Name: _____ Per: _____ Date: _____

Electron Test Study Guide

1. What is the relationship between energy, frequency and wavelength.

2. Light behaves as both a _____ and a _____.
3. What is the photoelectric effect and what did it prove about light?

4. How can we tell what elements make up a distant star?

5. Bohr's model stated that electrons exist on _____. How did he conclude this?

6. How does an atom emit light?

7. The quantum model states that you cannot know both the _____ AND _____ of an electron.
8. Define atomic orbital.
9. Draw the s suborbital and the three p suborbitals.

10. What are the 4 types of orbitals and how many electrons can each shape hold?

11. What is the number in front of the orbital also known as?
12. Write the electron configurations for the following:
    a. Li b. K^+ c. Ni

13. Write the noble gas configuration for the following:
    a. Nb b. Bi^{2-} c. Fr

14. Draw the orbital diagrams for the following elements:
    a. C b. S

    c. Mn d. Cl^-

    e. As f. N

15. What is the Aufbau Principle?
16. What is the Pauli Exclusion Principle?
17. What is Hund's Rule?
18. Are the following ground state or excited state configurations?
    a. $1s^2 2s^2 2p^5 3s^1$ b. $1s^2 2s^2 2p^6$ c. $1s^2 2s^1 2p^6$ d. $1s^2 2s^2 2p^6 3s^1$
    e. $1s^2 2s^1 2p^6 3s^1$ f. $1s^3 2s^2 2p^6$ c. $1s^2 2s^2 2p^6$ d. $1s^2 2s^2 2p^6 3d^1$