Dougherty Valley HS Chemistry Fall Final Exam - Practice Test



This practice test is a general guideline to help you study. It is NOT a definitive list. There are potentially things on here that will not show up on the test, and there are potentially things not on this list that will show up on the test. Material that appeared in Warm Ups, Notes, Homework, Classwork, Labs, Study Materials, etc are all have the potential to appear on the test. **Please time yourself! This practice test should take a maximum of** <u>150 minutes</u> to ensure you are going fast enough to finish the actual Test in class!

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 What is the correct chemical formula for copper(II) oxide? A) Cu₃O₂ B) Cu₂O₃ C) CuO D) CuO₃ E) Cu₃O 	 8. What is the name of the compound whose formula is NO₂ A) Dinitrogen oxide B) Nitrogen oxide C) Nitrogen (V) oxide D) Nitrogen pentoxide E) nitrogen dioxide
2. List the three main subatomic particles.	9. How many protons, electrons, and neutrons,
 3. An example of a chemical change is A) an ice cube melting in a drink B) digesting a pizza C) coffee spilled on a shirt D) boiling alcohol E) grinding coffee beans. 	respectively, does ¹⁰ O have? A) 8, 18, 16 B) 8, 14, 8 C) 8, 18, 8 D) 8, 10, 8 E) 8, 8, 8
 4. With which of the following would fluorine atoms MOST easily combine to form an ionic compound? A) sulfur B) carbon C) oxygen D) chlourine E) Sodium 	 10. How many grams of H₂O will be formed when 32.0 g H₂ is mixed with 80.0 g of O₂ and allowed to react to form water? A) 22.5 g B) 144 g C) 286 g D) 45.0 g E) 90.1 g
 5. The correct formula for iron(III) phosphide is A) FeP₃ B) Fe₃P C) Fe₂P₃ D) FeP E) Fe₃P₂ 	 11. Which of the following atomic symbols is incorrect? A) ³⁹₁₉K B) ¹⁴₈N C) ¹⁴₆C D) ³⁷CI
 6. Consider a certain type of nucleus that has a half-life of 32 min. Calculate the percent of original sample of nuclides remaining after 2.5 hours have passed. A) 40 % B) 3.9 % C) 96.1 % D) 3.2 % 	 In the second second
E) 6.9 %7. Which of the following exhibits the correct orders (large to small) for both atomic radius and ionization energy,	C) 9 D) 27 E) 14
 respectively? A) Te, Br, Se, and Te, Br, Se B) Te, Se, Br, and Br, Se, Te C) Br, Se, Te, and Te, Se, Br D) Se, Br, Te, and Te, Br, Se E) Br, Te, Se, and Se, Te, Br 	 13. Which of the following <i>BEST</i> describes alkali metal? A) They have one valence electron, and they form ions with a 1+ charge. B) They have one valence electron, and they form ions with a 2- charge C) They have one valence electron, and they form ions with a 1- change. D) They have two valence electrons, and they form ions with a 2+ charge.

E) They have two valence electrons, and they form ions with a 2- charge.

14. Which of the following is the atomic number of a halogen?	22. An atom with 15 protons and 16 neutrons is an atom of (A) S
B) 136	B) Pd
C) 27	C) Rh
D) 10	D) P
E) 13	E) Ga
15. The cesium-131 nuclide has a half-life of 30 years. After	
90 years, about 6 g remains. The original mass of the	23. $1s^2 2s^2 2p^0 3s^2 3p^0$ Represents this type of element
cesium-131 sample is closest to	B) Halogens
A) 70 g B) 30 g	C) Alkali Metals
C) $60 g$	D) Metal/Non-metal
D) 40 g	E) Alkaline Earth Metals
E) 50 g	24 Nitrogen Phoenhorus Sulfur Oxygen represent these elements
16 Balance the following equation in standard form and	A) Alkali Metals
determine the sum of the coefficients.	B) Noble Gases
$FeO(s) + O_2(g) \rightarrow Fe_2O_2(s)$	C) Non-metal
A) 7	D) Alkaline Earth Metals
B) 3	E) Halogens
C) 14	25. The cation of table salt is made from one of these types of elements
D) 6	A) Alkaline Earth Metals
E) 4	B) Noble Gases
17. Calculate the molar mass of NaHSO ₄ .	C) Alkali Metals
A) 132 g/mol	E) Halogens
B) 124 g/mol C) 120 g/mol	2) 11110-2010
D) 100 g	26. These elements become more reactive as you decrease their
E) 120 g	atomic number.
18 How many delectrons are there in an iron atom?	A) Alkaline Earth Metals B) Metal/Non-metal
A) 3	C) Halogens
B) 6	D) Noble Gases
C) 26	E) Alkali Metals
D) 56	27 Barium is this type of element
E) 2	A) Metal/Non-metal
19. If a 100g sample of platinum metal has a volume of	B) Halogens
4.668 mL, what is the density of platinum in g/cm^{3} ?	C) Alkaline Earth Metals
B) 0.0467 g/cm^3	D) Noble Gases
C) 467 g/cm^3	E) Alkali Metals
D) 21.4 g/cm^3	28. What type of rxn is $CH_4 + O_2 \rightarrow CO_2 + H_2O$ (unbalanced)
E) none of these	A) synthesis
20. What is the chemical formula for Mercury (I) oxide	B) decomposition
A) Hg ₂ O ₄	C) compution D) single replacement
B) HgO_2	E) double replacement
C) HgO	, <u>1</u>
E) Hg_2O_2	29. The number of neutrons in one stor of $\frac{206}{82}$ Hg is
-/02-	A) 124
21. The prefix "penta" means	B) 82
A) 2 B) 3	C) 288
C) 4	D) 206
D) 5	E) none of these

