

Assignment 7-4, 7-5

Name _____

Class Period _____

Date _____

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1. Explain how **metallic bonding** is different from covalent bonding or ionic bonding.

2. Describe at least four characteristics of metals that are derived from metallic bonding.

3. Which two classes of elements on the periodic table tend to form **ionic bonds** when combined in a chemical reaction?

4. Which of the elements on the periodic table will most likely form **covalent bonds** when combined in a chemical reaction?

5. If the atoms of an element lose two electrons during a chemical reaction, what will be the oxidation number given to that element?

6. If the atoms of an element have an oxidation number of 3^- , will electrons be gained by the atoms or lost during a chemical reaction? How many?

7. If element Az has an oxidation number of 2^+ , and element Rq has an oxidation number of 1^- , how many atoms of Az and Rq will it take to form a stable compound?

8. What is the "rule of oxidation numbers"?

9. What is the scientific use for oxidation numbers?

10. Explain the process used in making industrial diamonds.

Please continue on the other side.

Using oxidation numbers, determine the correct balanced formulas for the following combinations and print the finished formula in the box to the right of each combination.

11. Ca & Br

12. C & Cl

13. Cl & Cl

14. K & OH⁻

15. Na & SO₄²⁻

16. Ca & O

17. Al & O

18. Which type of bonding should we expect between magnesium and fluorine?

19. Which type of bonding should we expect between sulfur and oxygen?

20. Why do we expect Family 1 elements to form ionic bonds with Family 17 elements?

21. Why do we expect Family 16 elements to form covalent bonds with Family 17 elements?
