

Name: _____

Date: _____

Chemical Bonding Worksheet

REMEMBER....

| | | |
|----------------------|-----------------------------------|------------------|
| Ionic Bond | between a Metal and Non-Metal | (M + NM) |
| Covalent Bond | between a Non-Metal and Non-Metal | (NM + NM) |

PART 1: Determine if the elements in the following compounds are metals or non-metals. Describe the type of bonding that occurs in the compound.

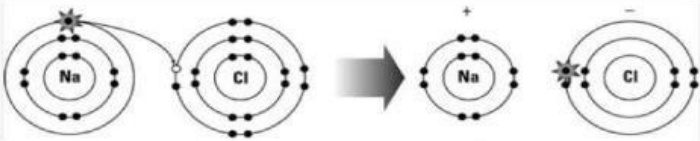
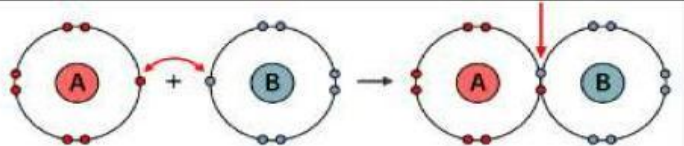
| Compound | Element 1 | M or NM | Element 2 | M or NM | Bond Type |
|--------------------------------|-----------|---------|-----------|---------|-----------|
| NO ₂ | Nitrogen | NM | Oxygen | NM | Covalent |
| NaCl | | | | | |
| SO ₂ | | | | | |
| PI ₃ | | | | | |
| MgBr ₂ | | | | | |
| CaO | | | | | |
| H ₂ O | | | | | |
| K ₂ O | | | | | |
| AlF ₃ | | | | | |
| O ₂ | | | | | |
| CuCl ₂ | | | | | |
| NO ₂ | | | | | |
| CO ₂ | | | | | |
| HF | | | | | |
| Rb ₂ S | | | | | |
| NBr ₂ | | | | | |
| Fe ₂ O ₃ | | | | | |
| CCl ₄ | | | | | |

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PART 2: Determine whether the following are properties of Ionic or Covalent Bonds.

| Chemical Property | Type of Bond |
|---|--------------|
| 1. Attraction between oppositely charged ions | Ionic |
| 2. High Melting Point | |
| 3. Low Melting Point | |
| 4. High Boiling Point | |
| 5. Low Boiling Point | |
| 6. Transfer electrons | |
| 7. Share Electrons | |
| 8. Form crystal lattice | |
| 9. Form Molecules | |
| 10. Does not conduct electricity | |
| 11. Conducts electricity in molten state (liquid state) | |
| 12. Typically solid at room temperature | |
| 13. Hard, brittle solid with definite crystal shape | |
| 14. Dissociate into ions when dissolved in water | |
| 15. Prefixes used when naming compounds | |
| 16. Roman Numeral may be used when naming compounds | |
| 17. Metal + Non-metal | |
| 18. Non-metal + Non-metal | |
| 19. Uses 'crisscross' method when writing formulas | |
| 20. Uses prefixes to determine number of atoms in formula | |
| 21. Typically liquid, gas, or soft solid at room temperature | |
| 22. Solubility in water depends on polarity (polar or non-polar) | |
| 23. Cations and Anions | |
| 24.  | |
| 25.  | |