- A) 2
 B) 3
 C) 4
 D) 5
 E) 1

30. The noble gas electron configuration for Cr^{2+} is

- A) $[Ar]4s^23d^2$
- B) $[Ar]4s^23d^4$
- C) $[Ar]4s^{1}3d^{5}$
- D) [Kr]3d⁴
- $[Ar]3d^4$ E)
- 31. 28g of nitrogen dioxide and 18g of water are allowed to produce nitric acid (HNO₃) and nitrogen monoxide. If 22g of nitric acid are produced what is the percentage yield? A) 100%
 - B) 56.27%
 - C) 86.05%
 - D) 113.64%
 - E) 72.43%

32. Identify the missing particle in the following equation:

4 238 ⁹² U \rightarrow ² He + ? 234 ⁹² U B) 242 94 Pu

C) 234

A)

- ⁹⁰ Th 242
- D) ⁹⁰ Th
- E) none of these

33. According to the following Nuclear Equation,

- $^{238}_{92}U \rightarrow ^{234}_{90}Th +$ ____, which particle is produced? A) ⁴₂He
- β B)
- $+1^{0}\beta$ C)
- D) ${}^{1}_{0}n$
- E) °γ
- 34. When balanced, what is the sum of the coefficients? $Al_2(SO_4)_3+Ca(OH)_2 \rightarrow Al(OH)_3+CaSO_4$
 - A) 3
 - B) 4
 - 9 C)
 - D) 10
 - E) 8
- 35. How many protons are in a neutral atom with the electron configuration below? 1S²2S²2P⁶3S²3P⁴
 - A) 14
 - B) 10
 - C) 12
 - D) 17
 - 16 E)
 - 36. The electron configuration for the sulfur atom is
 - A) $1s^2 2s^2 2p^6 3s^2 3p^4$
 - B) $1s^22s^22p^63s^23p^5$
 - C) $1s^2 2s^2 2p^4$
 - D) $1s^2 2s^2 2p^6 3s^5$
 - E) $1s^22s^22p^63s^23p^2$

- 37. 238 Which of the following is a product of α decay of ⁹² U? A) 238
 - 93 Np
 - 235 B) ⁹² Pu
 - C) 234
 - ⁹⁰ Th D) 238
 - 91 Pa
 - 235 E)
 - 92 U
- 38. Which of the following is an element?
 - A) oxygen
 - B) brass
 - C) earth
 - D) salt
 - E) water
- 39. A particular radioactive element has a half-life of 6.95 days. What percent of the original sample is left after 15.0 days?
 - A) 11.2%
 - B) 22.4%
 - C) 44.8%
 - D) 47.3%
 - E) 77.6%
- 40. Which of the following elements is an alkaline earth metal?
 - A) Cu
 - B) Fe
 - C) Sc
 - Ca D) E) Na
- 41. How many neutrons are contained in an iodine nucleus with a mass number of 131?
 - A) 78
 - B) 53
 - C) 127
 - 131 D)
 - E) 74
- 42. Alpha particles are
 - A) protons
 - B) helium nuclei
 - C) X rays
 - D) neutrons
 - E) electrons
- 43. How many electrons are in the third principal energy level (n = 4) of one atom of Br?
 - A) 18
 - B) 2
 - C) 7
 - D) 17
 - E) none of these

