

BONDING & GENERAL CONCEPTS ^{1.}

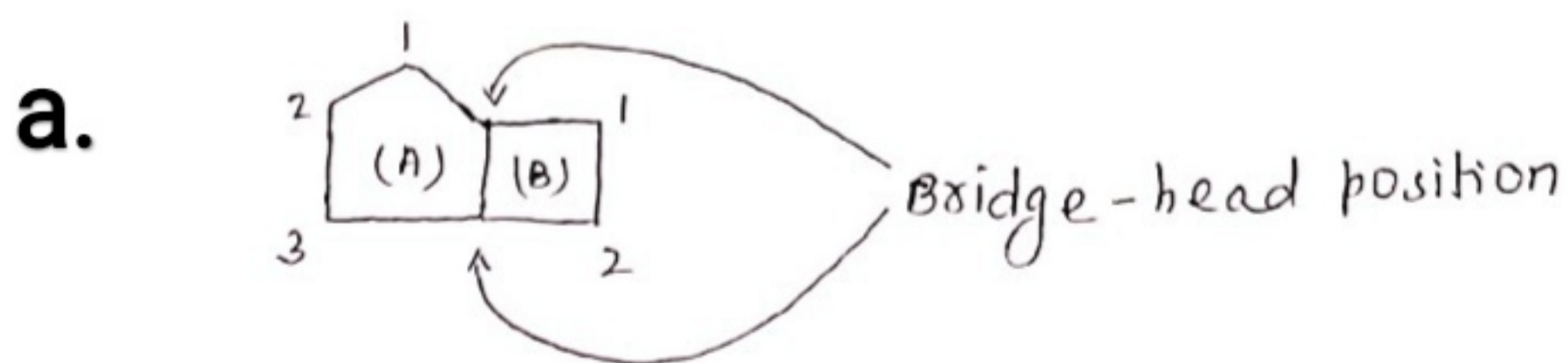
DEG-I (H), P-II, CH-1, GROUP-B

LECTURE-5, SESSION 2020-23, 08/12/2020

NOMENCLATURE OF BICYCLO COMPOUNDS

- * Compounds with two fused cycloalkane rings are called bicyclo compounds.
- * They are cyclo alkanes having two or more atoms in common.
- * The prefix bicyclo is followed by the name of the alkane whose number of 'C' atoms is equal to the number of 'C' atoms in the two rings.
- * The bracketed numbers show the number of 'C' atoms (except bridge-head position 'C'-atoms) in each bridge and they are cited in decreasing order.

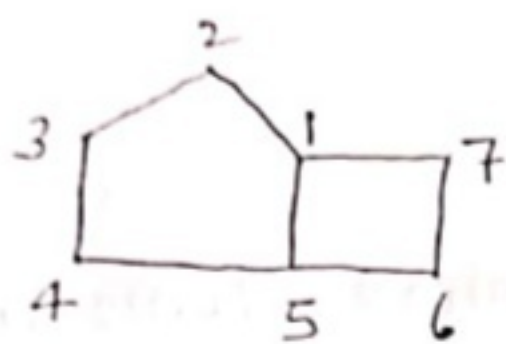
For example



- i) Number of 'C' atoms in ring A = 3

- (ii) Number of 'c' atoms in ring B = 2
- (iii) Number of 'c' atoms between bridge-head position = 0
- (iv) Total 'c' atom = 3 (in ring A) + 2 (in ring B) + 2 (bridge-head position) = 7

