1) atomic mass 3) molar mass 2) atomic number 4) oxidation number 2) atomic number 4) oxidation number 2) Which is includes elements with the most similar chemical properties? 3) a total of eight valence electrons 1) Br, Ga, Hg 3) O, S, Se 2) Cr, Pb, Xe 4) N, O, F 3) Which is to elements contains a metal, a metalloid, a nonmetal, and anobe ges? 1) Be, Si, Cl, Kr 3) K, Fe, B, F 2) C, N, Ne, Ar 4) Na, Z, As, Sb 4) Which of the following Period 4. Charge 1 Sement exists as a diatomic molecule at STP? 1) Ca 2) Ge 3) As 1) Ca 2) Ge 3) As 2) introde 2, Group 15 3) Period 3, Group 16 3) period 3, Group 16 3) Period 3, Group 16 1) period 4, Group 15 3) Period 3, Group 16 7. Which Group 14 element is classified as a metal?? 1) around and metally inversion energy and low electronegativity 3) adifi 2) gerorid 2, Group 14 3) Silicon 2) around 2, Group 14 3) Silicon 2) around 2, Group 14 3) Silicon 1) how first ionization energy and low electronegativity 3) high first ionization energy and low e	1. The elements on the Periodic Table are arranged in order of increasing	14. An atom of argon in the ground state tends <i>not</i> to bond with an atom of a different element because the argon atom has
a rotation interview4) a total of eight valence electrons1) Br, Ga, Hg3) O, S, Se2) Cr, Ph, Xe4) N, O, T3. Which list of elements contains a metal, a metalloid, a nonmetal, a a noble gas?1) Br, Si, CL Kr3. Which list of elements contains a metal, a metalloid, a nonmetal, a a noble gas?1) Br, Si, CL Kr3. Which of the following Deriod 4 elements has the most metallic characteristics?1) Kr, Fe, B, F 2) C, N, Nc, Ar4) Na, Zn, AS, Sb4. Which of the following Deriod 4 elements has the most metallic characteristics?1) Kr, Br, My Can, AS, Sb164. Which of Group 15 element exists as a diatomic molecule at STP?1) Ibm or file a normetal (has a semimetal (metalloid) can be found in1) H2) It3) Ng A4) Og1) Period 6, Group 153) Period 3. Group 16 2) Period 2. Group 144) Period 4, Group 151) Bindi3) gas1) Period 6, Group 153) Silicon 2) germanium4) tim3) silicon 2) germanium4) tim1) Period 6, Group 14 element is cassified as a metal?1) solid3) gas1) I M2) Ike an element is malleable and con conduct electricity.1)1) I M2) K3) N4) Same orystal structures and the same properties1) Norm3) sulfur3) sulfur1) Norm3) sulfur3) sulfur1) Norm3) sulfur4) phosphorus1) All2) K3) N1. At SIP, which element is malleable and conduct electricity?1) norm3) sulfur1) Norm3) sulfur1) Norm3) s	1) atomic mass3) molar mass	1) more protons than neutrons
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 3. Which list of elements contains a metal, a metalloid, a nonmetal, and a noble gas? 3. Structure and anoble gas? 4. Which of the following Period 4 elements has the most metallic characteristics: 1. Ca 2. C. N. Ne, Ar 4. Which of the following Period 4 elements has the most metallic characteristics: 5. Which Group 15 clement exists as a diatomic molecule at STP? 1. Joan A anobe an allowing and the same or anter 4 or most of the known elements 2 nitrogen 4 anobe and 4 around 4 anobe and 4 an		
1) Previous 3) N, Pe, P, P 2) C, N, N, Ar 4) Na, Zn, As, Sb 4. Which of the following Period 4 elements has the most metallic characteristics? 1) Ca 2) Ge 3) As 4) Br 5. Which forcup 15 element exists as a diatomic molecule at STP? 1) bromine 3) hydrogen 1) phosphorus 3) bismuth 2) cobalt 4) mercury 1) phosphorus 3) bismuth 1) Which element is a seminetal (metalloid) can be found in 1) H 2) L 3) N2 4) O2 1) Period 6, Group 15 3) Period 3, Group 16 3) silicon 2) germanium 4) in 1. Carbon 3) silicon 3) silicon 2) germanium 4) in 1. A sample of an element is malleable and can conduct electricity. This element could be 3) Silicon 2) low first ionization energy and high electronegativity 1) her first ionization energy and high electronegativity 3) sulfur 3) sulfur 2) atomic masses 4) structural arrangements 1) All 2) K 3) Ne 4) St 1. Mich element is solid, brittle, and a poor conductor of electricity? 1) atomic mumber of protons 1) All 2) K 3) Suffur 2) low first ionization energy and high electronegativity<		 is an excellent conductor of heat and electricity exhibits metallic and nonmetallic properties
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13. Which of the following gases is monatomic at STP? 1) hydrogen 3) oxygen		
1) hydrogen 3) oxygen	, , , , , , , , , , , , , , , , , , , 	
2) chlorine 4) helium	2) chlorine 3) oxygen	