44. How many atoms of hydrogen are in one molecule of CH₃Cl?

- A) 3
- B) 30×10^{23}
- C) 6×10^{23}
- D) 18×10^{23}
- E) 6
- 45. Titanium(IV) oxide has the formula
 - A) Ti(IV)O
 - B) TiO₂
 - C) TiO₄
 - D) Ti_4O_2
 - E) Ti₄O
- 46. Which of the following elements is most similar to lithium?A) Na
 - A) Na B) Hg
 - C) Mg
 - D Au
 - E) He
- 47. The chemical formula for dicarbon hexahydride is
 - A) C₃H₈
 - B) CH₂
 - C) CH₄
 - D) CH
 - E) C₂H₆
- 48. The number of a certain radioactive nuclide present in a sample decays from 160. to 20. in 32 minutes. What is the half-life of this radioactive species?
 - A) 21 minutes
 - B) 16 minutes
 - C) 26 minutes
 - D) 11 minutes
 - E) 6 minutes
- 49. Which of the following has the electron configuration $1s^22s^22p^63s^23p^64s^23d^5$?
 - A) Ca
 - B) Cl
 - C) Br
 - D) Cr
 - E) Mn
- 50. When an electron in the ground state absorbs energy, it goes to a(n) ______ state.
 - A) ionic
 - B) stable
 - C) excited
 - D) lower
 - E) frenetic
- 51. Consider a certain type of nucleus that has a rate constant of $2.10 \times 10^{-2} \text{ min}^{-1}$. Calculate the time required for the sample to decay to one-fourth of its initial value.
 - A) 66.0 min
 - B) 2.10 min
 - C) 41.3 min
 - D) 0.0420 min
 - E) 33.0 min

- 52. A sample of a radioactive element decays to 27.3% of its original amount of radioactive nuclides in 15 years. What is the half-life of this radioactive element?
 - A) 8.7 yearsB) 33. years
 - C) 92.0 years
 - D) 2.5 years
 - E) 8.0 years
 - ______

Use the following to answer question 53: Consider the following molecules.

I.BF₃

II.CHBr₃ (C is the central atom)

- III.Br₂
- IV.XeCl₂ V.CO
- V.CO VI.SF₄

Select the molecule(s) that fit the given statement.

- 53. These molecules follow the octet rule.
 - A) II, III, V
 - B) I, IV, VI
 - C) I, III, IV, VI
 - D) I, II, IV
 - E) III, V, VI

Use the following to answer questions 54-58:

 $\underline{H}_{2}(g) + \underline{CO}(g) \rightarrow \underline{CH}_{3}OH(l)$ 8.60 kg 68.5 kg

- 54. Which of the following sets of coefficients represent those of the balanced equation?
 - A) 1, 1, 1
 - B) 2, 2, 1
 - C) 1, 2, 2
 - D) 2, 1, 2
 - E) 2, 1, 1
- 55. How many moles of the product are produced?
 - A) 8.60 x 10³
 - B) 4.27 x 10³
 - C) 2.14 x 10³
 - D) 2.45 x 10³
 - E) 8.54 x 10³
- 56. What is the percent yield if the actual yield is 3.57 x 10⁴ g?A) 92%
 - B) 88%
 - C) 52%
 - D) 103%
 - E) 76%
- 57. Which of the following is the limiting reagent?
 - A) All are limiting
 - B) CH₃OH (*l*)
 - C) $H_2(g)$
 - D) CO (g)
 - E) None of these

