

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 1st 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 1st semester please spend some time reviewing the topics. We want to make sure that everyone comes back from vacation ready to start 2nd 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 1st semester, it is just some examples to remind you.

If you still have me next semester, we will keep using the same Interactive Notebook so do not lose it or get a new one. The gradebook starts over 2nd 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 , 97	44 , 96 (flash cards)
Electroneg.	85	84 , 86 , 87
Types of Bonds	99	98
Writing/ Naming Formulas	101 , 105	100a , 100b , 102 , 103 , 104 , 107
Lewis Structures	109 , 111 , 113 , 115	108 , 110 , 112 , 116 , 117 , 118 , 119

***Remember** – You have YouTube videos made by Mrs. Farmer, 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 2nd Semester:

1. The name for the NO_3^- ion is
A) nitrate ion
B) nitrite ion
C) nitrogen ion
D) nitric ion

2. Which has covalent bond(s)?
A) NaCl
B) CaO
C) CO_2
D) CS_2O

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

4. True or false? CH_4 has ionic bonds.
A) True
B) False

5. Which has a triple bond?
A) CH_4
B) CO
C) SO_2
D) NO_3^-

6. Carbonate ion is 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) Na_2CO_3
D) $\text{Na}_3(\text{CO})_2$

7. The formula for the carbonate ion is
A) CO_3^-
B) CO_3^{2-}
C) CO_4^-
D) CO_4^{2-}

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

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

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

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

12. What is the formula for sulfur trioxide?
A) SO
B) SO_2
C) SO_3
D) S_3O

13. How many lone pairs of electrons in ammonia, NH_3 ?
- A) 0
B) 1
C) 2
D) 3
-
14. N_2 is an example of a covalent bond.
- A) True
B) False
-
15. Choose the correct structure for OH^-
- 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
-
17. The Lewis structure for which of the following contains the greatest number of lone pairs of electrons?
- A) CH_4
B) HF
C) F_2
D) H_2O
-
18. In naming ionic compounds - cation is named first and the anion second.
- A) True
B) False
-
19. Carbon monoxide is
- A) CO_2
B) CO
C) C_2O
D) CMnO_2
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20. Arrange the following elements in order of increasing electronegativity (from the smallest to the largest):
- A) $\text{N} < \text{C} < \text{Be} < \text{F}$
B) $\text{C} < \text{F} < \text{Be} < \text{N}$
C) $\text{F} < \text{N} < \text{C} < \text{Be}$
D) $\text{Be} < \text{C} < \text{N} < \text{F}$
-
21. How many of the following have multiple bonds?
 $\text{CO}, \text{CO}_2, \text{CO}_3^{2-}, \text{N}_2, \text{O}_2$
- A) 2
B) 3
C) 4
D) 5
-
22. Choose the most electronegative:
- A) Zn
B) Si
C) Sr
D) Ba
-
23. iron(III) phosphide is:
- A) Fe_3P_2
B) FeP
C) Fe_3P
D) FeP_3
-
24. Covalent bonding occurs when electrons are shared by nuclei.
- A) True
B) False
-
25. Which has a double bond?
- A) H_2O
B) C_2H_2
C) C_2H_4
D) CN^-
-
26. Choose the least electronegative:
- A) O
B) Pb
C) Ba
D) Cu
-
27. Which has an ionic bond?
- A) $\text{HCl}(g)$
B) NaCl
C) CCl_4
D) SO_2
-
28. Which is **incorrect**?
- A) CsCl_2
B) AlCl_3
C) Li_2S
D) $\text{Mg}(\text{OH})_2$
-
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_4SO_3
B) NH_4SO_4
C) $(\text{NH}_4)_2\text{SO}_3$
D) $(\text{NH}_4)_2\text{SO}_4$
-
31. Gold(I) oxide is:
- A) G_2O
B) GO
C) Au_2O
D) AuO_2
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32. Silver iodide is:
- A) AgI
B) AgI_2
C) Ag_2I
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_3 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_4O
B) TiO_4
C) $\text{Ti}(\text{IV})\text{O}$
D) TiO_2

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