**Honors Chemistry Practice Midterm, Part 1**

1. How many electrons does aluminum have?
2. 13
3. 26.982
4. 27
5. None of these
6. How many neutrons are present in plutonium-243?
7. 94
8. 149
9. 243
10. 244
11. What is the atomic mass of the isotope of ruthenium with 56 neutrons?
12. 44
13. 100
14. 101
15. 112
16. Which of these best explains why elements have different isotopes?
17. Different numbers of neutrons can stabilize the positive charges in the nucleus
18. Different numbers of protons can stabilize the positive charges in the nucleus
19. Different numbers of protons can stabilize the negative charges in the nucleus
20. Different numbers of electrons can stabilize the negative charges in the nucleus
21. The atomic mass of an element is equal to which of these?
22. The number of protons in the atom
23. The number of neutrons in the atom
24. The number of protons + the number of neutrons in the atom
25. The number of protons + the number of electrons in the atom
26. The average atomic mass of an element is equal to which of these?
27. The number of protons in an atom.
28. The average of the atomic masses of all the isotopes
29. The average of the number of neutrons of all the isotopes
30. A weighted average of the atomic masses of all the isotopes
31. What is a continuous spectrum?
32. It’s a pattern of lines given off when an element is heated
33. It’s a pattern of lines given off when electrons fall from an excited state back down to the ground state.
34. It’s a series of colors given off by atoms when they gain energy
35. It’s a rainbow of colors given off when substances are heated.
36. What is an orbital?
37. It’s where electrons live
38. It’s where protons and neutrons live
39. It’s when atoms lose electrons due to the addition of energy
40. More than one of the above is correct.
41. What do we mean when we say that an electron is in a “ground state”?
42. It is in a low energy orbital
43. It is in a medium energy orbital
44. It is in a high energy orbital
45. It has jumped off of the atom to another atom.
46. Which of the following would NOT take place during the flame test?
47. The generation of a line spectrum
48. An excited state orbital is forced to hold three electrons.
49. The colors of light given off correspond to the energy difference between the ground state and excited state.
50. Electrons will fall from excited states back down to their ground states.
51. Which of the following is not characteristic of the Bohr model of the atom?
52. Electrons can be found in orbitals around the nucleus.
53. A maximum of two electrons can be found in an orbital.
54. Orbitals increase in energy as their distance increases from the nucleus.
55. All of the above are characteristic of the Bohr model of the atom.
56. Which of the following is not characteristic of the quantum model of the atom?
57. Electrons can be found in orbitals around the nucleus
58. A maximum of two electrons can be found in an orbital.
59. Orbitals increase in energy as their distance increases from the nucleus.
60. All of the above are characteristic of the Bohr model of the atom.
61. Which of these is the electron configuration of lead (Pb)?
62. 1s2 2s2  2p6 3s2  3p6 4s2  3d10 4p6 5s2  4d10 5d6 6s2  4f14 5d10 6p2
63. 1s2 2s2  2p6 3s2  3p6 4s2  3d10 4p6 5s2  4d10 5d6 6s2  4f14 6d10 6p2
64. 1s2 2s2  2p6 3s2  3p6 4s2  4d10 4p6 5s2  5d10 5d6 6s2  6f14 6d10 6p2
65. None of these are the correct electron configuration of lead.
66. Which of these is the abbreviated electron configuration for osmium?
67. [Xe] 6s2  4f14 5d5
68. [Xe] 6s2  4f14 5d6
69. [Rn] 6s2  4f14 5d5
70. [Rn] 6s2  4f14 5d6
71. What is an orbital filling diagram?
72. It’s a picture that shows where the ground states in an atom are.
73. It’s a picture that shows where the nucleus of the atom is.
74. It’s a picture that shows where the electrons in an atom are.
75. It’s another word for a complete electron configuration.
76. What is the Pauli Exclusion Principle?
77. No two atoms can have the same number of electrons.
78. No two atoms have have electrons with the same four quantum numbers
79. Electrons prefer to remain unpaired whenever possible.
80. Electrons will only pair up when they are in different energy levels.
81. Which of the following is the best definition of “quantitative data”?
82. Data that involves numerical data.
83. Data that involves any observational data.
84. Data that doesn’t involve numerical data.
85. Data that doesn’t use numbers.
86. Which of these is an example of a good hypothesis?
87. If I eat a sandwich, then I have probably been sitting in the sun.
88. If I eat a sandwich, then I will no longer be hungry.
89. If I eat a sandwich containing old mayonnaise, then I will become sick.
90. More than one of the above is an example of a good hypothesis.
91. Which of the following pieces of lab equipment can be used to accurately measure the mass of a liquid?
92. Beaker
93. Graduated cylinder
94. Balance
95. Volumetric flask
96. What piece of lab equipment should always be worn by students?
97. Gloves
98. Apron
99. Dosimeter
100. Goggles
101. Which of the following is NOT an SI base unit?
102. Degree Fahrenheit
103. Kelvin
104. Meter
105. Gram
106. What does the prefix “centi-“ mean?
107. One-millionth
108. One-hundredth
109. One hundred
110. One million
111. If I have 8.7 centigrams, how many kilograms is this?
112. 87 kg
113. 0.87 kg
114. 0.087 kg
115. 0.0087 kg
116. What is the density of a cat that has a mass of 1.4 kg and a volume of 1.3 L?
117. 1.1 kg/L
118. 0.93 kg/L
119. 1.0 kg/L
120. 0.90 kg/L
121. Which of the following is a good definition for precision?
122. How close a measured value is to the actual value of the thing it’s measuring
123. How often a measurement is taken during an experiment.
124. How accurate the significant figures of an experiment are.
125. How often a measured value can be reproduced.
126. How many significant figures does the number 0.040 have?
127. 1
128. 2
129. 3
130. 4
131. Why do chemists use significant figures in their work?
132. To let others know the precision with which the data were collected.
133. To let others know how accurate their data are.
134. To let others know how many digits there are in measured data.
135. To demonstrate a clear knowledge of the experimental procedure.
136. Which of the following is characteristic of a good graph?
137. It has a line going through the origin
138. It always involves time as a variable
139. The independent variable is shown on the x-axis
140. The control variable is shown on the y-axis.
141. Which of these is a heterogeneous mixture?
142. American cheese
143. My annoying neighbor
144. Crisp, refreshing Kool Aid
145. Nitrogen gas
146. Which of these is a physical change?
147. The time I set a pizza on fire in my oven.
148. The time I left my hammer outside and it rusted.
149. The time I found a bird my cat had killed and it had started to decompose.
150. The time I crashed my car into the car in front of me.