

Chapter 20 Test Review Physical Science

Answer the following questions on a separate piece of paper. If you are working on a problem make sure to show your work to receive credit! If the answer requires units, **make sure to include the unit.**

1. What do the dots in an electron dot diagram represent?
 - a. How many dots would an element in the oxygen family have?
 - b. How many dots would an element in the inert gases have?
 - c. Explain why the inert gases do not form compounds with other elements?
2. Explain how an ionic bond is made.
3. When forming an ionic bond, what must the sum of the charges equal?
4. What is the name of a positive ion?
5. What is the negative ion in the formula FeCl_3 ?
 - a. Which of the above elements is a nonmetal?
 - b. How many iron atoms are there?
 - c. How many chlorine atoms are there?
6. Explain how a covalent bond is made.
7. Is CO_2 covalent or ionic?
 - a. Explain how you know this.
 - b. What is the name of this compound?
 - c. What is the number 2 in the above formula called?
8. Is NaF covalent or ionic?
 - a. Explain how you know this.
 - b. What is the name of this compound?
9. What is the oxidation number for elements in the alkaline earth metals?
10. What is the oxidation number for elements in the halogen family?
11. What is the oxidation number for elements in the noble gases?
 - a. Why don't these elements react with anything else?
12. What metals are the most reactive?
 - a. Explain the reason for your answer.
13. What nonmetals are the most reactive?
 - a. Explain the reason for your answer.
14. What would be the formula for a compound that forms between calcium and bromine?
 - a. What would be the name of this compound?
15. What would be the formula for a compound that forms between aluminum and sulfur?
 - a. What would be the name of this compound?
16. What would be the formula for a compound that forms between lithium and nitrogen?
 - a. What would be the name of this compound?
 - b. How many lithium atoms are there in this compound?

17. What is the chemical formula for iron (III) oxide?
 - a. What does the Roman numeral mean?
18. What is the chemical formula for carbon tetrachloride?
 - a. How many chlorine atoms are in this compound?
19. What is the chemical formula for magnesium iodide?
20. What is the chemical formula for oxygen?
21. In terms of ionic compounds explain what opposites attract refers to.
22. In terms of covalent bonds, explain what sharing means.
23. What type of bond forms a crystal?
24. What are the first five prefixes used in covalent naming?
25. What common metals need roman numerals in their names...name three.
26. What type of bond forms a molecule?
27. What is the number of valence electrons that all atoms are trying to achieve when forming a bond?
 - a. What is one element that is an exception to this rule?
 - b. How many e^- does this exception need in its outer energy level?
28. In the formula $\text{Ca}(\text{NO}_3)_2$how many different types of atoms are there?
 - a. How many total atoms are there?
 - b. What is NO_3 referred to as?
29. What does it mean to have a triple covalent bond?
30. What type of bond is represented by $\text{O}=\text{O}$?
31. What type of elements form a metallic bond?
32. What type of bond does a sea of mobile electrons refer to?