Hw. week 5 Chem. 6A CSUS S05

Ch. 6

28. Formulas for:

(a)	sodium chromate	Na_2CrO_4
(b)	magnesium hydride	MgH_2
(c)	nickel(II) acetate	$Ni(C_2H_3O_2)_2$
(d)	calcium chlorate	$Ca(ClO_3)_2$
(e)	lead(II) nitrate	$Pb(NO_3)_2$
(f)	potassium dihydrogen phosphate	KH_2PO_4
(g)	manganese(II) hydroxide	$Mn(OH)_2$
(h)	cobalt(II) hydrogen carbonate	$Co(HCO_3)_2$
(i)	sodium hypochlorite	$NaClO$
(j)	arsenic(V) carbonate	$As_2(CO_3)_5$
(k)	chromium(III) sulfite	$Cr_2(SO_3)_3$
(l)	antimony(III) sulfate	$Sb_2(SO_4)_3$
(m)	sodium oxalate	$Na_2C_2O_4$
(n)	potassium thiocyanate	$KSCN$

39. Naming compounds

(a)	$Ba(NO_3)_2$, barium nitrate	(f)	$BiCl_3$, bismuth(III) chloride
(b)	$NaC_2H_3O_2$, sodium acetate	(g)	NiS, nickel(II) suflide
(c)	PbI_2, lead(II) iodide	(h)	$Sn(NO_3)_4$, tin(IV) nitrate
(d)	$MgSO_4$, magnesium sulfate	(i)	$Ca(OH)_2$, calcium hydroxide
(e)	$CdCrO_4$, cadmium chromate		

41. (a) $AgNO_3 + NaCl \longrightarrow AgCl + NaNO_3$

(b) $Fe_2(SO_4)_3 + Ca(OH)_2 \longrightarrow Fe(OH)_3 + CaSO_4$

(c) $KOH + H_2SO_4 \longrightarrow K_2SO_4 + H_2O$

Ch. 4

11. (a) physical (d) chemical

(b) physical (e) chemical

(c) physical (f) chemical

18. (a) potential energy (d) kinetic energy

(b) potential energy (e) potential energy

(c) kinetic energy

21. (a) + (d) +

(b) − (e) −

(c) +

24. $E = (m)(\text{specific heat})(\Delta t)$

$= (65\ g)(0.473\ J/g°C)(95°C - 25°C)$

$= 2.2 \times 10^3\ J$

32. $E = (m)(\text{specific heat})(\Delta t)$

$= (250.\ g)(0.096\ cal/g°C)(150.0°C - 24°C)$

$= 3.0 \times 10^3\ cal$

35. $(7000.\ cal)(4.184\ J/cal) = 29290\ J$

heat lost by coal = heat gained by water x = mass of coal in g

$4.0\ L\ H_2O = 4.0 \times 10^3\ g\ H_2O$

ch. 5

1.

	Element	Atomic number
(a)	copper	29
(b)	nitrogen	7
(c)	phosphorus	15
(d)	radium	88
(e)	zinc	30

6. Isotopes contain the same number of protons and the same number of electrons. Isotopes have different numbers of neutrons and thus different atomic masses.

12. (a) The nucleus of the atom contains most of the mass since only a collision with a very dense, massive object would cause an alpha particle to be deflected back towards the source.

(b) The deflection of the positive alpha particles from their initial flight indicates the nucleus of the atom is also positively charged.

(c) Most alpha particles pass through the gold foil undeflected leading to the conclusion that the atom is mostly empty space.