Chemistry (Last Packet)

Day	Date	Quiz/Video	Is it done?	Assignment	Is it done?
Monday	5/18/2020			Take problems final - part 1 (1st half - to 31)	
Tuesday	5/19/2020			Take problems final - part 1 (2nd half - to 67)	
Wednesday	5/20/2020	PF		practice final - part 2 (1st half - to 91)	
Thursday	5/21/2020	PF		practice final - part 2 (2nd half - to 109)	
Friday	5/22/2020			Take problems final - part 2 (1st half - to 91)	
Monday	5/25/2020	NO SCHOOL			
Tuesday	5/26/2020			Take problems final - part 2 (2nd half - to 109)	
Wednesday	5/27/2020	PF		practice final - part 3 (1st half - to 132)	
Thursday	5/28/2020	PF		practice final - part 3 (2nd half - to 150)	
Friday	5/29/2020			Take problems final - part 3 (all in 1 day - ran out of days)	
Monday	6/1/2020	ONCE SENIORS ARE DONE, WE ARE DONE - WE DID EVERYTHING THAT I USUALLY DO IN A YEAR			
Tuesday	6/2/2020	ONCE SENIORS ARE DONE, WE ARE DONE - WE DID EVERYTHING THAT I USUALLY DO IN A YEAR			
Wednesday	6/3/2020	ONCE SENIORS ARE DONE, WE ARE DONE - WE DID EVERYTHING THAT I USUALLY DO IN A YEAR			
Thursday	6/4/2020	ONCE SENIORS ARE DONE, WE ARE DONE - WE DID EVERYTHING THAT I USUALLY DO IN A YEAR			
Friday	6/5/2020	ONCE SENIORS ARE DONE, WE ARE DONE - WE DID EVERYTHING THAT I USUALLY DO IN A YEAR			
How many total did you do:					

Zoom session happen Mon/Wed/Fri at 1:00 for those needing any help

Name_____ Chemistry Final, Problems, Part 1

1-5. How many significant digits are there?

80 $\bar{0}$00	5000	.3200	.00065	434.000

6-10. Make there be three significant digits

.73456	3	338.5	567 891	.0003

11-16. Perform the operation, expressing your answer with the proper number of significant digits

84.354 + 5.12	84.43 x 300	82.234 - 18.3
86.43 / 1005.1	88 000 + 1809	830 x 43.2

17-8. Write in scientific notation

955 000 000 000	.000 000 000 965

19-28. Convert. Give an answer with three significant digits and a unit.

9.6 Gm to m	460 000 m to hm
8.3 cm to m	.03 m to dm
76.3 km to nm	2.95 km to mm
66 C to F	13 F to C
563 K to C	234 C to K

29. How far is 8 miles in inches? (5280 feet in a mile)

30. How long is 7 years in seconds? (365 days in a year)

31. How far is 60 cubits in yards? (18 inches in a cubit)

32. How far is 4 yards in meters? (2.54 cm = 1 inch)

33. If a sample has a mass of 324 g and a density of 1.48 g/mL, what is its volume in mL?

34. If a sample has a volume of 23 mL and a density of 2.34 g/mL, what is its mass in g?

35. How many mL of bromine should you use if you need .149 kg (the density is 3.12 g/mL)?

36. What is the mass in kg of 202 mL of glycerine (the density is 1.26 g/mL)?

37. What is the volume in liters of 303 g of benzene (the density of benzene is .88 g/mL)?

38-42 Put E for element, C for compound, S for solution, M for mixture (heterogeneous), or H for homogeneous mixture.

salt Mountain Dew radon air a pizza

43-6 Put PP for physical property, CP for chemical property, PC for physical change, or CC for chemical change.

a metal bar can be bent melting ice burning paper a cake can be baked

47. Chlorine-35 has a mass of 34.97 amu. Chlorine-37 has a mass of 36.97 amu. Chlorine has a mass of 35.46 amu. What is more common, chlorine-35 or chlorine-37? Why?

