

## 1.2 Naming and Bonding of C chains

We will be working extensively with chains of one to ten C atoms and you should learn their names:

Number of C atoms	Name
1	Methane
2	Ethane
3	Propane
4	Butane
5	Pentane
6	Hexane
7	Heptane
8	Octane
9	Nonane
10	Decane

A couple of mnemonics developed by chemistry students may help you remember the order:

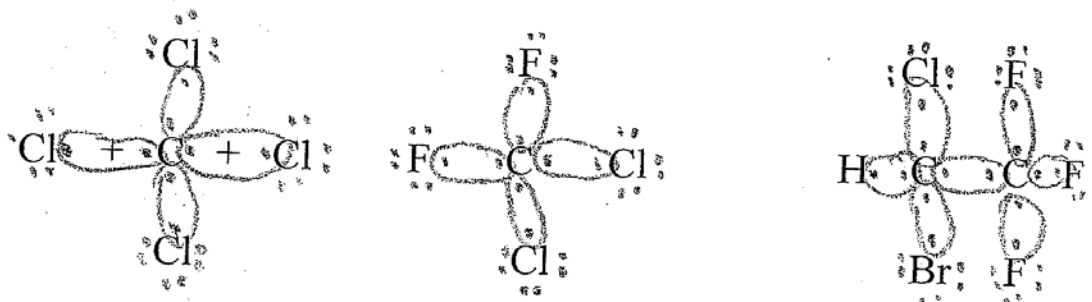
My Energetic Playful Beluga (whale) Pounces Hecka High on November Days.

or

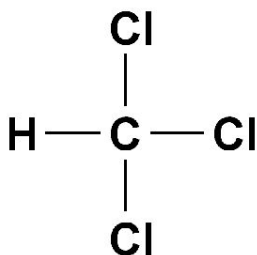
Many Elephants Pop Barbiturates Producing Hellish Headaches On (the) Next Day.

Carbon bonds to other atoms besides H. The halogens (F, Cl, Br, I) all have 7 electrons in their outer shell and form a single bond with C. They can substitute for H. For example:

Carbon tetrachloride	Freon 12	Halothane
$\text{CCl}_4$	$\text{CF}_2\text{Cl}_2$	$\text{C}_2\text{HClBrF}_3$



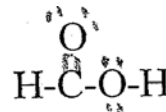
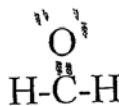
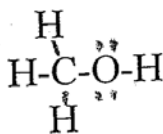
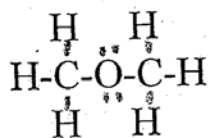
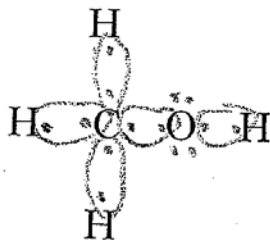
$\text{CHCl}_3$



Common inhalation anesthetic until WWII

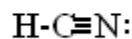
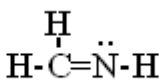
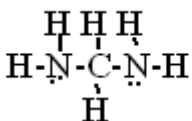
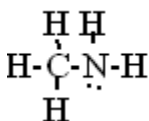
What sort of bonds (covalent, polar covalent, or ionic) are found in the above molecules?

C atoms commonly bond to O atoms. A C atom needs a total of 4 bonds and O atom needs 2 bonds. For example:



What type of bond is the C-H bond? O-H bond? C-O bond?

C atoms can also bond to N atoms. N atom is in Group V, has 3 unpaired electrons, and needs 3 bonds to obtain its full outer shell.



What type of bond (covalent, polar covalent, ionic) is the N-H bond? the C-N bond? Which of the 2 types of bonds is *more* polar?