

## Winter Break Reminders and Suggestions:

When we return from Winter Break we will be starting a new chapter called "Intermolecular Forces." This chapter starts to look at how molecules interact with each other when next to each other. After that we will start our "Reactions" chapter where we learn how molecules react to form new molecules. These two chapters combine almost every topic we have learned during 1<sup>st</sup> semester.

**There is no official homework over Winter Break, however, please make sure that you do not forget the following topics while on vacation!** If you struggled with these topics during 1<sup>st</sup> semester please spend some time reviewing the topics. We want to make sure that everyone comes back from vacation ready to start 2<sup>nd</sup> semester off in a strong way!

Included in this packet is a chart of pages where you learned the topics, pages where you have practice problems we did during the year, and a small practice test of some examples of the types of things we need to make sure we don't forget how to do. Please realize that this practice test is not required, and it does not show every single possible thing you need to remember from 1<sup>st</sup> semester, it is just some examples to remind you.

We will keep using the same Interactive Notebook 2<sup>nd</sup> semester so do not lose it or get a new one. The gradebook starts over 2<sup>nd</sup> semester so everyone gets to start fresh and work towards completing all their work, doing well on quizzes and tests, etc.

If you have questions please email me. I will not be checking email daily, but I will check it occasionally over vacation. Thank you, and have a fabulous Winter Break!

*Mrs. Farmer*

## Some Key Topics to Remember Over Vacation:

### 1. Study your ions!

- **There will be an ion quiz the week we return!**
- The day is unannounced, but it will be during the first week.
- Remember to know the ones on your green ion sheet, but also any atoms from the periodic table s, p, d block that follow the pattern of the group numbers.

### 2. Trend for electronegativity

- Identify which atom is more electronegative

### 3. Types of bonds

- Identify if a molecule is ionic or covalent

### 4. Writing formulas

- Crossing over to make neutral ionic compounds
- Using prefixes to write covalent molecules

### 5. Naming ionic and covalent

- Remember - two different ways to name things – one for ionic, one for covalent

### 6. Lewis Structures

- The "Intermolecular Forces" chapter looks at how symmetrical & unsymmetrical molecules behave. Without a correct Structure we won't know if it's symmetrical or not!

Topic	Notes Page(s)	WS Page(s)
Ions	43, 101	100
Electroneg.	85	84, 86, 87
Types of Bonds	103	102, 104
Writing/ Naming Formulas	107, 111	106, 108, 109, 110, 111, 112, 113
Lewis Structures	117, 119, 121	116, 122, 123, 124, 125

**\*Remember** – You have QR codes in your notebook of videos, the class website has a "Resources" tab that has links to other websites and other practice, and you have the entire internet at your fingertips too! 😊

## Practice Test for Jogging Your Memory Before 2<sup>nd</sup> Semester:

1. The name for the  $\text{NO}_3^-$  ion is  
A) nitrate ion  
B) nitrite ion  
C) nitrogen ion  
D) nitric ion

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2. Which has covalent bond(s)?  
A) NaCl  
B) CaO  
C)  $\text{CO}_2$   
D)  $\text{CS}_2\text{O}$

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3. The correct name for FeO is  
A) iron oxide  
B) iron(II) oxide  
C) iron(III) oxide  
D) iron monoxide

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4. True or false?  $\text{CH}_4$  has ionic bonds.  
A) True  
B) False

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5. Which has a triple bond?  
A)  $\text{CH}_4$   
B) CO  
C)  $\text{SO}_2$   
D)  $\text{NO}_3^-$

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6. Carbonate ion is  $\text{CO}_3^{2-}$ . What is the correct formula for sodium carbonate?  
A)  $\text{Na}(\text{CO}_3)_2$   
B)  $\text{Na}_2(\text{CO}_3)_2$   
C)  $\text{Na}_2\text{CO}_3$   
D)  $\text{Na}_3(\text{CO})_2$

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7. The formula for the carbonate ion is  
A)  $\text{CO}_3^-$   
B)  $\text{CO}_3^{2-}$   
C)  $\text{CO}_4^-$   
D)  $\text{CO}_4^{2-}$

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8. Alkali metals (Group I):  
A) gain 1 electron  
B) gain 7 electrons  
C) gain or lose 7 electrons  
D) lose 1 electron

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9. The total # of oxygen atoms in  $\text{Fe}_2(\text{CO}_3)_3$  is  
A) 3  
B) 6  
C) 9  
D) 12

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10. The name for  $\text{Al}(\text{OH})_3$  is  
A) aluminum(III) hydroxide  
B) aluminum trihydroxide  
C) aluminum hydroxide  
D) monaluminum trihydroxide

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11. Choose the most electronegative:  
A) Li  
B) Cs  
C) Fr  
D) K

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12. What is the formula for sulfur trioxide?  
A) SO  
B)  $\text{SO}_2$   
C)  $\text{SO}_3$   
D)  $\text{S}_3\text{O}$