48. One isotope of an element has a mass of 37 amu and an abundance of 25%. Another isotope has a mass of 39 amu and an abundance of 75%. What is the atomic mass of that element?

49-52 Identify each as a metal (M), nonmetal (N), or metalloid (D).

Strontium Aluminum Silicon Krypton

53. Indicate the number of valence electrons for phosphorus

54-5. Which element is more metallic? Why?

Potassium or Calcium

Sodium or Lithium

56. Write the electron-dot formula for $^{209}_{84}Po$

57. What is the atomic number for calcium?

58. What is the atomic mass for calcium?

59. Give the symbol for the third chalcogen.

60. Give the symbol for the fourth element in the last group.

61. Give the symbol for the third element in the last period.

62. Give the symbol for the element with an atomic mass of 101.

63. Give the symbol for the element with an atomic number of 101.

64. Diagram the structure, indicating the number of protons and neutrons in the nucleus, and arrange the electrons in principal energy levels for $^{96}_{44}Ru$

65. Write the electronic configuration in sublevels for $^{105}_{46}Pd$

66-7. Write the Lewis structures.

HCN

SO_4^{2-}

Name_____ Chemistry Final, Problems, Part 2

68-72. Name the compound.

P_4O_6 Li_2SO_3 CaO P_2S_5 FeF_2

73-8 Write the formula for the compound

calcium cyanide sodium sulfate dinitrogen tetroxide

diphosphorus pentasulfide potassium oxide copper (II) bromide

79-81. Name the acid.

$HClO_4$ $HClO_2$ HBr

82-4. Write the formula for the acid.

Hydrophosphoric acid acetic acid sulfurous acid

85-7. Put A for all acids, B for bases, and S for salts.

$H_2Cr_2O_7$ $Sr(OH)_2$ $MgCl_2$

88. Find the molecular or formula mass of $Ba(C_2H_3O_2)_2$. Round to the tenths place.

89. Find the molar mass of $CaCl_2$. Round to the tenths place.

90. Find the number of moles of aluminum in 1.56 g of aluminum.

91. Find the number of moles of sulfur in 2.34 kg of sulfur.

92. Find the number of moles of chlorine in 3.33 moles of iron (III) chloride

93. Find the number of moles of sodium in 4.44 g of sodium carbonate.

94. Find the number of moles of sodium in 5.55×10^{24} atoms of sodium.

95. Find the number of grams of carbon dioxide in 6.45 moles of carbon dioxide

96. Find the number of grams of potassium in 6.66×10^{24} atoms of potassium.

97. Find the number of milligrams of potassium in .00777 mol of potassium

98. Find the number of atoms in .888 mol of oxygen atoms

99. Find the number of molecules in 99 g of carbon dioxide

100. Find the number of moles of gas in 88.8 L of gas at STP.

101. Find the number of moles of oxygen gas molecules in 777 mL of oxygen (O_2) at STP

102. Find the number of grams of carbon monoxide gas in 66.6 L of carbon monoxide at STP.

103. Find the number of liters at STP occupied by 5.55 g of hydrogen chloride gas.

104. How many gas particles are there in 44.4 L of the gas at STP?

105. How many liters would 3.33×10^{24} particles of gas occupy at STP?

106. Calculate the percent composition of C_2H_6S.

107. Calculate the number of grams of magnesium in 22.2 g of magnesium nitride

108. Determine the empirical formula for a compound that is 19.0% tin and 81.1% iodine.

109. Determine the molecular formula if a compound is 83.7% carbon and 16.3% hydrogen and has a molecular mass of 129 amu.

Name_____ Chemistry Final, Problems, Part 3

110-14. Identify the type of reaction. Balance it also.