58.	How many grams of the product are produced? A) 2.74×10^5 B) 8.60×10^3 C) 6.86×10^4 D) 1.20×10^5 E) 3.56×10^4	 66. The symbol for the element strontium is A) Str B) Sr C) St D) Sm E) S
59.	 An element has the electron configuration [Kr]5s²4d¹⁰5p². The element is a(n) A) actinide. B) nonmetal. C) lanthanide. D) transition element. E) metal. 	 67. Rutherford's experiment was important because it showed: A) the mass of the atom is uniformly distributed throughout the atom. B) a zinc sulfide screen scintillates when struck by a charged particle. C) an atom is mostly empty space. D) gold foil can be made to be only a few atoms thick. E) radioactive elements give off element particles.
60.	 Which type of rxn: HCl+ KOH→ KCl + H₂O (unbalanced) A) Double Replacement B) Combustion C) decomposition D) Single Replacement E) Synthesis 	 68. When ethane (C₂H₆) is reacted with oxygen in the air, the products are carbon dioxide and water. This process requires mol of oxygen for every 1.13 mol of ethane. A) 2.82 B) 7.91 C) 1.13
61.	How many neutrons are there in one atom of ⁴⁷ ₂₂ Ti? A) 68 B) 46 C) 22 D) 24 E) none of these	 b) 5.09 b) 5.09 c) 3.95 c) Calculate the number of moles in 2.43 kg of Be A) 0.270 B) 27.0 C) 2102
62.	A 42.9-g sample of Ca contains how many calcium atoms? A) 6.45×10^{23} atoms B) 2.58×10^{25} atoms C) 42.9 atoms D) 1.07×10^{0} atoms E) 85.8 atoms	C) 843 D) 270 E) 0.000270 70. $C_3H_8 + \O_2> \CO_2 + \H_2O$ What are the coefficients when you balance the above equation? A) 1,1,1,1 B) 2.6.4.6
63.	A phosphorus atom needs to gain electrons to achieve a noble gas configuration. A) 3 B) 6 C) 2 D) 4 E) 5	 B) 2,0,4,0 C) 4,7,5,2 D) 2,2,2,2 E) 1,5,3,4 71. Suppose the unbalanced reaction Ca₃(PO₄)₂ + H₂SO₄ → CaSO₄ + H₃PO₄ is carried out starting with 103 g of Ca₃(PO₄)₂ and 59.3 g of H₂SO₄. How much
64.	 Which of the following could be an atomic number for a Halogen A) 4 B) 54 C) 35 D) 11 E) 16 	 phosphoric acid (H₃PO₄) will be produced? A) 39.5 g B) 108.0 g C) 65.1 g D) 59.3 g E) 88.9 g
65.	 Which of these is an element? A) brass B) silver C) iron ore D) water E) wood 	 A) 4 B) 8 C) 3 D) 5 E) 6

- 73. How many molecules of CH_4 are in 65 grams of CH_4 ?
 - A) 3.1 x 10²⁴ atoms
 - B) 4×10^{24} atoms
 - C) 2.4 x 10²⁴ atoms
 - D) 1.4 x 10²⁴ atoms
 - E) 2.5×10^{24} atoms
- 74. Antimony can be represented by which of the following noble gas configurations?
 - A) [Kr]5s²4d¹⁰5p⁶
 - B) $[Kr]5s^25d^{10}5p^6$
 - C) $[Kr]5s^24d^{10}5p^5$
 - D) [Kr]5s²4d¹⁰5p³
 - E) [Kr] $5s^25d^{10}5p^5$

75. What is the mass of 8 atom(s) of copper in grams?

- A) 6.022×10^{23} g
- B) 8.44×10^{-22} g
- C) 1.18×10^{21} g
- D) 4.78×10^{-24} g
- E) 508.4 g

76. What type of reaction is Mg + $O_2 \rightarrow$ MgO (unbalanced)? A) Double Replacement

- B) Synthesis
- Single Replacement C)
- D) decomposition
- E) Combustion
- 77.

When ${}^{230}_{90}$ Th decays by producing an alpha particle, the product nuclide is _____

- $^{226}_{87}$ Ra A)
- $^{226}_{88}Fr$ B)
- ²²⁶₈₈Ra C)
- $^{226}_{88}At$ D)
- $^{226}_{89}$ Ra E)

78. What is the sum of the coefficients for the reaction: $2NH_3(g) + 3O_2(g) \rightarrow 2NO_2(g) + 3H_2O(g)$

- A) 16
- B) 21
- C) 10
- D) 13 E) 4
- 79. An atom that has an electron configuration of $1s^22s^22p^63s^23p^6$ is classified as
 - A) an alkali metal
 - B) a halogen
 - C) a transition metal
 - D) an alkaline earth element
 - E) a noble gas element

- 80. Which of the following best describes the "trend" for electronegativity across periods (L->R) and down groups, respectively (periods/groups)?
 - A) Decrease / Increase
 - B) Increase / Increase
 - C) neither
 - D) Decrease / Decrease
 - E) Increase / Decrease
- 81. Phosphoric acid can be prepared by reaction of sulfuric acid with "phosphate rock" according to the equation:

 $Ca_{3}(PO_{4})_{2} + 3H_{2}SO_{4} \rightarrow 3CaSO_{4} + 2H_{3}PO_{4}$

Suppose the reaction is carried out starting with 103 g of $Ca_3(PO_4)_2$ and 75.0 g of H₂SO₄. Which substance is the limiting reactant?

