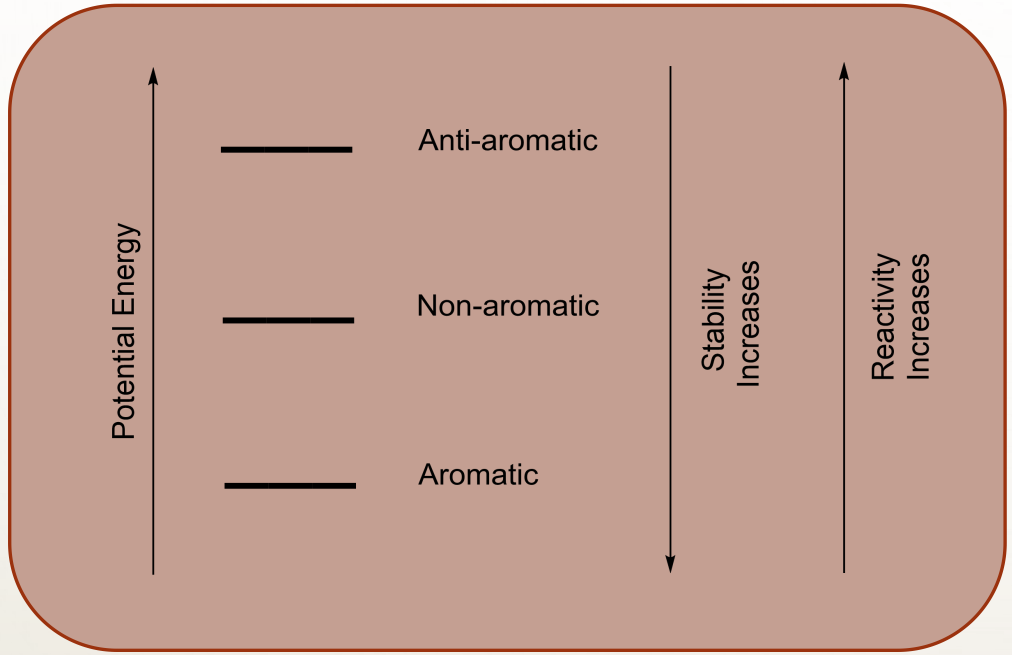
SHRI SHIVAJI ARTS AND SCIENCE COLLEGE, CHIKHLI



Swapnilkumar Subhashrao Kale
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Department of Chemistry
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Chikhli

TOPIC : AROMATICITY





Aromatic compounds

- Cyclic
- Planar
- Extended conjugation
- $(4n+2)\pi$ electrons
 $n=0,1,2,3,\dots$

Anti-Aromatic compounds

- Cyclic
- Planar
- Extended conjugation
- $(4n)\pi$ electrons

Non-Aromatic compounds

- Cyclic
 - Planar
 - Extended conjugation
 - $(4n+2)\pi$ electrons
- Any of these 3 criteria is not fulfilled.

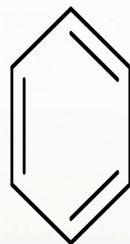
Aromatic Compounds

1) Cyclic :



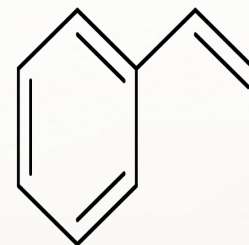
Acyclic

Non-cyclic



Cyclic

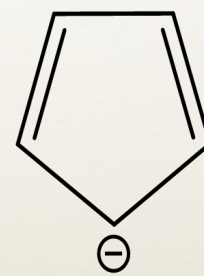
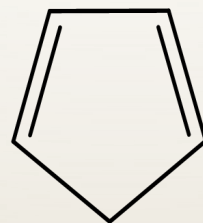
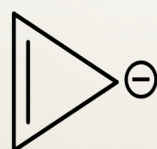
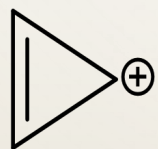
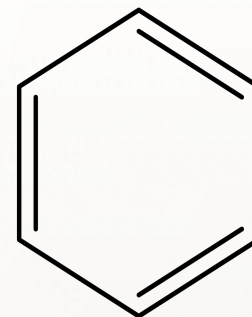
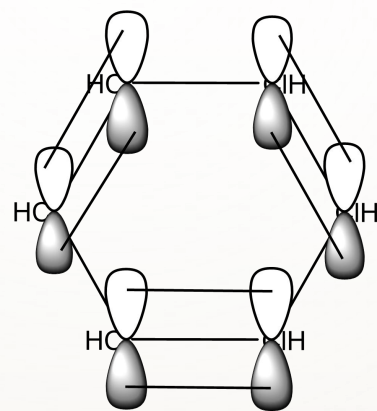
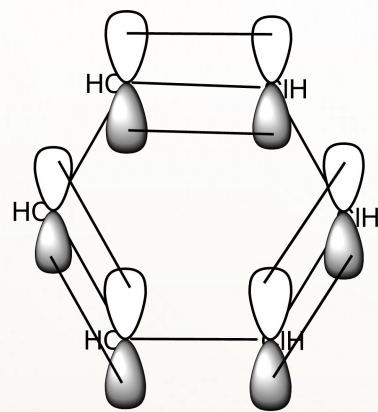
Aromatic



