

AROMATIC COMPOUNDS

(Lecture-2)

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Degree-II (Hons.)
Paper - IV
Group - 'B'
Chapter- 6

Topic - BENZENE

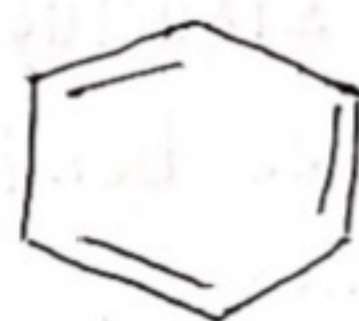
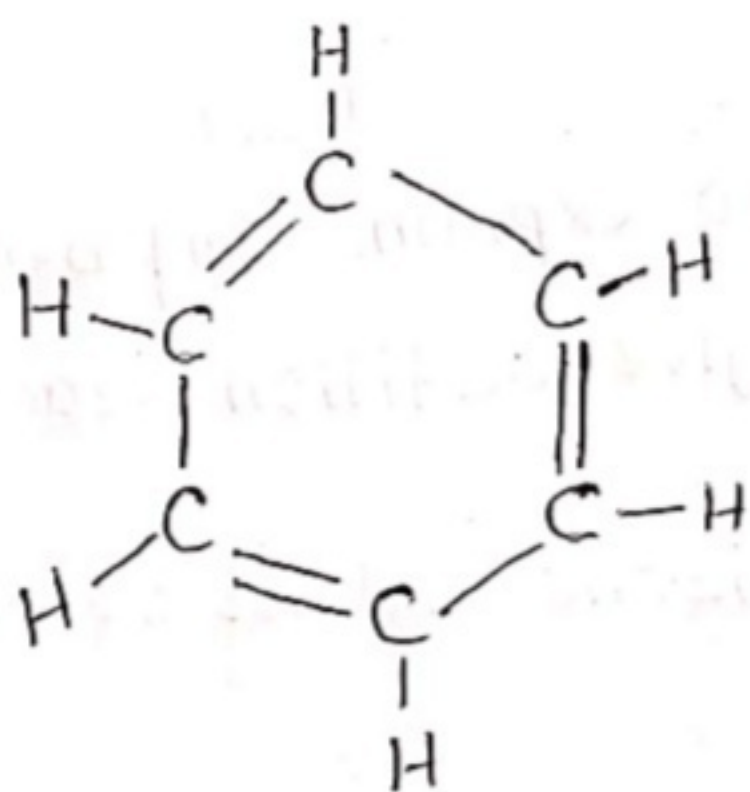
* Elemental analysis and molecular weight determination showed that benzene had the molecular formula C_6H_6 .

Kekule's Structure Of Benzene

* In 1865, "August Kekule" suggested that benzene consisted of a cyclic planar structure of six carbons with alternate double and single bonds.

To each carbon was attached one H.

* According to this proposal Benzene was simple, 1,3,5-cyclohexatriene.



usually written as

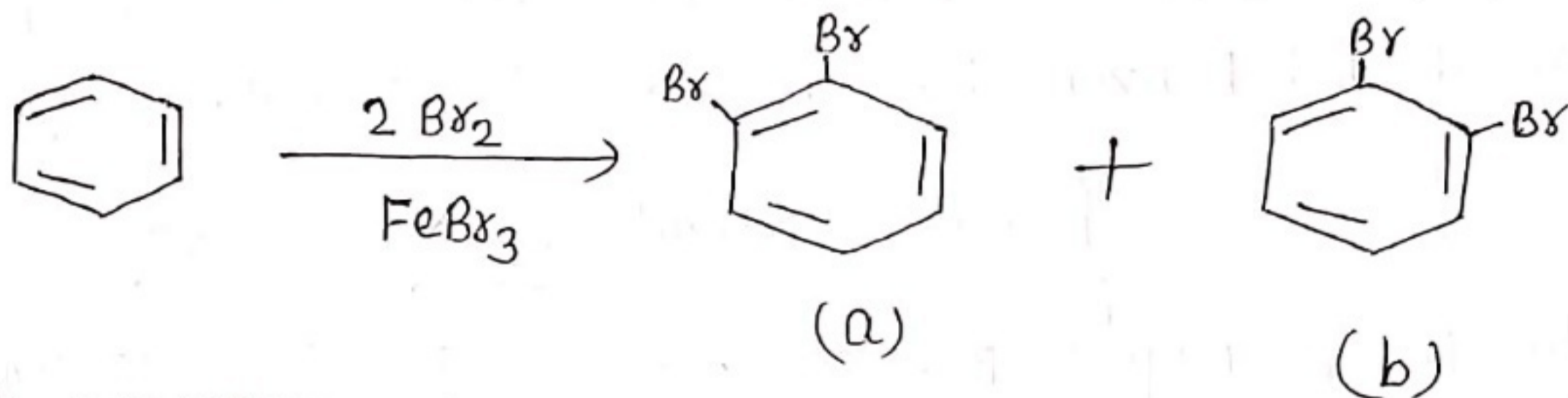
* There were two objections:

