

CHEM 1050 Homework
Exam #2 Assignment-Solutions
Alan D. Earhart

- 4.5 a. sodium and chlorine b. calcium, sulfur, and oxygen
 c. carbon, hydrogen, chlorine, nitrogen, and oxygen
 d. barium chromium, and oxygen
- 4.8 a. group 1a b. period 2 c. group 8a d. group 7a
- 4.10 You can look them up in the table.
 a. alkaline earth metal b. transition metal c. halogen d. alkali metal
- 4.11 a. carbon b. helium c. sodium d. calcium e. aluminum
- 4.13 a. metal b. nonmetal c. probably a metal d. nonmetal e. nonmetal
- 4.16 a. neutron b. proton or neutron c. electron d. electron
- 4.17 The mass of the nucleus is located in a small region of space inside an atom.
- 4.19 a. true b. true c. true d. false
- 4.22 Since they attract each other they must have opposite charges.
- 4.23 a. atomic number b. mass number and atomic number
 c. mass number d. atomic number
- 4.28 a. 6 b. 9 c. 50 d. 28

4.30

Name of Element	Symbol	Atomic Number	Mass Number	Number of Protons	Number of Neutrons	Number of Electrons
nitrogen	N	7	15	7	8	7
calcium	Ca	20	42	20	22	20
strontium	Sr	38	88	38	50	38
silicon	Si	14	30	14	16	14
barium	Ba	56	138	56	82	56

- 4.31 a. protons = 38, neutrons = 51, electrons = 38
 b. protons = 24, neutrons = 28, electrons = 24
 c. protons = 16, neutrons = 18, electrons = 16
 d. protons = 35, neutrons = 46, electrons = 35
- 4.34 a. $^{18}_8\text{O}$ b. ^9_4Be c. $^{53}_{25}\text{Mn}$ d. $^{24}_{11}\text{Na}$ e. $^{60}_{28}\text{Ni}$

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- 4.48 a. group 1a, 1 b. group 4a, 4 c. group 8a, 8
 d. group 3a, 3 e. group 2a, 2 f. group 7a, 7

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6.2 a. 1 b. 2 c. 3 d. 1 e. 2

6.4 a. 2, gained b. 2, lost c. 1, gained d. 1, lost e. 1, lost

6.8 a. F⁻ b. Ca²⁺ c. Na⁺ d. I

6.9 Look for metal-nonmetal, a and c

6.11 a. Na₂O b. AlBr₃ c. Ba₃N₂ d. MgF₂ e. Al₂S₃

6.14 a. Ca²⁺, calcium ion Cl⁻, chloride ion CaCl₂
 b. Rb⁺, rubidium ion S²⁻, sulfide ion Rb₂S
 c. Na⁺, sodium ion P³⁻, phosphide ion Na₃P
 d. Mg²⁺, magnesium ion O²⁻, oxide ion MgO

6.16 a. magnesium chloride b. potassium phosphide c. lithium sulfide
 d. cesium fluoride e. magnesium oxide f. strontium bromide

6.17 a. iron(II) ion b. copper(II) ion c. zinc ion
 d. lead(IV) ion e. chromium(III) ion f. manganese(II) ion

6.19 a. tin(II) chloride b. iron(II) oxide c. copper(I) sulfide
 d. copper(II) sulfide e. cadmium bromide f. mercury(II) chloride

6.21 a. Au³⁺ b. Fe³⁺ c. Pb⁴⁺ d. Sn²⁺

6.26 a. ZnBr₂ b. Fe₂S₃ c. MnO₂
 d. CrI₃ e. Li₃N f. Au₂O

6.31

	NO ₂ ⁻	CO ₃ ²⁻	HSO ₄ ⁻	PO ₄ ³⁻
Li ⁺	LiNO ₂	Li ₂ CO ₃	LiHSO ₄	Li ₃ PO ₄
Cu ²⁺	Cu(NO ₂) ₂	CuCO ₃	Cu(HSO ₄) ₂	Cu ₃ (PO ₄) ₂
Ba ²⁺	Ba(NO ₂) ₂	BaCO ₃	Ba(HSO ₄) ₂	Ba ₃ (PO ₄) ₂

6.34 a. Al(ClO₃)₃ b. (NH₄)₂O c. Mg(HCO₃)₂
 d. NaNO₂ e. Cu₂SO₄

6.36 a. cobalt(II) phosphate b. magnesium sulfate c. copper(II) oxide
 d. tin(II) fluoride e. strontium carbonate

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- 6.41 a. phosphorus tribromide b. dichlorine monoxide
c. carbon tetrabromide c. hydrogen fluoride or hydrogen monofluoride
d. oxygen difluoride e. nitrogen trifluoride
- 6.45 a. CCl_4 b. CO c. PCl_3 d. N_2O_4