- A) CaSO₄
- B) H₃PO₄
- C) H_2SO_4
- D) $Ca_3(PO_4)_2$
- none of these E)
- 82. Consider the following reaction:
 - $CH_4(g) + 4Cl_2(g) \rightarrow CCl_4(g) + 4HCl(g)$

What mass of CCl_4 is formed by the reaction of 5.17 g of methane with an excess of chlorine?

- A) 795 g
- B) 12.4 g
- C) 49.6 g
- D) 0.54 g
- E) none of these
- 83. An atom with 45 protons has a mass number of 100. It must contain how many neutrons?
 - A) 45
 - B) 100
 - C) 55
 - 145 D)
 - none of these E)
- 84. A homogeneous mixture is also called _____
 - A) a pure substance.
 - B) an element.
 - C) a solution.
 - D) a heterogeneous mixture.
 - E) a compound.
- 85. In the following nuclear equation, identify the missing product:
 - 43 $^{45}_{20}$ Ca + $^{2}\alpha \rightarrow ___+ ^{1}H$
 - A) 4
 - 22 Ti B) 46
 - ²² Ti
 - C) 42 ¹⁸ Ar
 - D) 46
 - ²¹ Sc

86.	The name for NaHCO ₃ is	94. Which formula represents a trigonal pyramidal molecule
	A) sodium(I) hydrogen carbonate	(molecular geometry)?
	B) sodium hydrogen carbonate (sodium bicarbonate)	A) NH ₃
	C) sodium(I) bicarbonate	B) $CaCl_2$
	D) sodium carbonate	C) HBr
	E) none of these	D) CH_4
		E) Br_2
87	Which of the following involves a chemical change?	2) 2.2
07.	A) chopping wood	95 The maximum # of e- allowed in each of the <i>d</i> orbitals is
	B) condensation of water	A) 32
	C) cooking meat	B) 10
	D) melting ice	C 2
	E) boiling water	D) 4
	L) bonning water	$E_{\rm J} = \frac{1}{18}$
88	When magnesium and oxygen form a hond 2 electrons will be	L) 10
00.	A) I ost hy oxygen gained by magnesium	96 Which of the following contains one or more covalent bonds?
	 R) Lost by magnesium gained by oxygen 	A) Co-O
	C) Shared equally	$ \begin{array}{c} \mathbf{A} \\ \mathbf{C} \\ \mathbf$
	C) Shaled equally D) evenly distributed	
	D) evening distributed	C) $DaDl_2$
	E) shared unequally	D) CaO
00		E) NaCl
89.	An example of a mixture is	(7) II (7) (7) (7) (7)
	A) gold	97. How many grams of $Ca(NO_3)_2$ can be produced by reacting
	B) mercury liquid	excess HNO ₃ with 5.65 g of $Ca(OH)_2$?
	C) the air in this room	A) 11.3 g
	D) purified water	B) 25.0 g
	E) hydrogen fluoride	C) 5.65 g
		D) 12.5 g
90.	How many protons, electrons, and neutrons, respectively, does	E) 6.26 g
	$^{27} \text{Al}^{3+} \text{ have}?$	
	A) 13, 10, 14	98. Rank the following bonds from least polar to most polar :
	A) 13, 10, 14 B) 13, 13, 13	98. Rank the following bonds from least polar to most polar : Si-Cl P-Cl Mg-Cl S-Cl
	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl
	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl Cl F-Cl Mg-Cl, Si-Cl
	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl
	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below?
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} →
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na
91.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₂)₃? 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na_(l) + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃
91. 92.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₃)₃? A) 0 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na(1) + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na
91. 92.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₃)₃? A) 0 B) 9 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na_(l) + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃
91. 92.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₃)₃? A) 0 B) 9 C) 1 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃
91. 92.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₃)₃? A) 0 B) 9 C) 1 D) 3 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃
