Name _____ Class _____ Date _____

Assessment

Quiz

Section: Electron Configuration

In the space provided, write the letter of the term or phrase that best answers the question.

_____ **1.** Which of the following atomic models could be referred to as the "solar-system" model of the atom?
- **a.** Thompson's plum-pudding model
- **b.** Rutherford model
- **c.** Bohr model
- **d.** quantum model

_____ **2.** According to the Bohr model of the atom, which particles are allowed to exist in any one of a number of energy levels.
- **a.** electrons
- **b.** protons
- **c.** neutrons
- **d.** Both (b) and (c)

_____ **3.** Which of the following atomic models is also referred to as the "electron-cloud" model of the atom?
- **a.** Thompson's plum pudding model
- **b.** Rutherford model
- **c.** Bohr model
- **d.** quantum model

_____ **4.** Which model was developed in an attempt to explain hydrogen's line-emission spectrum?
- **a.** Thompson's plum-pudding model
- **b.** Rutherford model
- **c.** Bohr model
- **d.** quantum model

_____ **5.** The line-emission spectrum of an atom is caused by the energies released when electrons
- **a.** jump from a lower energy level to a higher energy level
- **b.** jump from a higher energy level to a lower energy level
- **c.** jump from the ground state to an excited state
- **d.** None of the above

_____ **6.** Because excited hydrogen atoms always produced the same line-emission spectrum, scientists concluded that hydrogen
- **a.** had no electrons.
- **b.** did not release energy.
- **c.** released energy of only certain values.
- **d.** could only exist in the ground state.

Quiz *continued*

_____ **7.** If electromagnetic radiation **A** has a lower frequency than electromagnetic radiation **B**, then, compared to **B**,
- **a.** the wavelength of **A** is shorter.
- **b.** the energy of **A** is lower.
- **c.** **A** is more particle-like.
- **d.** Both (a) and (c)

_____ **8.** Quantum numbers are sets of numbers that
- **a.** are characteristic only of the hydrogen atom.
- **b.** consist of multiples of 2.
- **c.** specify properties of electrons
- **d.** relate the energies of protons in the atomic nucleus.

_____ **9.** The statement that no two electrons in the same atom can have the same four quantum numbers is a restatement of
- **a.** Bohr's law
- **b.** Hund's rule.
- **c.** the aufbau principle.
- **d.** the Pauli exclusion principle.

_____ **10.** The electron configuration of $^{27}_{13}\text{Al}$ is
- **a.** $1s^2 2s^2 2p^6 3s^1 3d^2$.
- **b.** $1s^2 2s^2 2p^5 3s^2 3p^2$.
- **c.** [Ne] $3s^2 3p^1$.
- **d.** [Ne] $3s^1 3p^1 3d^1$.