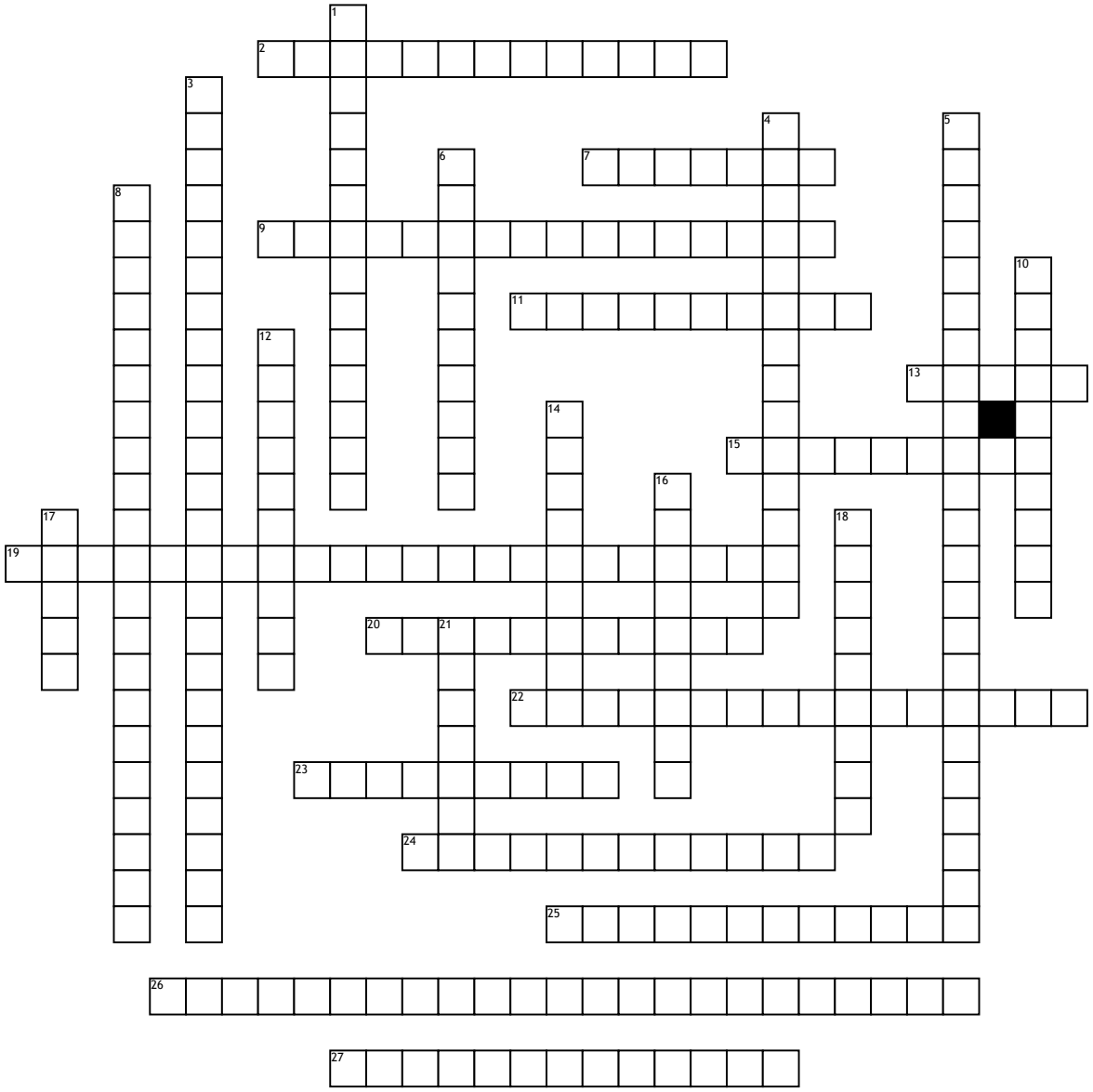
Name: _____ Date: _____

CrossChemWordIstry: Chapter 9



Across

2. The electrons that are not in the outermost principal shell of an atom.

7. The precise amount of energy possessed by a photon; the difference in energy between two atomic orbitals.

9. The total number of electrons in the highest principle quantum level. The electrons in the outermost principal shell of an atom; they are involved in chemical bonding.

11. A rule stating that when filling orbitals of equal energy, electrons will occupy empty orbitals singly before pairing with other electrons.

13. The number of electrons, eight, around atoms with stable Lewis structures.

15. The height of the wave crests in a wave.

19. A number that indicates the shell that an electron occupies.

20. The state of an atom or molecule in which the electrons occupy the lowest possible energy orbitals available.

22. The fraction of the electromagnetic spectrum between the visible region and the X-ray region.

23. A rule that states that an atom will give up, accept, or share electrons in order to achieve a filled outer electron shell, which usually consists of 8 electrons.

24. A fundamental property of all electrons that causes them to have magnetic fields associated with them. The spin of an electron can either be oriented up (+ ½) or down (- ½).

25. An unstable state for an atom or a molecule in which energy has been absorbed but not reemitted, raising an electron from the ground state into a higher energy orbital.

26. A spectrum that includes all wavelengths of electromagnetic radiation.

27. The fraction of the electromagnetic spectrum between visible light and microwaves. Invisible to the human eye.

Down

1. An electron configuration in which electrons are represented as arrows in boxes corresponding to orbitals of a particular atom.

3. A type of energy that travels through space at a constant speed of 3.0 x 108 m/s (186,000 miles/s) and exhibits both wavelike and particlelike behavior.

4. An integer that specifies the energy of an orbital. The greater the distance between the electron and the nucleus and the higher its energy.

5. A principle stating that no more than two electrons can occupy an orbital and that the two electrons must have opposite spins.

6. The part of the electromagnetic spectrum between the infrared region and the radio wave region. Efficiently absorbed by water molecules and can therefore be used to heat water-containing substances.

8. A representation that shows the occupation of orbitals by electrons for a particular element.

10. The distance between adjacent wave crests in a wave.

12. The longest wavelength and least energetic form of electromagnetic radiation.

14. A model for the atom in which electrons travel around the nucleus in circular orbits at specific, fixed distances from the nucleus.

16. The shortest-wavelength, most energetic form of electromagnetic radiation.

17. The portion of the electromagnetic spectrum between the ultraviolet (UV) region and the gamma-ray region.

18. The number of wave cycles or crests that pass through a stationary point in one second.

21. The region around the nucleus of an atom where an electron is most likely to be found.