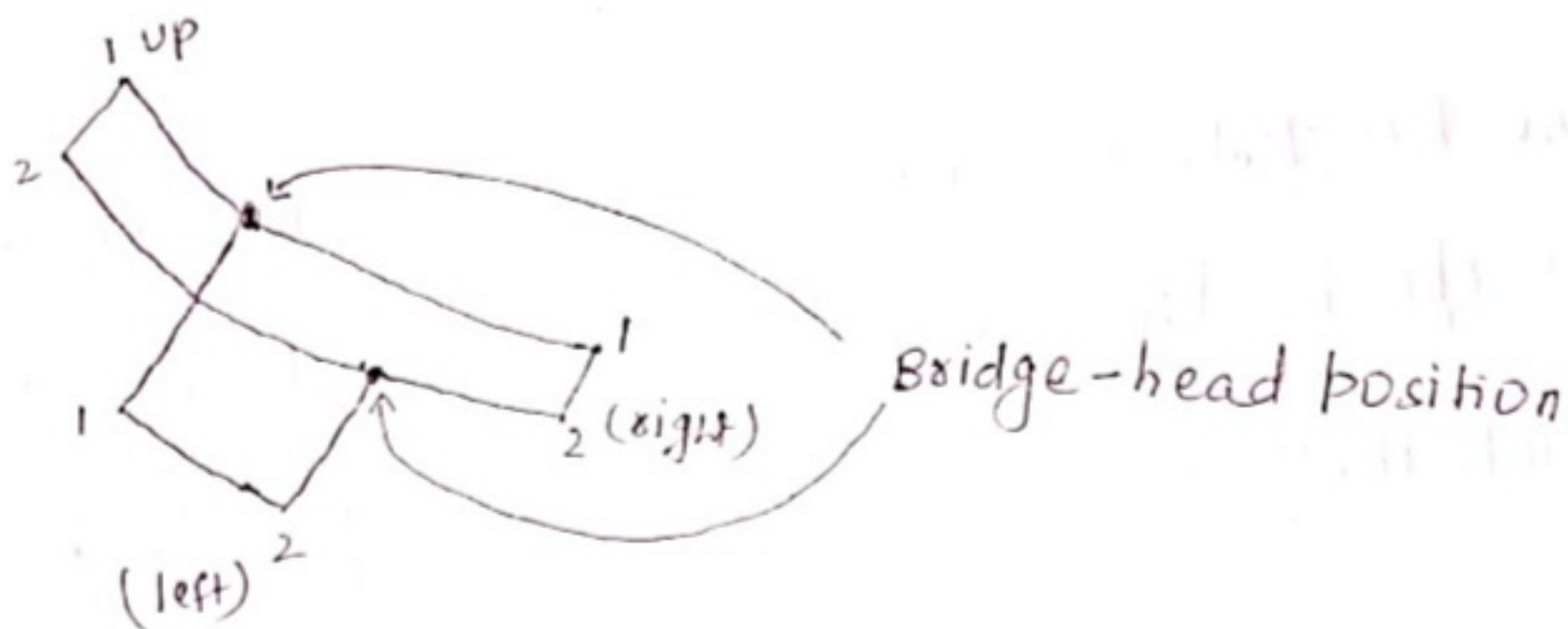
Numbering in accordance with naming the compound



* Numbering starts from the bridge-head to the larger ring and then back to the smaller ring.

IUPAC name: Bicyclo [3.2.0] heptane

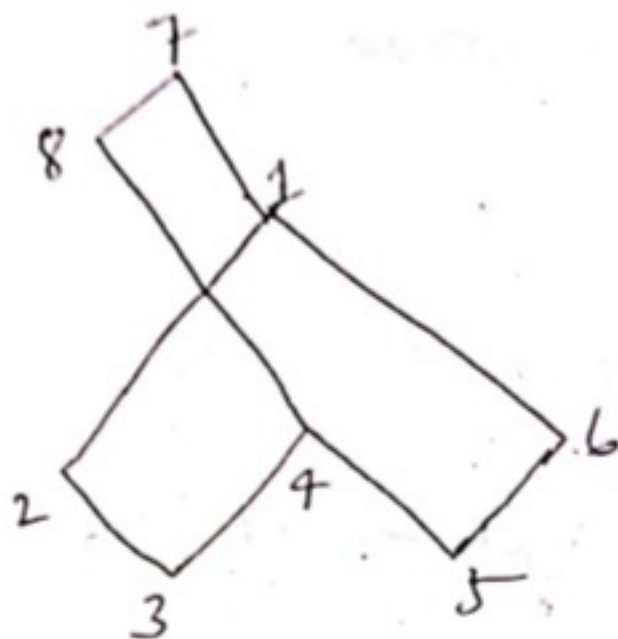
b)



- (i) Number of 'c'-atoms to the left of the bridge-head = 2
- (ii) Number of 'c'-atoms to the right of the bridge head = 2
- (iii) Number of 'c' atoms to the up position of bridge head = 2
- ∴ Total 'c' - atoms = 2 + 2 + 2 + 2 (bridge-head position) = 8

3.

Numbering in accordance with naming of compound:



IUPAC name:

Bicyclo [2.2.2] octane

To be continued in next lecture..

By-Dr.Rinky
Dept.of Chemistry