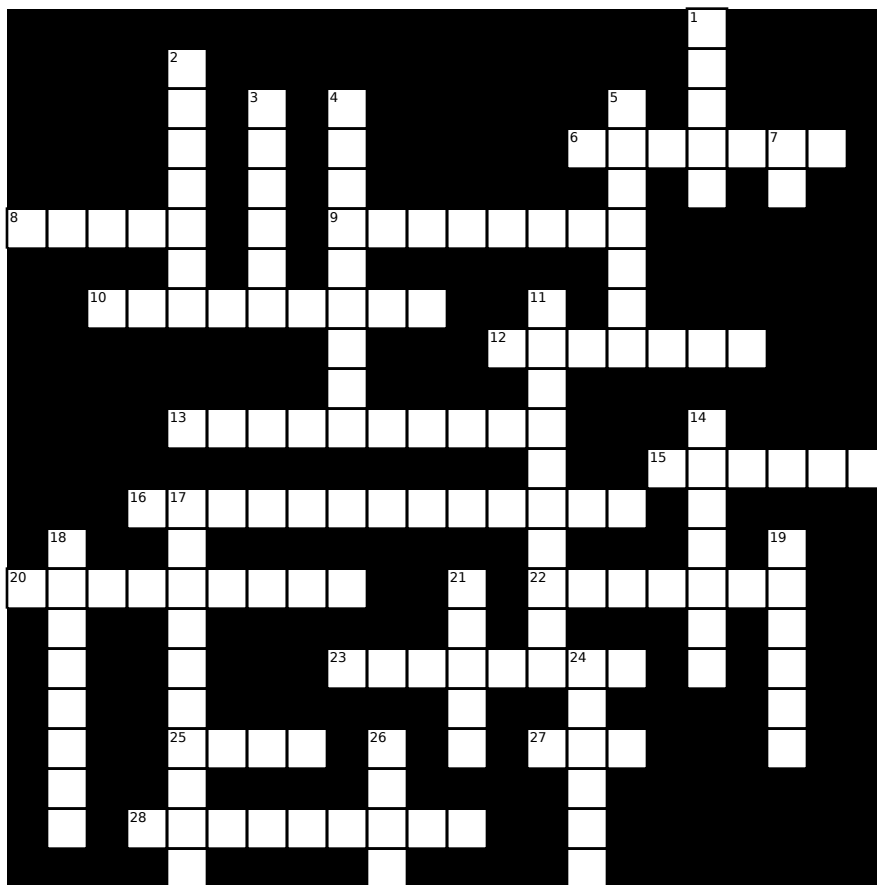


# Chemistry - Chapter 13

## Electrons in Atoms



### Across

- 6 Light quanta are called \_\_\_.
- 8 Only electrons in transition from higher to lower energy levels lose energy and emit \_\_\_.
- 9 When sunlight passes through a prism, the different wavelengths separate into a \_\_\_ of colors.
- 10 Electromagnetic \_\_\_ includes radio waves, microwaves, infrared waves, visible light, ultraviolet waves, x-rays, and gamma rays.
- 12 The \_\_\_ mechanical model comes from the mathematical solutions to the Schrodinger equation.
- 13 The \_\_\_ is the distance between crests on a wave.
- 15 \_\_\_ Principle: Electrons enter orbitals of lowest energy first.
- 16 In the \_\_\_ effect, metal eject electrons called photoelectrons when light shines on them.
- 20 The \_\_\_ of a wave is the wave's height.
- 22 A region where an electron is likely to be found is called an atomic \_\_\_.
- 23 An atom in its lowest energy state is said to be \_\_\_.
- 25 Niels \_\_\_ came up with a new atomic model.
- 27 \_\_\_ light has the longest wavelength.
- 28 \_\_\_ is the number of wave cycles to pass a given point per unit of time.

### Down

- 1 The SI unit of frequency.
- 2 Excitation of the electron raises it to an \_\_\_ state.
- 3 The greek letter \_\_\_ is used to represent wavelength.
- 4 \_\_\_ physics correctly viewed light as a form of energy.
- 5 J.J. \_\_\_ discovered the electron.
- 7 The greek letter \_\_\_ is used to represent frequency.
- 11 Ernest \_\_\_ discovered the nucleus.
- 14 A \_\_\_ of energy is the amount of energy required to move an electron from its present energy level to the next higher one.
- 17 The \_\_\_ uncertainty principle states that it is impossible to know exactly both the velocity and the position of a particle at the same time.
- 18 Passing the light emitted by an element through a prism gives the atomic \_\_\_ spectrum of the element.
- 19 \_\_\_'s constant is represented by the variable h.
- 21 \_\_\_ Exclusion Principle: An atomic orbital may describe at most two electrons.
- 24 The \_\_\_ level of an electron is the region around the nucleus where the electron is likely to be moving.
- 26 \_\_\_'s Rule: When electrons occupy orbitals of equal energy, one electron enters each orbital until all the orbitals contain one electron with parallel spins.