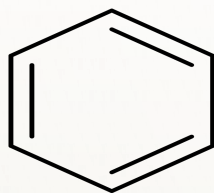
Cyclic

Aromatic

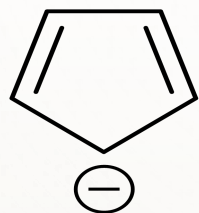
2) Planarity :



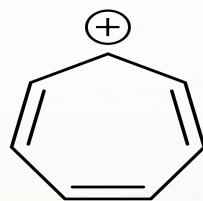
3) Number of π electrons :



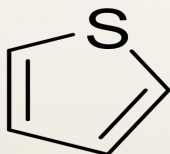
$4n+2=6\pi$ electrons



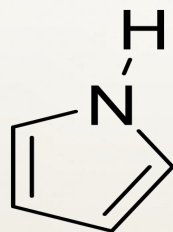
$4n+2=6\pi$ electrons



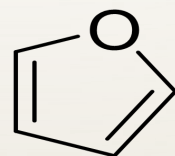
$4n+2=6\pi$ electrons



$4n+2=6\pi$ electrons

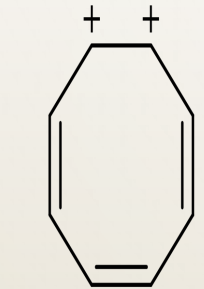
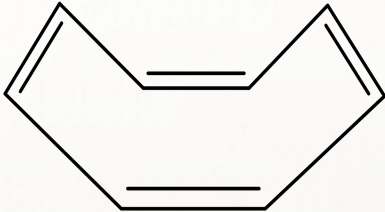
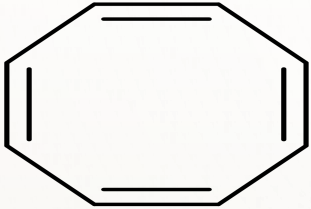


$4n+2=6\pi$ electrons

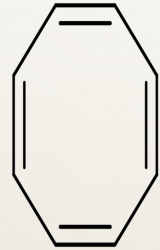
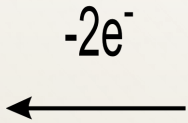


$4n+2=6\pi$ electrons

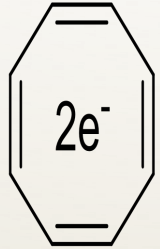
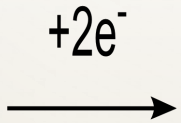
Annulenes:



$4n+2=6\pi$
Electrons

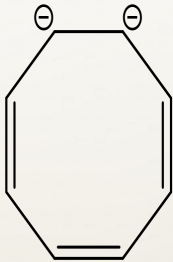


Non-aromatic

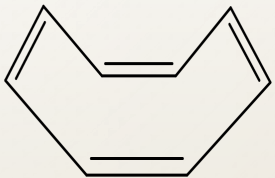
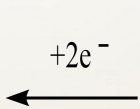


$4n+2=10\pi$
Electrons

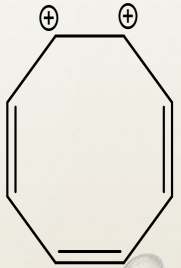
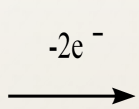
OR



$4n+2=6\pi$
Electrons



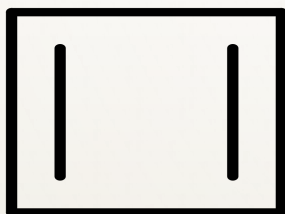
Non-aromatic



$4n+2=10\pi$
Electrons

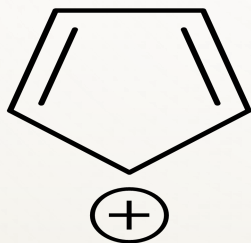
Anti-aromatic compounds

- 1) Cyclic
- 2) Planar
- 3) Extended conjugation
- 4) $4n \pi$ electron rule



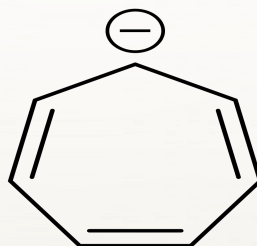
Cyclic
Planar
Extended conjugation

4π electrons present



Cyclic
Planar
Extended conjugation

4π electrons present



Cyclic
Planar
Extended conjugation

8π electrons present

THANK
YOU

