Gen Chem II (CHM 202) Fall 18 Dr. Hahn MWF 10 am Quiz II form A 9/7 F Exam # _____

Name Key Name BA = bad attempt

Sign Print (bc can't read signature)

NA = Not attempted NW = no work

Please **show work on all questions** for **full credit & partial credit**. (20 total pts)

1. Is Ca $(OH)_2$ [(soluble) or (insoluble)] (circle one) in water ? Explain giving the solubilities rules table statements. (4 pts)

OH^- are insoluble + Ca not exception

2. a. Write out the **balanced** molecular equation for the reaction below by filling in the blanks.

$CaCl_2 + 2\,NaOH \rightarrow$ $Ca(OH)_2$ + $2\,NaCl$ (2 pts each blank, 4 pts) BA -2

attempt -½ pt (s) rewrote reactant -4

b. Write out the total ionic equation for the reaction shown above. (6 pts)

$Ca^{+2} + 2Cl^- + 2Na^+ + 2OH^- \longrightarrow Ca(OH)_2 + 2Na^+$

attempt -½ BA -3 (s) $+ 2Cl^-$

3. Give the oxidation states of the circled element. Show work or explain where you got the number. (3 pts each, 6 pts total) Unrelated answer -3 each

Ca 0 element in stable state has zero

(N)O_3^- _____ (ox state N) $+ 3(-2) = -1$ attempt -1½ pt

Extra Credit: (2 pts each, 4 pts) (Nox state) $= -1 + 6 = +5$

1. If you dissolve 5.62 grams of the compound Na_2O in 92.7 mL of solution, show your work for calculation of Molarity of the solution. (FW of Na_2O = 62.00 grams/mol) (M = moles/liter)

BA -1 attempt -½ 5.62 g Na_2O ½ pt / 92.7 mL × ½ pt mol Na_2O / 62.00 g Na_2O × 1000 mL / L = 0.978 M ½ pt

2. If you take 12.5 mL of the solution which you made above and dilute it to make up 250.6 mL of solution, what is the new molarity of the diluted solution ? Show work. ($M_iV_i = M_fV_f$)

BA -1 attempt -½ $(0.978\,M)(12.5\,mL) = M_f(250.6\,mL)$

$0.0488\,M = M_f = (0.978\,M)(12.5\,mL)/(250.6\,mL)$

Gen Chem II (CHM 202) Fall 18 Dr. Hahn MWF 10 am Quiz II form A 9/7 F Exam # _____

Name _____ Name _____
Sign Print (bc can't read signature)

Please **show work on all questions** for **full credit & partial credit**. (20 total pts)

1. Is Ca $(OH)_2$ [(soluble) or (insoluble)] (circle one) in water ? Explain giving the solubilities rules table statements. (4 pts)

2. a. Write out the **balanced** molecular equation for the reaction below by filling in the blanks.

$Ca\ Cl_2 + \ 2\ Na\ OH \rightarrow$ _____ + _____ (2 pts each blank, 4 pts)

b. Write out the total ionic equation for the reaction shown above. (6 pts)

3. Give the oxidation states of the circled element. Show work or explain where you got the number. (3 pts each, 6 pts total)

Ca _____

$\textcircled{N}O_3^-$ _____

Extra Credit: (2 pts each, 4 pts)

1. If you dissolve 5.62 grams of the compound Na_2O to make up 92.7 mL of aq solution, show your work for calculation of Molarity of the solution. (FW of Na_2O = 62.00 grams/mol) (M = moles/liter)

2. If you take 12.5 mL of the solution which you made above and dilute it to make up 250.6 mL of solution, what is the new molarity of the diluted solution ? Show work. ($M_iV_i = M_fV_f$)