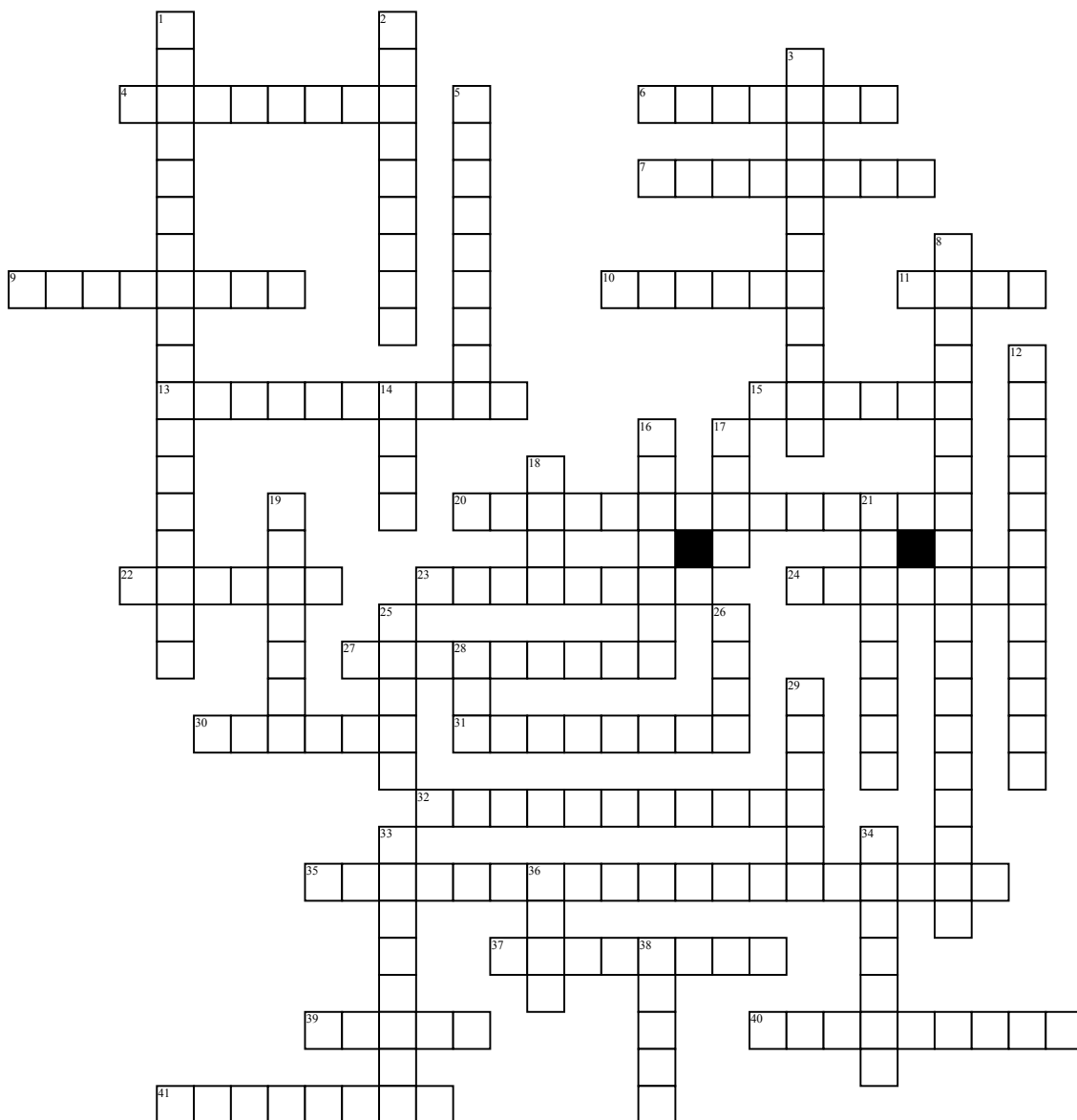


Name: \_\_\_\_\_

Date: \_\_\_\_\_

# CHEM 112 Final Exam Study Guide



## Across

4. A prediction is scientific hypothesis only if it is
6. The number of electrons in an element equals the number of
7. The elements in a(n) \_\_\_\_\_ are always in the same ratio
9. The type of bond formed when two atoms share a pair of electrons is called
10. The radioactivity of \_\_\_\_\_ atoms in non-living materials diminishes slowly
11. A neutron has a charge of
13. \*Mendeleev organized his periodic table based on
15. What type of reaction makes a "hydrogen" bomb so destructive
20. \*A new substance is formed as a result of a
22. The Law of Octaves stated that every \_\_\_\_\_ element had similar properties
23. Atoms that have the same atomic number but different numbers of neutrons are
24. In the fission of uranium-235, which particle causes and propagates the chain reaction
27. Factors that can change during an experiment are called
30. An alpha particle is a \_\_\_\_\_ nucleus
31. Two Isotopes of an element differ in the number of
32. Chemical reactions change the \_\_\_\_\_ of atoms

35. \*Methane (CH<sub>4</sub>) and ethane (C<sub>2</sub>H<sub>6</sub>) illustrate the law of
  37. Group 17 elements are called
  39. How many magnesium atoms are in the formula for magnesium nitride
  40. The atomic radius \_\_\_\_\_ from top to bottom on the periodic table
  41. The highest electronegativity value is shown by
- Down**
1. \*The vertical columns of the periodic table represent elements with similar
  2. A cathode ray tube emits only
  3. Any sample of a compound is
  5. Beta particles are
  8. \*Samples of a specific compound from different sources obey the law of
  12. \*The number of protons represents the
  14. In the famous relationship:  $E=mc^2$ , the symbol  $m$  represents
  16. In order to change one element into another, a change must take place in the
  17. Rutherford used \_\_\_\_\_ foil to study atomic structure
  18. The shape of a water (H<sub>2</sub>O) molecule is
  19. The major part of the average exposure of humans to radiation comes from \_\_\_\_\_ sources
  21. Two isotopes of an element differ in the number of

25. \_\_\_\_\_ rays have zero mass and zero charge
26. An atom of a metal becomes an ion by the \_\_\_\_\_ of one or more electrons
28. When the atom gains an electron, the resulting particle is an
29. Air, water, and rock are examples of
33. The particle which has the smallest mass is the
34. Two solid substances that have been stirred together but not chemically combined
36. The best shielding material against beta radiation is
38. A \_\_\_\_\_ in the periodic table is a vertical column of elements