

NAME  
CHEMISTRY MONSTER REVIEW PACKET

VOCABULARY

1. Principle quantum number:
2. Ionization energy:
3. Isolelectronic:
4. Crystal lattice structure:
5. Valence Electrons:
6. Alkali metals:
7. Hunds rule:
8. Ground state:
9. Electronegativity:
10. Composition Reaction:
11. Single replacement reaction
12. Decomposition:
13. Double Replacement:
14. Soluble:
15. Insoluble:
16. Oxyacid:
18. Diatomic molecule:

FORMULA

NAME

19.  $\text{KMnO}_4$

20.  $\text{CuCl}_2$

21.  $\text{H}_2\text{S}_{(aq)}$

22.  $\text{H}_3\text{PO}_{4(aq)}$

23.  $\text{SF}_6$

24. NAME

FORMULA

25. Copper II nitrate

26. Oxygen tetrafluoride

27. Hydrofluoric acid

28. Sulfuric acid

29. Sodium sulfate

**Organic/Introductory**

30. Propane burns in oxygen, Draw a Lewis structure of propane.
31. Indicate 1 indicator that this would be a chemical reaction?
32. Draw out the structure of a 4 carbon alcohol. Draw each isomeric version.

**Atomic structure**

33. (2 points each)

ELEMENT	SYMBOL	# PROTONS	# e <sup>-</sup>	<sup>1</sup> <sub>0</sub> n	Atomic #	mass #	charge
Iron	_____	_____	_____	_____	_____	57	0
_____	Zr	_____	39	93	_____	_____	_____
silver	_____	_____	_____	_____	_____	108	-2
_____	_____	_____	25	29	_____	_____	0

Write the electron configuration for the following (Two points)

(long hand)

34. Al

35.  $S^{2-}$

(short hand)

36. I

37. U

Write the orbital diagrams for the following elements (2 points each)

38. Al

39. S

### **TRENDS OF THE PERIODIC TABLE**

40. Rank in order of ionization energy from smallest to largest. Elements: Fr, F, Cl, Mo, Ga

41. Adding an electron to an atom will always make it bigger? True/false... Explain

42. Adding a proton to an atom will always make it bigger? True/False... Explain

43. Adding a proton and an electron to an atom will always make it bigger? True/false... Explain

44. What is Coulomb's law?

45. How does Coulombs law affect the reactivity of a metal?

### **BONDING**

Writing ionic formulas

46. Na/Cl

Al/Cl

Na/Nitrate

Ammonium/Cl

Al/S

47. Draw a Lewis structure of  $SO_3$ . Determine if it is polar?

48. Would you expect the substance to dissolve in water? Why or why not?

### **CHEMICAL REACTIONS:**

For each question:

- Translate into chemical formula, if necessary.
- Indicate products of reaction or Indicate NO REACTION
- Make SURE YOU INDICATE IF THE REACTIONS WILL RUN?

- Indicate type of reaction.
- Balance



**MATHEMATICAL RELATIONSHIPS**

In the following questions give the correct answer using significant digits. Indicate number of significant digits.

52. 250. meters          250 people          2.5E2 miles

53. If you have a five gallon bucket of water and you add 10.00 mL of water to this bucket. How much water is in the bucket.

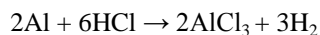
54. If a person came walking by how much water would they say is in the bucket.

55. 125 ft  $\rightarrow$  \_\_\_\_\_ in

56. .25 miles  $\rightarrow$  \_\_\_\_\_ yards

57. 126 miles  $\rightarrow$  \_\_\_\_\_ inches

58. 2 gallons  $\rightarrow$  \_\_\_\_\_ pints



59. If you consume 50 Al atoms, how many  $\text{H}_2$  will you consume and how many each product will be produced?