

Chapter 10 sample questions (also study the definitions from your study guide:

1) which of the following represents the Lewis structure for oxygen?

- a) O^{2-}
- b) $[O]^{2-}$
- c) $\cdot\ddot{O}\cdot$
- d) $\cdot\ddot{O}:$

2) which Lewis structure is correct?

- a) $\cdot Li \cdot$
- b) $\cdot Be \cdot$
- c) $\cdot\ddot{C}:$
- d) $:\ddot{Ne}:$

3) write the dot structure of helium. Does octet rule apply to it?

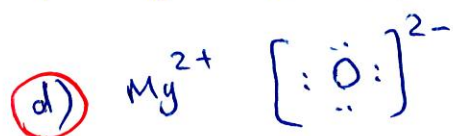
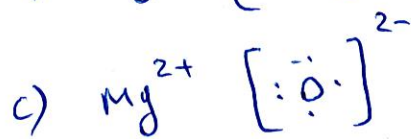
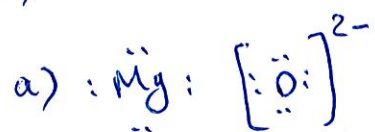
- a) $He \cdot$, Yes
- b) $He:$, No
- c) He , Yes
- d) $\cdot He$, No

4) which dot structure is not correct?

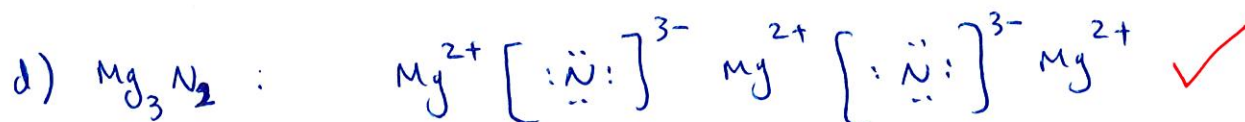
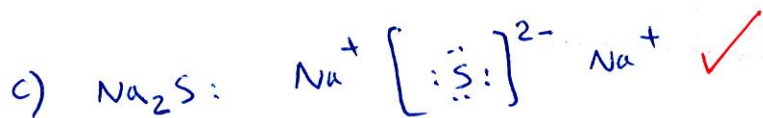


d) All the above dot structures are correct

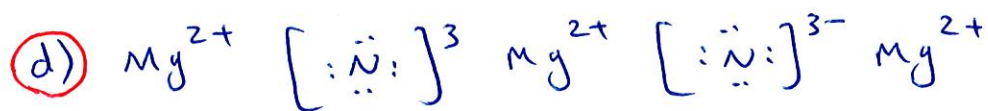
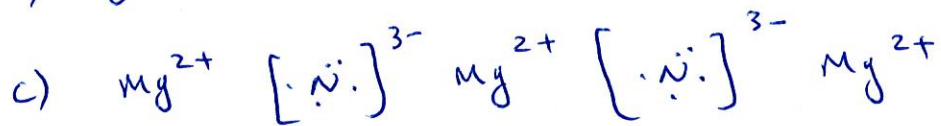
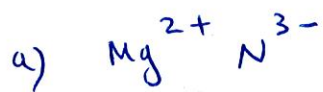
5) Write the Lewis structure of the compound MgO:



6) which Lewis structure is not correct?



7) Write the Lewis structure for Mg_3N_2 ?



8) What type of chemical bond water molecules have?

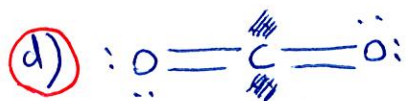
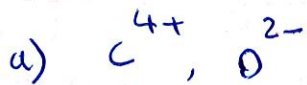
a) Double bond

b) Triple bond

c) Ionic bond

d) Covalent bond

9) Write the Lewis structure for CO_2 :

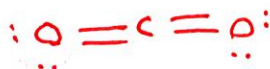


The Lewis structure for

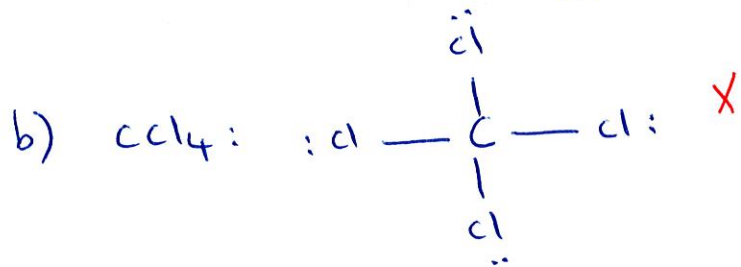
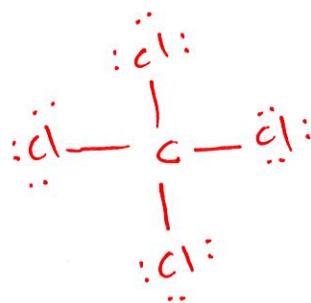
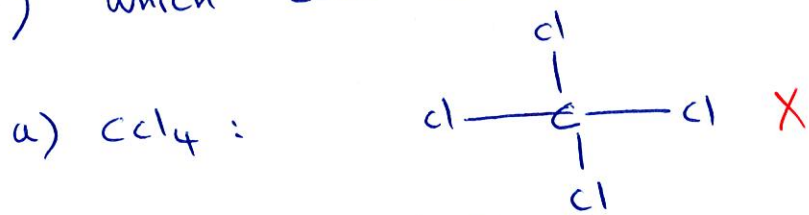
CO_2 is:



