

Review Worksheet – Ch 3 (Atoms & Per. Table)

1. most reactive metals _____
2. elements in the far right column of the periodic table _____
3. number of protons in the nucleus of an atom _____
4. sum of protons and neutrons in the nucleus of an atom _____
5. shorthand representation of an element _____
6. electrons in the outermost energy level of an atom _____
7. elements are organized by increasing _____ in the Periodic Table
8. Where are the metals located on the periodic table? Non-metals? Semiconductors?

9. Why does calcium give away 2 electrons during chemical reactions? _____
10. What is the **atomic number** of sulfur? _____
11. The horizontal rows of elements in the periodic table are called _____
12. The vertical columns of elements in the periodic table are called _____
13. List the 6 semiconductors. _____
14. How many valence electrons does phosphorus (P) have? _____
15. What are 2 elements that have 10 neutrons? _____
16. The **isotopes** of carbon differ only in the number of _____ found within the nucleus.
17. What is an atom? Molecule? _____
18. How many valence electrons does an atom of phosphorus have? How do you know?

19. What is magnesium's (Mg) oxidation number? (*What charge does it's ion have?*) _____
20. What is the oxidation number for aluminum (Al)? _____
21. What is neon's (Ne) oxidation number? _____
22. What family of elements are the most stable? Why? _____
23. How many **protons** would K^+ have in its nucleus?
24. How many **neutrons** would K^+ have in its nucleus?
25. How many **electrons total** would K^+ have circling its nucleus? (**BE CAREFUL – notice charge**)
26. How many **valence electrons** would K^+ have? (**BE CAREFUL – notice charge**)
27. Why are elements grouped together in vertical columns? _____
28. What determines the position of the elements in the periodic table? _____
29. Atoms of elements in the same group have the same number of _____
30. What two families are highly reactive? Why?

31. What family is reactive but not highly reactive? Why?
32. Why does magnesium gain its +2 charge?
33. What would the average atomic mass be for the following mixture of isotopes:
50% ^{14}N , 30% ^{15}N , 20% ^{16}N ?
34. Would the following 2 elements be isotopes or different elements? How do you know?
- Element Z has 6 protons and 7 neutrons
 - Element Q has 5 protons and 7 neutrons

-
35. How many valence electrons does helium have? _____
36. An atom of potassium has an atomic mass of 39 and an atomic number of 19. It therefore has _____ neutrons in its nucleus.
37. The order of elements in the periodic table is based on the number of _____ in an atom.
38. Isotopes of an element have the **same** number of _____ in the nucleus.
39. The valence electron of a lithium atom is easily removed to form a lithium _____ with a charge of +1.
40. Negatively charged particles in the outside shell of an atom are called _____.
41. An _____ is an atom with an electric charge.



42. _____ How many molecules are represented by the above formula?
43. _____ How many elements are in the above formula?
44. _____ How many sulfur (S) atoms are in the above formula?
45. _____ How many hydrogen atoms are in the above formula?



46. _____ How many calcium (Ca) atoms are shown above?
47. _____ How many oxygen atoms are in the above formula?

Models: Draw a Bohr Model to represent each of the following atoms / ions.

48. Si

50. S^{-2}

49. Cl

51. K^{+}