

Physical Science  
Final Exam Review – Unit 2 (Chemistry)

Name: \_\_\_\_\_ Block: \_\_\_\_

**1-18. Using your Periodic Table and your own knowledge, complete the table below.**

Element	Symbol	Atomic Number	# of Protons	# of Electrons	# of Neutrons	# of Valance Electrons	Avg. Atomic Mass
Aluminum							
Neon							
Gold							

**TRUE OR FALSE? If the statement below is true, write a "T" on the line provided. If the statement is false, write a "F" on the line. If the statement is false, change a word(s) to make it true.**

19. \_\_\_\_\_ Noble gases are not stable.
20. \_\_\_\_\_ Magnesium is a metal.
21. \_\_\_\_\_ When metals bond with nonmetals they form covalent bonds.
22. \_\_\_\_\_ Atoms of the same element with different numbers of neutrons are known as isotopes.
23. \_\_\_\_\_ When two or more atoms form an ionic bond they share a pair of electrons.
24. \_\_\_\_\_ An atom that has gained or lost electrons is known as an isotope.
25. \_\_\_\_\_ An atom that has an overall charge is known as an isotope.
26. \_\_\_\_\_ Oxygen has 5 valance electrons.
27. \_\_\_\_\_ Calcium has 20 valence electrons.
28. \_\_\_\_\_ Protons and neutrons are located in the nucleus.
29. \_\_\_\_\_ Another name for families is groups.
30. \_\_\_\_\_ Nitrogen is a noble gas.
31. \_\_\_\_\_ The nucleus of an atom is always positively charged.

32. \_\_\_\_\_ Alkali metals are located in Family 18.
33. \_\_\_\_\_ Oxygen is a diatomic element.
34. \_\_\_\_\_ Oxygen and nitrogen will form a covalent bond.

**MULTIPLE CHOICE. Choose the best response and place the corresponding letter on the line provided.**

35. \_\_\_\_\_ Transition elements make up groups
- 5 through 9.
  - 10 through 14.
  - 3 through 12.
  - 4 through 20.
  - none of the above
36. \_\_\_\_\_ Which of the following is not in the halogen family?
- Bromine
  - Iodine
  - Astatine
  - none of these are in the halogen family
  - all of these are in the halogen family

**37-42. For each element, show the Bohr diagram and Lewis dot diagram.**

<u>Element</u>	<u>Bohr Diagram</u>	<u>Lewis Dot Diagram</u>
Sodium		
Magnesium		
Fluorine		

43. Sketch the bonding of oxygen and fluorine in the box below using a structural formula showing unpaired electrons.



a. Is this bonding ionic or covalent? \_\_\_\_\_

b. Give the chemical formula of the compound you draw above: \_\_\_\_\_

44. Sketch the bonding of lithium and sulfur in the box below using Lewis dot diagrams.



a. Is this bonding ionic or covalent? \_\_\_\_\_

b. Give the chemical formula of the compound you draw above: \_\_\_\_\_

**Write the chemical formula for the following ionic compounds (Level 1).**

45. Ammonium ( $\text{NH}_4^+$ ) and sulfur.

46. Calcium and sulfate ( $\text{SO}_3^{-2}$ ).

**Name the following:**

47.  $\text{Li}_2\text{O}$

48.  $\text{Cr}_3\text{N}_2$

49.  $\text{BrF}$

50.  $\text{CaF}_2$

**Give the chemical formula for the following:**

51. sodium chloride

52. zirconium (IV) oxide

53. rubidium chloride

54. carbon tetrachloride

**a. Balance each chemical equation below in the most reduced form possible. If the equation is balanced leave it as is and write "balanced" to the left of it.**

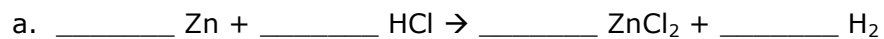
**b. Label each reaction as synthesis, decomposition, single displacement, double displacement, or combustion.**



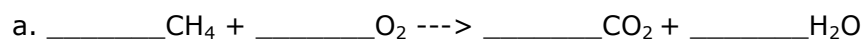
b. \_\_\_\_\_



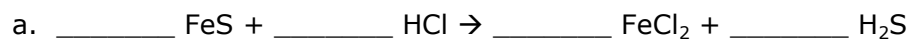
b. \_\_\_\_\_



b. \_\_\_\_\_



b. \_\_\_\_\_



b. \_\_\_\_\_