

BONDING & GENERAL CONCEPTS

1.

D-I (H) ,P-II ,GROUP-B ,CHAPTER-1

LECTURE-10 , 21 DECEMBER 2020

SESSION 2020-23

Bond Length

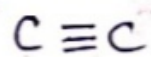
When two atoms are bonded by a covalent bond, the distance between the centres of the two nuclei is called bond length.

The unit of bond length is Angstrom (\AA).

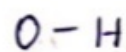
$$(1 \text{\AA} = 10^{-8} \text{ cm})$$

Some Typical Bond Lengths

Bond	Bond length (\AA)
C-H	1.09
C-C	1.54
C=C	1.34



1.20



0.96



1.02 etc.

Bond Energies

Bond energy or Bond strength is defined as the amount of energy required to break a bond in a molecule.

The unit of bond energy is K.cal/mole.

$$\text{Bond energy} \propto \frac{1}{\text{Bond Length}}$$

Some Typical Bond Energies are as follow :-

Bond	Bond energy (K.cal/mole)
$C-H$	99
$C-C$	83
$C=C$	146
$C \equiv C$	200
$O-H$	111 etc...

**Continued
in next lecture**