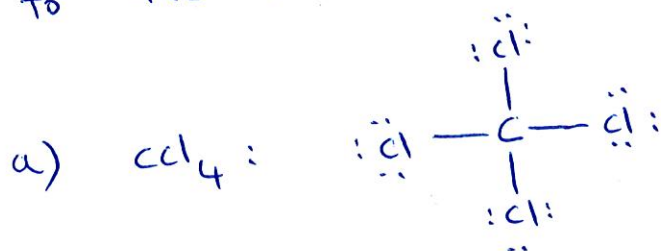
or



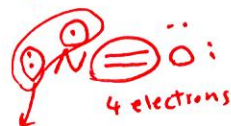
10) Which Lewis structure is correct?



11) Which of the following structure is an exception to the octet Rule?



for N we do not have 8 electrons.



3 non bonding electrons +
4 bonding electrons
= 7 total (Not 8)



12) which of the following structure is Not an exception to the Octet Rule?

a) PCl_5

b) SF_6

c) BH_3

d) All of the above are exceptions to the octet Rule.

13) What is the total number of electrons in

the Lewis structure of

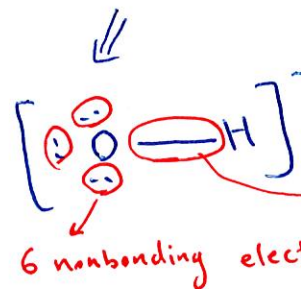
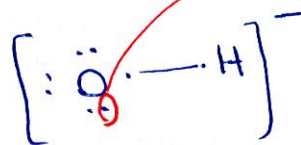
OH^- ?
 one electron will be added to oxygen

a) 6

b) 7

c) 8

d) 9



6 nonbonding electrons
 2 bonding (shared) electrons

$6 + 2 = 8$: Total number of electrons

14) What is the number of nonbonding electrons in O_2 ?

a) 4

b) 8

c) 2

d) 5



4 pair nonbonding electrons

4 lone pair electrons

$4 \times 2 = 8$ electrons

15) How many bonding electrons are in the Lewis structure of N_3 ?

- a) 2
- b) 4
- c) 6**
- d) 8



We face the single electrons in front of each other

Each dash represents 2 electrons that are being shared between 2 atoms.

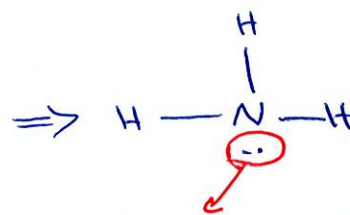
16) How many lone pair electrons in NH_3 ?

- a) 1**
- b) 2
- c) 3
- d) 4

lone pair electrons



does nitrogen have



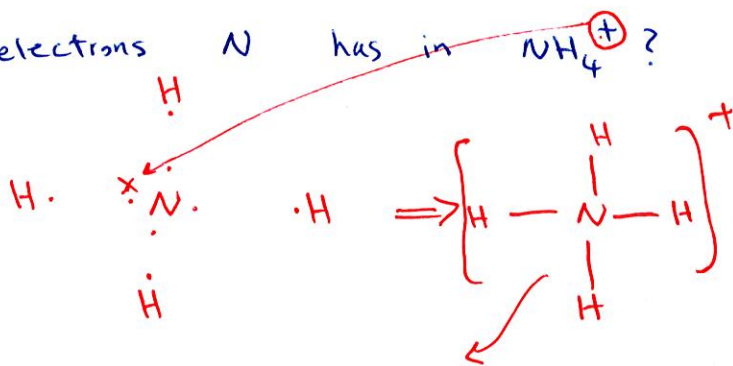
1 lone pair electrons
2 nonbonding electrons

17) What does "dash" represent in Lewis structures?

- a) Lone pair electrons
- b) pair of shared electrons**
- c) nonbonding electrons
- d) valence electrons

18) How many lone pair electrons N has in NH_4^+ ?

- a) 4
- b) 2
- c) 1
- d) 0**

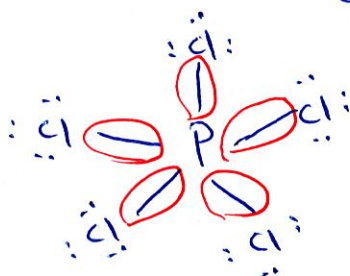


N has 4 pair of bonding electrons (8 bonding electrons)

It has 0 nonbonding electrons.

19) How many bonding electrons the following Lewis structure has in total?