Name ___

24. Compared to a phosphorus atom, a P^{3-} ion has

- 1) more electrons and a larger radius
- 2) more electrons and a smaller radius
- 3) fewer electrons and a larger radius
- 4) fewer electrons and a smaller radius
- 25. As the atoms in Period 3 of the Periodic Table are considered from left to right, the atoms generally show
 - 1) an increase in radius and an increase in ionization energy
 - 2) an increase in radius and a decrease ionization energy
 - 3) a decrease in radius and an increase in ionization energy
 - 4) a decrease in radius and a decrease in ionization energy
- 26. What occurs as the atomic number of the elements in Period 2 increases?
 - 1) The nuclear charge of each successive atom decreases, and the atomic radius decreases.
 - 2) The nuclear charge of each successive atom decreases, and the atomic radius increases.
 - 3) The nuclear charge of each successive atom increases, and the atomic radius decreases.
 - 4) The nuclear charge of each successive atom increases, and the atomic radius increases.
- 27. Which of the following atoms has the largest atomic radius?

1) Na 2) K 3) Mg 4) Ca

28. Which element forms an ion larger than its atom?

1) Na 2) Ne 3) Ba 4) Br

- 29. Which atom has the *weakest* attraction for electrons in a chemical bond?
 - 1) a boron atom3) a fluorine atom2) a calcium atom4) a nitrogen atom
- 30. Which general trend is demonstrated by the Group 17 elements as they are considered in order from top to bottom on the Periodic Table?
 - 1) a decrease in atomic radius
 - 2) a decrease in electronegativity
 - 3) an increase in first ionization energy
 - 4) an increase in nonmetallic behavior

- 31. As the elements in Period 3 are considered from left to right, they tend to
 - 1) lose electrons more readily and increase in metallic character
 - 2) lose electrons more readily and increase in nonmetallic character
 - 3) gain electrons more readily and increase in metallic character
 - 4) gain electrons more readily and increase in nonmetallic character
- 32. Which element requires the *least* amount of energy to remove the most loosely held electron from a gaseous atom in the ground state?
 - 1) bromine 2) calcium 3) sodium 4) silver
- 33. As elements of Group 1 of the Periodic Table are considered in order from top to bottom, the ionization energy of each successive element decreases. This decrease is due to
 - 1) decreasing radius and decreasing shielding effect
 - 2) decreasing radius and increasing shielding effect
 - 3) increasing radius and decreasing shielding effect
 - 4) increasing radius and increasing shielding effect
- 34. Which general trend is found in Period 2 on the Periodic Table as the elements are considered in order of increasing atomic number?
 - 1) decreasing atomic mass
 - 2) decreasing electronegativity
 - 3) increasing atomic radius
 - 4) increasing first ionization energy
- 35. In which group of the Periodic Table do most of the elements exhibit both positive and negative oxidation states?
 - 1) 17 2) 2 3) 12 4) 7
- 36. Which nonmetal is the most reactive?
 - 1) fluorine 2) chlorine 3) bromine 4) iodine