

NAME
CHEMISTRY MONSTER REVIEW PACKET

FORMULA	NAME
19. KMnO_4	potassium permanganate
$\text{Cu}^{+2}\text{Cl}^{-1}$	20. CuCl_2 copper (II) chloride
21. $\text{H}_2\text{S}_{(aq)}$	
22. $\text{H}_3\text{PO}_{4(aq)}$	
23. SF_6	sulfur hexafluoride
NAME	FORMULA
24. Copper(II)nitrate	$\text{Cu}^{+2}\text{NO}_3^{-1}$ $\text{Cu}(\text{NO}_3)_2$
25. Oxygen tetrafluoride	OF_2
26. Hydrofluoric acid	
27. Sulfuric acid	
28. Sodium sulfate	$\text{Na}^{+1}\text{SO}_4^{-2}$ Na_2SO_4

Organic/Introductory

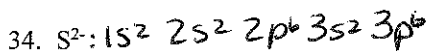
29. Propane burns in oxygen, Draw a Lewis structure of propane. C_3H_8
 $3(4) + 8 = 20e^-$
 $\begin{matrix} \text{H} & \text{H} & \text{H} \\ | & | & | \\ \text{H}-\text{C} & -\text{C} & -\text{C}-\text{H} \\ | & | & | \\ \text{H} & \text{H} & \text{H} \end{matrix}$
30. Indicate 1 indicator that this would be a chemical reaction? energy change, gas evolve,
31. Draw out the structure of a 4 carbon alcohol. Draw each isomeric version.

Atomic structure

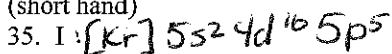
32. (2 points each)

ELEMENT	SYMBOL	# PROTONS	# e	¹ on	Atomic #	mass #	charge
Iron	<u>Fe</u>	<u>26</u>	<u>26</u>	<u>31</u>	<u>26</u>	57	0
Zirconium	<u>Zr</u>	<u>40</u>	39	93	<u>40</u>	133	+1
silver	<u>Ag</u>	<u>47</u>	<u>49</u>	<u>61</u>	<u>47</u>	108	-2
Manganese	<u>Mn</u>	<u>25</u>	25	29	<u>25</u>	54	0

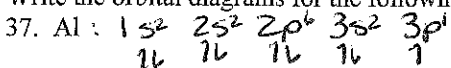
Write the electron configuration for the following (Two points)
(long hand)



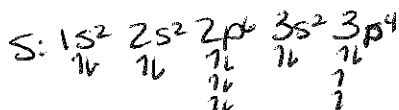
(short hand)



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



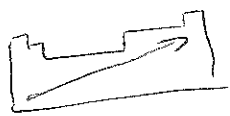
38. S



TRENDS OF THE PERIODIC TABLE

39. Rank in order of ionization energy from smallest to largest. Elements: Fr, F, Cl, Mo, Ga
 1 5 4 2 3

smallest
 ↓



40. Adding an electron to an atom will always make it bigger? True/false... Explain
 in same period → e⁻ repel if add period shell → much bigger
41. Adding a proton to an atom will always make it bigger? True/false... Explain
 more protons
42. Adding a proton and an electron to an atom will always make it bigger? True/false... Explain
43. What is Coulomb's law? $F = k \frac{q_1 q_2}{d^2}$
44. How does Coulomb's law affect the reactivity of a metal?

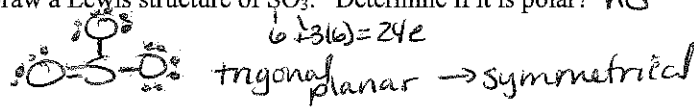
BONDING

Writing ionic formulas

45. Na/Cl Al/Cl Na/Nitrate Ammonium/Cl Al/S



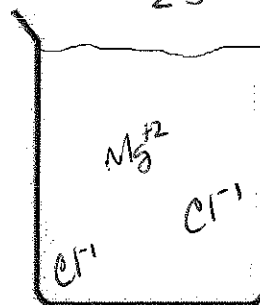
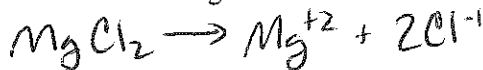
46. Draw a Lewis structure of SO₃. Determine if it is polar? NO



47. What is the name of the substance MgCl₂?

magnesium chloride

48. Draw of picture of MgCl₂ in the beaker to the right.



States of matter

49. A hot air balloon has a volume of 22000L, at STP. What is the number of moles present in the balloon?

$22,000L \div \frac{1 \text{ mol}}{22.4L} = 982 \text{ mol}$

50. If balloon is mostly CO₂, what is the mass of the balloon?

$982 \text{ mol} \times \frac{44 \text{ g}}{1 \text{ mol}} = 43,200 \text{ g}$

51. What is the mass of carbon in the balloon?

$982 \text{ mol} \times \frac{12 \text{ g}}{1 \text{ mol}} = 11,784 \text{ g}$

52. What is the molarity of carbon dioxide in the balloon?

$\frac{982 \text{ mol}}{22,000L} = 0.045 \text{ M } CO_2$

A balloon pictured below has its temperature dropped 1/4 of the original. Draw a particulate diagram of the new balloon.

$\frac{V_1}{T_1} = \frac{V_2}{T_2}$ $\frac{1}{1} = \frac{x}{0.25} \leftarrow 0.25$

53. Calculate the new volume of the balloon.

→ 1/4 of original volume

54. How has the average kinetic energy changed?

Smaller, less movement

55. How has the pressure changed between the two balloons?

No - pressure constant

56. How has the density of the balloon changed?

increased

= to outside pressure

→ same mass/less volume