- a) 30
- b) 15
- c) 10**
- d) 5

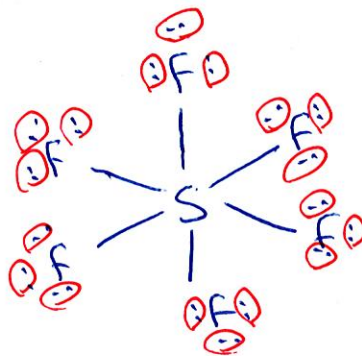


The dash represents a pair of shared electrons.

5 pair $\Rightarrow 5 \times 2 = 10$ bonding electrons.

20) How many lone pair electrons are present in the following Lewis structure?

- a) 6
- b) 12
- c) 18**
- d) 36



21) What is the total number of electrons in the following Lewis structure? $CN^- \rightarrow [:C \equiv N:]^-$

- a) 4
- b) 6
- c) 10**
- d) 5



3 pair of bonding electrons $\Rightarrow 2 \times 3 = 6$

6 bonding electrons

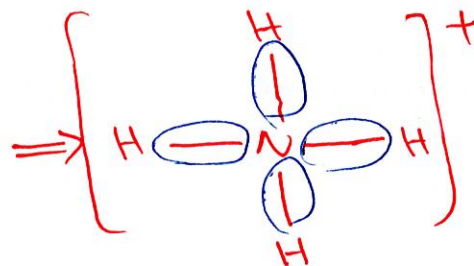
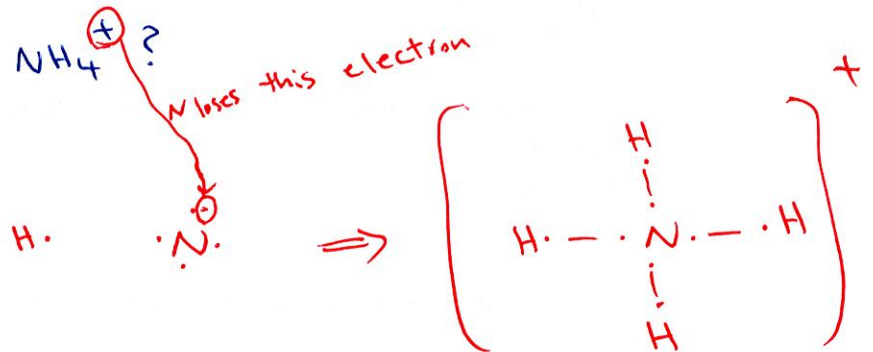
2 lone pair electrons $\Rightarrow 2 \times 2 = 4$

4 non bonding electrons

$6 + 4 = 10$: total number of electrons

22) What is the total number of electrons in the Lewis structure of NH_4^+ ?

- a) 8**
- b) 4
- c) 0
- d) 1



4 pair of bonding electrons

$\Rightarrow 4 \times 2 = 8$ bonding electrons

0 lone pair electrons

$8 + 0 = 8$: total number of electrons.

23) How many nonbonding electrons $\text{:}\overset{\cdot\cdot}{\text{N}}=\overset{\cdot\cdot}{\text{O}}\text{:}$ has?

$$2 + 1 + 2 + 2 = 7$$

- a) 3
- b) 7**
- c) 8
- d) 4

24) Which of the following molecules form a triple bond?

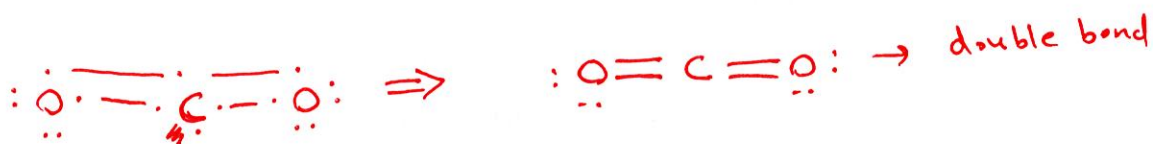
a) O_2



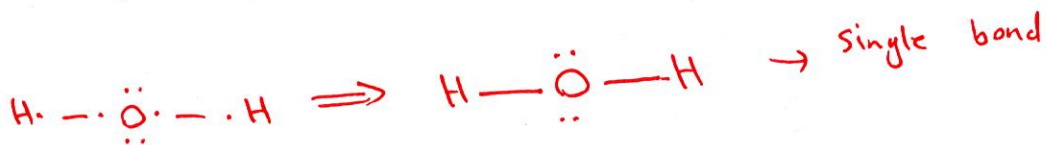
b) N_2



c) CO_2



d) H_2O



25) Which Lewis structure is Not correct?

a) $\text{Li}\cdot$ ✓

b) $\text{Mg}^{2+} [\text{:}\overset{\cdot\cdot}{\text{O}}\text{:}]^{2-}$ X $\text{Mg}^{2+} [\text{:}\overset{\cdot\cdot}{\text{O}}\text{:}]^{2-}$

c) $\text{K}^+ [\text{:}\overset{\cdot\cdot}{\text{Cl}}\text{:}]^-$ ✓

d) $[\text{:}\text{C}\equiv\text{N}\text{:}]^-$ ✓