Name:	Date:		
	Period:		
1. In a propanal molecule, an oxygen atom is bonded with a carbon atom. What is the total number of pairs of electrons shared between these atoms?	H:Ë:		
A) 1 B) 2 C) 3 D) 4	The electrons in the bond between hydrogen and fluorine are more strongly attracted to the atom of		
2. Which symbol represents an atom in the ground state with the most stable valence electron configuration?	 A) hydrogen, which has the higher electronegativity B) fluorine, which has the higher electronegativity C) hydrogen, which has the lower electronegativity D) fluorine, which has the lower electronegativity 		
A) B B) O C) Li D) Ne			
3. When a sodium atom reacts with a chlorine atom to form a compound, the electron configurations of the ions	8. Which type of bonding is usually exhibited when the electronegativity difference between two atoms is 1.1?		
forming the compound are the same as those in which noble gas atoms?	A) ionic B) covalent C) metallic D) network		
A) krypton and neon B) krypton and argon C) neon and helium D) neon and argon	9. Which pair of elements below will form a compound with the greatest ionic character?		
4. Which is the correct electron-dot formula for a molecule of chlorine?	A) Pb and F B) Ca and O C) Na and Cl D) Cs and N		
A) \cdots \cdots B) \cdots \cdots \cdots \cdots C1 : C1 : C1 : \cdots \cdots D) \cdots \cdots	10. Which atom will form the most polar bond with the greatest degree of ionic bonding when bonding with sodium?		
: Cl : Cl : Cl :	A) F B) Cl C) I D) Br		
5. What is the most likely electronegativity value for a metallic element?	11. Which bond has the greatest degree of ionic character? A) H-Cl B) I-Cl C) Cl-Cl D) K-Cl		
A) 1.3 B) 2.7 C) 3.4 D) 4.0			
 6. Which element has an atom with the greatest tendency to attract electrons in a chemical bond? A) carbon B) chlorine C) silicon D) sulfur 	12. Given the electron dot formula: H: X: Which atom represented as X would have the <i>least</i> attraction for the electrons that form the bond? A) F B) Cl C) I D) Br		

- 13. In which compound do the atoms have the greatest difference in electronegativity?

 - A) NaBr B) AlCl₃ C) KF
- D) LiI
- 14. If the electronegativity difference between the elements in compound NaX is 2.1, what is element X?
 - A) bromine
- B) chlorine
- C) fluorine
- D) oxygen
- 15. The data table below represents the properties determined by the analysis of substances A, B, C, and D.

Substance	${\bf MeltingPoint(^{\circ}C)}$	$\textbf{Boiling Point} (^{\circ}\textbf{C})$	Conductivity
A	-80	-20	none
B	20	190	none
C	320	770	as solid
D	800	1250	in solution

Which substance is an ionic compound?

- A) A
- B) *B*
- C) C
- D) *D*
- 16. As NaC₂H₃O₂(s) is stirred into water and dissolves, the electrical conductivity of the solution
 - A) decreases
- B) increases
- C) remains the same
- 17. As 1 gram of sodium hydroxide dissolves in 100 grams of water, the conductivity of the solution
 - A) decreases
- B) increases
- C) remains the same
- 18. Which substance dissolves in pure water and produces a solution that is a good conductor of electricity?
 - A) CaCl₂
- B) C₆H₁₂O₆

C) N₂

D) O₂

- 19. The bonds in BaO are best described as
 - A) covalent, because valence electrons are shared
 - B) covalent, because valence electrons are transferred
 - C) ionic, because valence electrons are shared
 - D) ionic, because valence electrons are transferred
- 20. Which Lewis electron-dot diagram correctly represents a hydroxide ion?

- 21. As a chlorine atom becomes a negative ion, the atom
 - A) gains an electron and its radius increases
 - B) gains an electron and its radius decreases
 - C) loses an electron and its radius increases
 - D) loses an electron and its radius decreases
- 22. Which statement best describes the substance that results when electrons are transferred from a metal to a nonmetal?
 - A) It contains ionic bonds and has a low melting point.
 - B) It contains ionic bonds and has a high melting point.
 - C) It contains covalent bonds and has a low melting
 - D) It contains covalent bonds and has a high melting point.
- 23. Which ion contains the same total number of electrons as Cl-?
 - A) S²⁻
- B) Br⁻ C) Mg²⁺ D) Na⁺
- 24. The crystal of potassium chloride is composed of
 - A) potassium chloride molecules
 - B) potassium atoms and chlorine atoms
 - C) potassium atoms and chloride ions
 - D) potassium ions and chloride ions
- 25. Given the reaction:

$$M + 2 \text{ H}_2\text{O} \rightarrow M(\text{OH})_2 + \text{H}_2$$

The metal represented by M is most likely a metal from Group

- A) 1
- B) 2
- C) 11
- D) 13
- 26. In the formula for the compound XCl_4 , the X could represent
 - A) C
- B) H
- C) Mg
- D) ZN

- 27. Which is the formula of an ionic compound?
 - A) SO₂

- B) CO₂
- C) CH₃OH
- D) NaOH
- 28. Which element would most likely form an ionic bond with chlorine?
 - A) O
- B) N
- C) S
- D) K
- 29. Element X has an electron configuration of 2-8-3. This element will combine with the phosphate ion to form a compound with the formula
 - A) XPO₄
- B) X(PO₄)₂
- C) X₂PO₄
- D) $X_2(PO_4)_3$
- 30. Base your answer to the following question on your knowledge of chemical bonding and on the Lewis electron-dot diagrams of H2S, CO2, and F2 below.

Which atom, when bonded as shown, has the same electron configuration as an atom of argon?