1. If the Kekule's structure was correct, there should exist two ortho isomers of dibromobenzene.

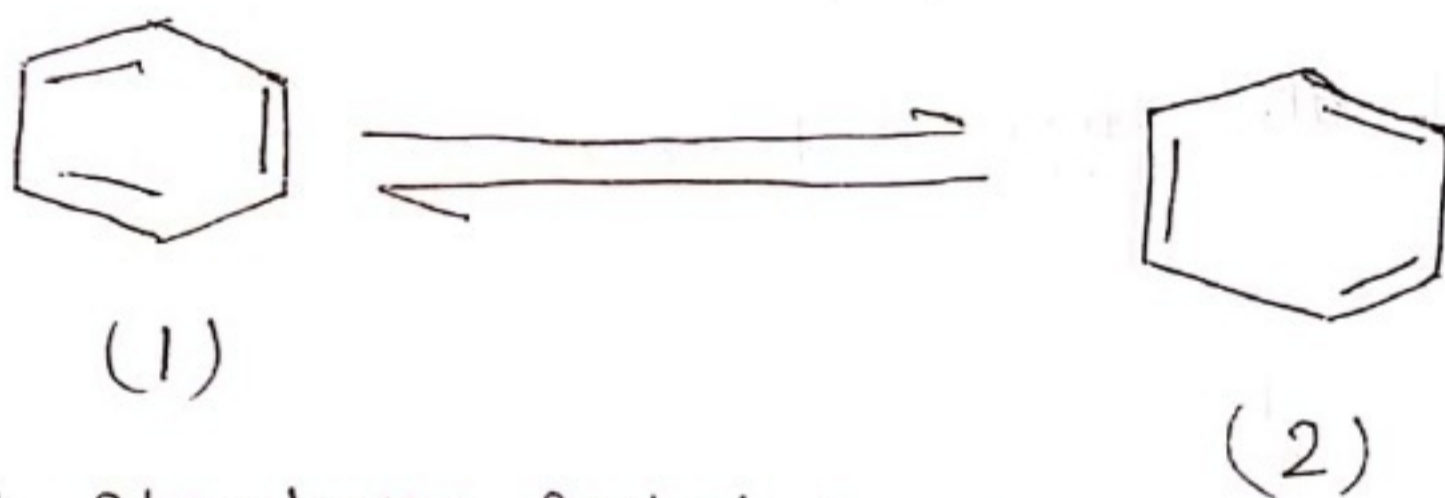
In one isomer, the two bromine atoms should be on carbon that are connected by a double bond, as shown in structure (a).

In the other isomer the bromines should be on one carbon connected by a single bond, as shown in structure (b).

In fact, only one ortho-dibromobenzene could be prepared.



To overcome this objection, Kekule further suggested that benzene was a mixture of two forms (1 and 2) in rapid equilibrium.



2. Kekule's structures failed to explain why benzene with three double bonds did not give addition reactions like other alkenes.

For example, benzene did not react with HBr or Br₂ in CCl₄.

Kekule Structure Completed.

OCCURENCE

Till about 1950, the chief source of benzene and other aromatic compounds was coal. With the development of the petroleum industry, this source is no longer that important.

* In the past sixty years, the demand for aromatic compounds has far outstripped the amount available from coal tar.

* Consequently, Petroleum has now become a major source of AROMATICS.

== OCCURENCE COMPLETED

16-04-2020

Note

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Next to it, (Some topic) Chemistry
Subsidiary students also have to
study, which will be mentioned in
the notes..

Chapter continued....