13. How many lone pairs of electrons in ammonia, NH<sub>3</sub>?  
 A) 0  
 B) 1  
 C) 2  
 D) 3
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14. N<sub>2</sub> is an example of a covalent bond.  
 A) True  
 B) False
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15. Choose the correct structure for OH<sup>-</sup>  
 A)  $\left[ \begin{array}{c} \cdot\cdot \\ \text{O} \cdot \text{H} \\ \cdot\cdot \end{array} \right]^{-}$   
 B)  $\left[ \text{O} : \text{H} \right]^{-}$   
 C)  $\left[ \begin{array}{c} \cdot\cdot \\ : \text{O} : \text{H} \\ \cdot\cdot \end{array} \right]^{-}$   
 D)  $\left[ \begin{array}{c} \cdot\cdot \\ \cdot \text{O} : \text{H} \\ \cdot \end{array} \right]^{-}$
- 
16. Which of the following is a nonmetal?  
 A) Cerium  
 B) Cesium  
 C) Carbon  
 D) Calcium
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17. The Lewis structure for which of the following contains the greatest number of lone pairs of electrons?  
 A) CH<sub>4</sub>  
 B) HF  
 C) F<sub>2</sub>  
 D) H<sub>2</sub>O
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18. In naming ionic compounds - cation is named first and the anion second.  
 A) True  
 B) False
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19. Carbon monoxide is  
 A) CO<sub>2</sub>  
 B) CO  
 C) C<sub>2</sub>O  
 D) CMnO<sub>2</sub>
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20. Arrange the following elements in order of increasing electronegativity (from the smallest to the largest):  
 A) N < C < Be < F  
 B) C < F < Be < N  
 C) F < N < C < Be  
 D) Be < C < N < F
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21. How many of the following have multiple bonds?  
 CO, CO<sub>2</sub>, CO<sub>3</sub><sup>2-</sup>, N<sub>2</sub>, O<sub>2</sub>  
 A) 2  
 B) 3  
 C) 4  
 D) 5
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22. Choose the most electronegative:  
 A) Zn  
 B) Si  
 C) Sr  
 D) Ba
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23. iron(III) phosphide is:  
 A) Fe<sub>3</sub>P<sub>2</sub>  
 B) FeP  
 C) Fe<sub>3</sub>P  
 D) FeP<sub>3</sub>
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24. Covalent bonding occurs when electrons are shared by nuclei.  
 A) True  
 B) False
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25. Which has a double bond?  
 A) H<sub>2</sub>O  
 B) C<sub>2</sub>H<sub>2</sub>  
 C) C<sub>2</sub>H<sub>4</sub>  
 D) CN<sup>-</sup>
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26. Choose the least electronegative:  
 A) O  
 B) Pb  
 C) Ba  
 D) Cu
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27. Which has an ionic bond?  
 A) HCl(g)  
 B) NaCl  
 C) CCl<sub>4</sub>  
 D) SO<sub>2</sub>
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28. Which is **incorrect**?  
 A) CsCl<sub>2</sub>  
 B) AlCl<sub>3</sub>  
 C) Li<sub>2</sub>S  
 D) Mg(OH)<sub>2</sub>
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29. The charge on a barium ion is:  
 A) +1  
 B) +2  
 C) +3  
 D) -1
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30. Ammonium sulfate is  
 A) NH<sub>4</sub>SO<sub>3</sub>  
 B) NH<sub>4</sub>SO<sub>4</sub>  
 C) (NH<sub>4</sub>)<sub>2</sub>SO<sub>3</sub>  
 D) (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>
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31. Gold(I) oxide is:  
 A) G<sub>2</sub>O  
 B) GO  
 C) Au<sub>2</sub>O  
 D) AuO<sub>2</sub>
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32. Silver iodide is:  
 A) AgI  
 B) AgI<sub>2</sub>  
 C) Ag<sub>2</sub>I  
 D) SI
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33. Covalent bonding occurs when a metal reacts with a nonmetal.  
 A) True  
 B) False
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34. The compound PI<sub>3</sub> is named  
 A) potassium iodide  
 B) monophosphorus iodide  
 C) phosphorus iodide  
 D) phosphorus triiodide
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35. Titanium(IV) oxide has the formula  
 A) Ti<sub>4</sub>O  
 B) TiO<sub>4</sub>  
 C) Ti(IV)O  
 D) TiO<sub>2</sub>

**Answer Key**  
 \*Answer key has not been checked  
 If you see typos please email me so I can fix them!

1. A
2. C
3. B
4. B
5. B
6. C
7. B
8. D
9. C
10. C
11. A
12. C
13. B
14. A
15. C
16. C
17. C
18. A
19. B
20. D
21. D
22. B
23. B
24. A
25. C
26. C
27. B
28. A
29. B
30. D
31. C
32. A
33. B
34. D
35. D