

1st Nine Weeks Chemistry Exam Study Guide

1. How does Dalton's Atomic Theory disagree with today's Modern Atomic Theory?
2. A positively charged particle found in the nucleus of the atom is called a(n) _____.
3. The nucleus of most atoms is composed of what particles?
4. Why is an atom electrically neutral?
5. The smallest unit of an element that can exist either alone or in combination with other such particles of the same or different elements is the _____.
6. What causes the isotopes of an atom to be different?
7. Atoms of the same element that have different masses are called _____.
8. The atomic number of oxygen, 8, indicates that there are 8 _____.
9. An aluminum isotope consists of 13 protons, 13 electrons, and 14 neutrons. Its mass number is what?
10. What is the atomic number for aluminum?
11. An atom of potassium has 19 protons and 20 neutrons. What is its mass number?
12. A neutral carbon atom (atomic number 6) has how many protons, neutrons, and electrons?
13. Zinc (atomic number 30) has how many neutrons?
14. Chlorine has atomic number 17 and mass number 35. It has how many protons, neutrons, and electrons?
15. Nickel (atomic number 28) has _____ neutrons.
16. Sulfur (atomic number 16) contains how many protons and neutrons?
17. Neon contains 10 neutrons. It also contains _____ protons.
18. Argon (atomic number 18 and mass number 40) has _____ protons in its nucleus.
19. An electrically neutral atom of mercury (atomic number 80) has how many protons, neutrons, and electrons?
20. The part of the atom where the electrons cannot be found is the what?
21. Calculate the average atomic mass of the following isotopes of oxygen:

Oxygen-16	99.88%
Oxygen-17	0.12%
22. Written in scientific notation, the measurement of 0.000065 cm is _____.
23. Five darts strike near the center of a target. Whoever threw the darts is considered _____.
24. These values were obtained as the mass of products from the same reaction: 8.85 g; 8.84 g; 8/81 g. What is the Da?
25. 0.05 cm is the same as _____ mm.
26. If some measurements agree closely but differ widely from the actual value, these measurements are considered what?
27. The number of grams equal to 0.5 kg is _____.
28. How many significant figures are in 10.292?
29. The measurement that has been expressed to four significant figures is _____.
30. The electrons involved in the formation of a chemical bond are called _____.
31. A chemical bond resulting from the electrostatic attraction between positive and negative ions is called a(n) _____ bond.
32. The chemical bond formed when two atoms share electrons is called a(n) _____ bond.
33. The B-F bond in BF_3 (electronegativity for B is 2.0 and F is 4.0) is _____ bonded.
34. What polarity would the HCl molecule be considered?
35. The ions in an ionic compound are organized into a(n) _____ structure.
36. A chemical bond formed by the attraction between the positive ion and the surrounding mobile electrons is a(n) _____ bond.
37. If a material can be shaped or extended by physical pressure, such as hammering, which property does the material have?

38. VSEPR theory is a model for predicting what?
39. What shape does the NH_3 structure make when covalently bonded?
40. What is the formula for zinc (II) fluoride?
41. What is the formula for tin (IV) chromate?
42. What is the formula for barium hydroxide?
43. Name the compound $\text{Zn}_3(\text{PO}_4)_2$.
44. Name the compound $\text{Hg}(\text{NO}_3)_2$.
45. Name the compound KClO_3 .
46. Name the compound CF_4 .
47. What is the formula for nitrogen monoxide?
48. What is the formula for diphosphorus pentoxide?
49. How many sigma and pi bonds are present in the molecule below?



50. What determines the strength of bonds and the amount of lattice energy needed to break those bonds in an ionic compound?
51. What is resonance when referring to the Lewis dot structure for a polyatomic ion such as NO_3^{2-} ?
52. What is the molar mass of magnesium chloride, MgCl_2 ?
53. The molar mass of NO_2 is 46 g. How many moles of NO_2 are present in 114.9 g?
54. The molar mass of LiF is 26 g. How many moles of LiF are present in 10.37 g?
55. How many atoms are there in 0.5 mol of CO_2 ?
56. What is the percentage composition of CF_4 ?
57. What is the empirical formula for the compound that is 31.9% potassium, 28.9% chlorine, and 39.2% oxygen?
58. The empirical formula for a compound is CH_2O , and the molar mass of the molecule is 180.2 g/mol. Which is the molecular formula for this compound?
59. The empirical formula for a compound shows the symbols of the elements with subscripts indicating the
60. Which of the following molecules shows a tetrahedral arrangement?