91. 92.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₃)₃? A) 0 B) 9 C) 1 D) 3 E) 4 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation
91. 92.	 A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO₃)₃? A) 0 B) 9 C) 1 D) 3 E) 4 	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H₃PO₄(aq) → Zn₃(PO₄)₂(s) + H₂(g)
91. 92. 93	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2n^2$ How many	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na ₍₁₎ + Al ₂ O _{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ 100. Balance the equation Zn(s) + H ₃ PO ₄ (aq) → Zn ₃ (PO ₄) ₂ (s) + H ₂ (g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule?	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H₃PO₄(aq) → Zn₃(PO₄)₂(s) + H₂(g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule? A) 8	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na ₍₁₎ + Al ₂ O _{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H ₃ PO ₄ (aq) → Zn ₃ (PO ₄) ₂ (s) + H ₂ (g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule? A) 8 B) 5	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na ₍₁₎ + Al ₂ O _{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H ₃ PO ₄ (aq) → Zn ₃ (PO ₄) ₂ (s) + H ₂ (g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule? A) 8 B) 5 C) 2	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na ₍₁₎ + Al ₂ O _{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ 100. Balance the equation Zn(s) + H ₃ PO ₄ (aq) → Zn ₃ (PO ₄) ₂ (s) + H ₂ (g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule? A) 8 B) 5 C) 2 D) 1	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, Ng-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H₃PO₄(aq) → Zn₃(PO₄)₂(s) + H₂(g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule? A) 8 B) 5 C) 2 D) 1 E) 4	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H₃PO₄(aq) → Zn₃(PO₄)₂(s) + H₂(g)
91. 92. 93.	A) 13, 10, 14 B) 13, 13, 13, 13 C) 13, 10, 27 D) 13, 13, 14 E) 13, 13, 27 A stable element will have how many electrons? A) Zero B) 6 C) 8 D) 32 E) 18 How many nitrogen atoms are indicated in Al(NO ₃) ₃ ? A) 0 B) 9 C) 1 D) 3 E) 4 The electron configuration of carbon is $1s^2 2s^2 2p^2$. How many more electrons does carbon need to satisfy the octet rule? A) 8 B) 5 C) 2 D) 1 E) 4	 98. Rank the following bonds from least polar to most polar: Si-Cl P-Cl Mg-Cl S-Cl A) Mg-Cl, S-Cl, P-Cl, Si-Cl B) S-Cl, P-Cl, Mg-Cl, Si-Cl C) S-Cl, P-Cl, Si-Cl, Mg-Cl D) Mg-Cl, Si-Cl, P-Cl, S-Cl E) P-Cl, S-Cl, Si-Cl, Mg-Cl 99. What mass of excess reactant remains at the end of the single displacement reaction below? Na₍₁₎ + Al₂O_{3(s)} → 5.79g 5.30g A) 1.02g Na B) 1.02g Al₂O₃ C) 2.16g Na D) 3.36g Al₂O₃ E) 2.16g Al₂O₃ 100. Balance the equation Zn(s) + H₃PO₄(aq) → Zn₃(PO₄)₂(s) + H₂(g)

Has not been checked! Please tell me if you see typos!!!

Answer Key

1.	С	35. E	70.	E
2.	electron, proton,	36. A	71.	А
	neutron	37. C	72.	В
3.	В	38. A	73.	С
4.	E	39. B	74.	D
5.	D	40. D	75.	В
6.	В	41. A	76.	В
7.	В	42. B	77.	С
8.	Ε	43. C	78.	В
9.	Ε	44. A	79.	E
10.	Ε	45. B	80.	E
11.	В	46. A	81.	С
12.	В	47. E	82.	С
13.	D	48. D	83.	С
14.	А	49. E	84.	С
15.	E	50. C	85.	D
16.	А	51. A	86.	В
17.	С	52. E	87.	С
18.	В	53. A	88.	В
19.	D	54. E	89.	С
20.	E	55. C	90.	А
21.	D	56. C	91.	С
22.	D	57. C	92.	D
23.	А	58. C	93.	E
24.	С	59. E	94.	А
25.	С	60. A	95.	С
26.	С	61. D	96.	В
27.	C	62. A	97.	D
28.	C	63. A	98.	С
29.	Α	64. C	99.	В
30.	E	65. B	100.	3Zn(s) +
31.	С	66. B		$2H_3PO_4(aq) \rightarrow$
32.	C	67. C		$Zn_3(PO_4)_2(s) +$
33.	A	68. E		$3H_2(g)$
34.	С	69. D		