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Unit 3 Review

41) a) Li and S
c) Al and O
e) I and K

42) a) Ca^{2+} , F^-
b) Al^{3+} , Br^-
c) Li^+ , O^{2-}
d) Al^{3+} , S^{2-}
e) K^+ , N^{3-}

43) The positive charges balance the negative charges (equal to zero)

44) a, b, d

45) a) K^+ , Cl^-
b) Ba^{2+} , SO_4^{2-}
c) Mg^{2+} , Br^-
d) Li^+ , CO_3^{2-}

46) Their network of electrostatic attractions and repulsions forms a rigid structure

47) Ions are free to move in molten MgCl_2

48) They have many mobile valence electrons. Electrons in the current replace the electrons leaving the metal.

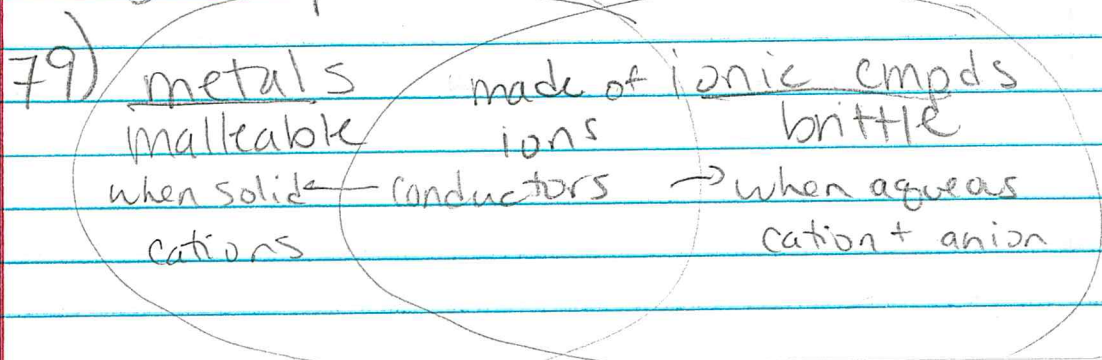
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52) Group #	Val e ⁻ lost/gained	formula of ion
1	1	Na ⁺
2	2	Ca ²⁺
13	3	Al ³⁺
15	3	N ³⁻
16	2	S ²⁻
17	1	Br ⁻

(67) not ionic a, c, e, f

75) NaCl, sodium chloride is composed of equal numbers of sodium ions and chloride ions; the ions are in a 1:1 ratio. Each sodium ion is surrounded by chloride ions, and each chloride ion is surrounded by sodium ions

78) Metals are ductile (drawn into wires) and malleable (can be hammered into shapes). These changes are possible because a metal consists of metal cations in a sea of valence electrons. When subjected to pressure, the cations easily slide past one another



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44) a) barium ion b) iodide ion
c) silver ion d) mercury (II) ion

45) cyanide CN^- , hydroxide OH^-

46) a) hydroxide ion
b) lead (IV) ion
c) sulfate ion
d) oxide ion

51) a and b

52) when more than a single polyatomic ion is needed to balance the formula

53)	NO_3^-	CO_3^{2-}	CN^-	PO_4^{3-}
NH_4^+	NH_4NO_3	$(NH_4)_2CO_3$	NH_4CN	$(NH_4)_3PO_4$
Sn^{4+}	$Sn(NO_3)_4$	$Sn(CO_3)_2$	$Sn(CN)_4$	$Sn_3(PO_4)_4$
Fe^{3+}	$Fe(NO_3)_3$	$Fe_2(CO_3)_3$	$Fe(CN)_3$	Fe_3PO_4
Mg^{2+}	$Mg(NO_3)_2$	$MgCO_3$	$Mg(CN)_2$	$Mg_3(PO_4)_2$

65) a) $KMnO_4$
b) $Ca(HCO_3)_2$
c) Cl_2O_7
d) Si_3N_4
e) NaH_2PO_4
f) PBr_5
g) CCl_4

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- 69) a) magnesium permanganate
b) beryllium nitrate
c) potassium carbonate
d) dinitrogen tetrahydride
e) lithium hydroxide
f) barium fluoride
g) phosphorus triiodide
h) zinc oxide
i) phosphorous acid (Don't worry)

- 70) a) CaBr_2
b) AgCl
c) Al_4C_3
d) NO_3
e) $\text{Sn}(\text{CN})_4$
f) LiH
g) $\text{Sr}(\text{C}_2\text{H}_3\text{O}_2)_2$
h) Na_2SiO_3

- 181 43) a) F
b) N
c) Mg
d) AS

- 45) a) O
b) F
c) O
d) S