# CHAPTER OVERVIEW

## 17: AROMATIC COMPOUNDS

LEARNING OBJECTIVES

After reading this chapter and completing ALL the exercises, a student can be able to

- summarize the discovery of the structure of benzene (refer to section 17.1)
- predict the physical properties of aromatic compounds using IMFs (refer to section 17.2)
- apply resonance and MO Theory to the structure of benzene (refer to section 17.3)
- apply MO Theory to cyclobutadiene (refer to section 17.4)
- apply resonance to aromatic compounds and ions (refer to sections 17.5 and 17.6)
- use Hückel's rule to predict whether a given cyclic compound or ion is aromatic, antiaromatic or nonaromatic (refer to sections 17.5 and 17.6)
- for heterocycles, determine whether the lone pairs of the heteroatoms occupy p orbitals or $sp^2$ orbitals (refer to sections 17.5 and 17.7)
- for heterocyclic amines, and predict whether the nitrogen atom is weakly or strongly basic (refer to sections 17.5 and 17.7)
- use Huckel's Rule to prdict whether polycyclic aromatic hydrocarbons are aromatic (refer to setions 17.5 and 17.8)
- use IR, NMR, UV and mass spectra to determine the structures of aromatic compounds (refer to section 17.9)
- given an aromatic compound, predict the important features of its spectra (refer to section 17.9)

Please note: IUPAC nomenclature and important common names of alcohols were explained in Chapter 3.

**Topic hierarchy**



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