**Define the following terms**

1. Empirical Formula -

2. Formula Unit –

3. Chemical Bond –

4. Ionic Bond –

5. Metallic Bond –

6. Polar Covalent Bond –

7. Non-Polar Covalent Bond –

8. Salt –

9. Crystal Lattice –

10. Octet Rule –

11. Diatomic Molecules –

12. VSEPR –

13. Bond Angle –

14. Alloy –

15. Anion –

16. Cation –

17. Delocalized Electrons –

18. Electrostatic –

19. Electrolyte –

20. Oxidation Number –

21. Oxyanion –

22. Polyatomic Ion –

23. Hybridization –

24. Electronegativity –

25. Does a polar bond make a molecule polar? Why or why not?

26. The overall charge of any ionic compound is always \_\_\_\_\_\_\_\_

27. What is the formula for calcium bromide?

How many Calcium atoms are there?

How many Bromine atoms?

Which element lost electrons?

Which element gained electrons?

28. Write the formula for sodium sulfide and circle the subscript.

29. What is the general electron configuration for a noble gas?

**30- 36. Draw the following molecules, identify the shapes, bond angles, hybridization and whether or not the molecule is polar.**

CBr4

NI3

SiO2

SeO3

OF2

BH3 (Boron is an exception to the octet rule, it only needs 6 valence electrons)

BeF2 (Beryllium only needs 4 valence electrons)

**Define the following terms**

1. Empirical Formula -

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22. Polyatomic Ion –

23. Hybridization –

24. Electronegativity –

25. Does a polar bond make a molecule polar? Why or why not?

**Only when molecules have an imbalance of polar bonds**

26. The overall charge of any ionic compound is always \_\_\_**zero**\_\_\_

27. What is the formula for calcium bromide? **CaBr2**

How many Calcium atoms are there? **1**

How many Bromine atoms? **2**

Which element lost electrons? **Ca (Ca+2)**

Which element gained electrons? **Br (Br-1)**

28. Write the formula for sodium sulfide and circle the subscript.

**Na2S**

29. What is the general electron configuration for a noble gas?

**?**

**30- 36. Draw the following molecules, identify the shapes, bond angles, hybridization and whether or not the molecule is polar.**

Br\ shape: Tetrahedral hybridization: sp3

Br-C-Br angle: 109.5ᵒ

\Br polar? yes

CBr4

shape: trigonal pyramidal hybridization: sp3

I – N – I angle: 109.5ᵒ

\I polar? yes

NI3

shape: Linear hybridization: sp

O=Si=O angle: 180.0ᵒ

polar? no

SiO2

SeO3

shape: Bent hybridization: sp3

F – O – F angle: 109.5ᵒ

polar? yes

OF2

BH3 (Boron is an exception to the octet rule, it only needs 6 valence electrons)

shape: Trigonal planar hybridization: sp2

H-B-H angle: 120.0ᵒ

\H polar? no

BeF2 (Beryllium only needs 4 valence electrons)

shape: Linear hybridization: sp

F-Be-F angle: 180.0ᵒ

polar? no