PHYSICAL SCIENCE
COMPOUNDS

NAME ***KEY***
DATE _____ CLASS _____

TYPES OF BONDS

Part A: Directions – Using your knowledge of the following, classify each as having ionic, covalent, or metallic bonds. Using a periodic table, write down whether each element is a metal or nonmetal.

1. Cu (copper) *metallic* Cu = metal
2. CH_4 (methane) *covalent* C = nonmetal; H = nonmetal
3. Al (aluminum) *metallic* Al = metal
4. NaCl (table salt) *ionic* Na = metal; Cl = nonmetal
5. $MgSO_4$ (Epsom salt) *ionic* Mg = metal; S = nonmetal; O = nonmetal
6. Zn (zinc) *metallic* Zn = metal
7. $C_{12}H_{22}O_{11}$ (sugar) *covalent* C = nonmetal; H = nonmetal; O = nonmetal
8. $MgCl_2$ (used to melt ice) *ionic* Mg = metal; Cl = nonmetal
9. $(-CH_2-CH_2-)_n$ (polymer) *covalent* C = nonmetal; H = nonmetal
10. $NaHCO_3$ (baking soda) *ionic* Na = metal; H = nonmetal; C = nonmetal; O = nonmetal

Part B: Directions – Using your knowledge of the following, classify each as an ionic compound or a molecular compound. Using a periodic table, write down whether each element is a metal or nonmetal.

11. $CuSO_4$ (copper sulfate) *ionic compound* Cu = metal; S = nonmetal; O = nonmetal
12. O_2 (oxygen gas) *molecular compound* O = nonmetal
13. NaCl (table salt) *ionic compound* Na = metal; Cl = nonmetal
14. $MgSO_4$ (Epsom salt) *ionic compound* Mg = metal; S = nonmetal; O = nonmetal
15. C_2H_5OH (ethanol) *molecular compound* C = nonmetal; H = nonmetal; O = nonmetal
16. $C_{12}H_{22}O_{11}$ (sugar) *molecular compound* C = nonmetal; H = nonmetal; O = nonmetal
17. $MgCl_2$ (magnesium chloride) *ionic compound* Mg = metal; Cl = nonmetal
18. $(-CH_2-CH_2-)_n$ (polymer) *molecular compound* C = nonmetal; H = nonmetal
19. $NaHCO_3$ (baking soda) *ionic compound* Na = metal; H = nonmetal; C = nonmetal; O = nonmetal
20. H_2O (water) *molecular compound* H = nonmetal; O = nonmetal