$KClO_3 \rightarrow KCl + O_2$

$Mg + N_2 \rightarrow Mg_3N_2$

$FeCl_2 + Na_3PO_4 \rightarrow Fe_3(PO_4)_2 + NaCl$

$MnO_2 + Al \rightarrow Al_2O_3 + Mn$

$HCl + NaOH \Rightarrow NaCl + H_2O$

115-9. Complete and balance the equation

$Al + HCl \rightarrow$

$AgNO_3 + H_2S \rightarrow$

$SnCl_2 + H_2S \rightarrow$

$Ca + O_2 \rightarrow$

$BaO + H_2SO_4 \rightarrow$

120. Calculate the number of grams of zinc chloride that can be prepared from 11.1 g of zinc. $Zn + HCl \rightarrow ZnCl_2 + H_2$

121. Calculate the number of kilograms of iron (III) oxide produced by heating 222 g of iron (II) sulfide? $4FeS + 7O_2 \rightarrow 2Fe_2O_3 + 4SO_2$

122. Calculate the number of moles of barium sulfate that can be prepared from 33.3 g of barium chloride. $BaCl_2 + Na_2SO_4 \rightarrow BaSO_4 + 2NaCl$

123. Calculate the number of grams of carbon dioxide produced from the burning of .444 mol of ethane (C_2H_6). $2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$

124. Calculate the number of moles of hydrogen chloride formed from .555 mol of sodium chloride. $2NaCl + H_2SO_4 \rightarrow Na_2SO_4 + 2HCl$

1.7 g of magnesium is treated with 12.3 g of sulfuric acid. $Mg + H_2SO_4 \rightarrow MgSO_4 + H_2$

125. How many grams of hydrogen are produced?

126. If .061 g of hydrogen is actually obtained, what is the percent yield?

127. Calculate the number of moles of excess reagent remaining at the end of the reaction.

128. How many liters of hydrogen sulfide can be prepared from 9.99 g of iron (II) sulfide? $FeS + 2HCl \rightarrow FeCl_2 + H_2S$

129. How many liters of hydrogen can be produced from .888 mol of aluminum? $2Al + 2NaOH + 2H_2O \rightarrow 2NaAlO_2 + 3H_2$

130. How many moles of potassium chlorate can be produced from 7.77 L of chlorine gas? $3Cl_2 + 6KOH \rightarrow 5KCl + KClO_3 + 3H_2$

131. Calculate the number of liters of nitrogen that will react in producing 6.66 L of ammonia. $N_2 + 3H_2 \rightarrow 2NH_3$

132. A gas sample has a volume of 555 mL when measured at 30 C and 640 mm Hg. What is its volume at 30 C and 380 mm Hg?

133. A gas sample has a volume of 444 mL when measured at 30 C and 640 mm Hg. What is the temperature of 585 mL at 640 mm Hg?

134. A gas sample has a volume of 385 mL when measured at 33 C and 640 mm Hg. What is the pressure of 385 mL at 40 C?

135. A gas sample has a volume of 385 mL when measured at 22 C and 640 mm Hg. What is its volume in mL at 50 C and 680 mm Hg?

136. A gas sample has a volume of 111 mL when measured at 40 C and 560 mm Hg. What is its volume in liters at STP?

137. Calculate the volume in liters of .222 mol of gas at 58 C and 2.64 atm.

138. Calculate the pressure in atmospheres of .33 mol of gas occupying 2.5 L at 38 C.

139. Calculate the temperature in Celsius of .44 mol of gas occupying 3.65 L at .877 atm.

140. Calculate the number of moles in 5.55 L of gas at 57 C and .334 atm.

141. Calculate the volume in milliliters of 66.6 g of oxygen gas at 1240 torr and 28 C.

142. Calculate the density of carbon dioxide gas in g/L at 77 C and 2.57 atm.

143. How much heat in kilocalories is given off when 88 g of steam condenses?

144. How much heat in kilojoules is needed to vaporize 999 g of water?

145. How much heat energy in kilojoules is required to vaporize .888 mol of water?

146. What is the melting point of ice when a pressure of 77 atm is exerted on it?

147. How much heat in kilocalories is required to convert 66 g of ice at 0 C to steam at 100 C?

148. How much heat in kilojoules is required to convert 55 g of ice at 0 C to steam at 100 C?

149. How many calories are needed to convert 44 g of ice at -15 C to steam at 120 C?

150. How many calories are given off when .333 kg of water freezes?