

Name: _____

Chapter 8 Review Sheet

1. What are covalent bonds?
2. Covalent bonds typically occur between _____.
3. A _____ is a neutral group of atoms joined together by covalent bonds.
4. Monoatomic atoms contain _____ atom while diatomic atoms contain _____ atoms.
5. What are the seven diatomic molecules?

6. What is a molecular compound?

7. A molecular formula reflects the _____ number of atoms in each molecule.
8. True or False: A molecular formula tells you about a molecule's structure.
9. What representative units define molecular compounds and ionic compounds?

- 10. List three differences between ionic and covalent bonds.**

11. In covalent bonds, electron sharing usually occurs so that atoms attain the electron configuration of _____.
- 12. How many electrons does a single covalent bond share? Double? Triple?**

13. A _____ is a group of covalently bonded atoms with a positive or negative charge that acts as a single unit. Give an example.
14. True or false: Compounds containing polyatomic ions include both ionic and covalent bonding.
15. What are exceptions to the octet rule?

16. _____ are two or more valid electron dot structures that can be written for the same molecule.

- 17. What is bond dissociation energy?**

18. Which type of covalent bond is the strongest? Weakest?

19. How is the strength of a covalent bond related to its bond dissociation energy?

20. The _____ theory states repulsion between electrons causes molecules adjust their shapes so that the valence electron pairs are as far apart as possible.

21. BE ABLE TO DETERMINE NUMBER OF BONDING GROUPS, LONE PAIRS, AND THEN MOLECULAR/ELECTRON SHAPE OF A MOLECULE.

22. What are molecular orbitals?

23. BE ABLE TO TELL HOW MANY SIGMA AND PI BONDS ARE IN A MOLECULE.

24. _____ is the mixing of several atomic orbitals to form the same number of equivalent orbitals.

25. BE ABLE TO TELL ME HOW SPECIFIC HYBRIDS ARE FORMED. (Ex: sp^2 orbitals are formed from 1 s orbital and 2 p orbitals)

26. BE ABLE TO TELL A COMPOUNDS HYBRIDIZATION BASED ON ELECTRON GEOMETRY.

27. What is the difference between nonpolar and polar covalent bonds?

28. What is electronegativity?

29. The more _____ atom attract electrons more strongly and gains a slight _____ charge. The less electronegative atom has a slight _____ charge.

30. BE ABLE TO TELL ME IF A MOLECULAR IS POLAR OR NONPOLAR BASED ON ELECTRONEGATIVITY VALUES.

31. How do the strengths of intermolecular attractions compare with ionic and covalent bonds?

32. Van der Waals is composed of two intermolecular forces.

a) dipole interactions: Occurs when the slightly _____ region of a _____ molecule is weakly attracted to the slight _____ region of another polar molecule.

b) dispersion forces: Occur between _____ molecules and caused by motion of _____.

33. Which intermolecular forces is the weakest? Which is the strongest?

34. _____ bonds are attractive forces in which a hydrogen covalently bonded to a very electronegative atom such is also weakly bonded to an unshared electron pair of another electronegative atoms. The strong electronegative atom could include _____.

35. _____ are solids in which all the atoms are covalently bonded to each other. An example is _____.