Class 10 –

Lewis Structures

H He

Li Be B C N O F Ne

Na Mg Al Si P S Cl Ar

K Ca

Using the algorithm

**Lewis Structures Helpful Hints**

**Lewis Diagram 5 Steps:**

1 Add up the valence electrons (example CO2)

C = 4 electrons x 1 atom = 4 valence electrons

O = 6 electrons x 2 atoms = 12 valence electrons

Total = 16 valence electrons

2 If there’s only one atom, generally that’s the central atom. Carbon, in CO2

3 Put single bonds between the atoms O – C – O

4 Add the remaining electrons as lone pairs

5 Make lone pairs into double or triple bonds if you need to

**Single / Double / Triple Bonds**

H : H is the same as H – H (single bond, 2 electrons)

O :: O is the same as O = O (double bond, 4 electrons)

N : : : N is the same as N ≡ N (triple bond, 6 electrons)

**When covalent bonds occur, generally atoms share valence electrons to get to a**

Duet (Two for Hydrogen)

Octet (Eight for most others)

**and if they electrons get shared, both atoms get to count them as their own.**

**Exceptions**

*Beryllium - 4 valence electrons*

*Boron / Aluminum – 6 valence electrons*

*Sulfur – 8 valence electrons / 12 with SF6*

If you're using a cellphone you gotta click on the hamburger in the top right, the three stacked white lines in the black box to get to the menu where there's a "Free Books" link to a book with a coffee cup and spiral notebook on the cover, my APPE student forwarded me an email and said it's basically an 18 hour NAPLEX review, I think the guy teaches pharmacology but free is free, so whatever, here's the link, good luck

https://www.residencyhelp.com/