Study Guide – Chapter 5 (Models of the Atom) Part 2 and Chapter 6 (Sections 6.4-6.10: Periodic Trends)

gchemchp5SGPt2Corwin.docx

Name: _____ Date: _____ Period: _____

1. The distance between any two consecutive, identical parts of a wave is known as the _____.

2. The number of "cycles" of a wave that pass by a point per unit time is known as the _____.

3. An electromagnetic wave is a _____ (transverse / longitudinal) wave.

4. An electromagnetic wave has two components; an _____ field and a

_____ field at right angles.

5. The term that is used to indicate that electromagnetic waves do not need a medium to travel through is known

as _____.

6. Rank the following regions of the electromagnetic spectrum in terms of increasing energy with 1 being the least energetic and 7 being the most.

Radio _____ Ultraviolet _____ Microwave _____ Gamma _____ Visible _____ Infrared _____ X-ray _____

7. All electromagnetic radiation travels at the same speed of _____(give value).

8. Blue light has a _____ energy than red light.

9. As the energy of electromagnetic radiation becomes greater, the frequency becomes

_____ and the wavelength becomes _____.

10. Einstein showed using the photoelectric effect that light has _____ properties and that its energy is

carried on the _____ of the wave as opposed to "classical" waves where the energy is carried

on the _____ of the wave.

11. Niels Bohr determined that the orbits of electrons around atoms must be _____, meaning that they can only take on certain specific values.

12. Colored lines from an electrically excited gas as seen through a spectroscope are actually _____

_____

13. Louis DeBroglie and Erwin Schrodinger showed that electrons behave like _____

_____ when in motion around an atom.

For each of the following elements give: a) The Bohr Model electron configuration, b) The Wave Mechanical Model electron configuration, c) The spectroscopic (s,p,d,) notation, d) The condensed (core) notation, e) The Lewis Dot representation and f) The spectroscopic notation for the element in its charged isoelectronic noble gas state.

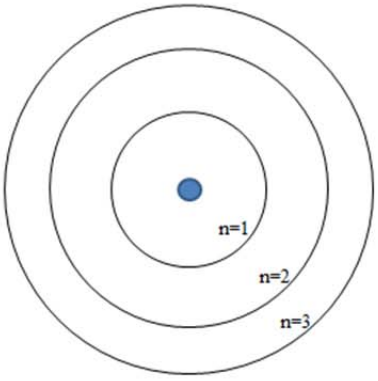
1. Lithium, Li

Spectroscopic: _____

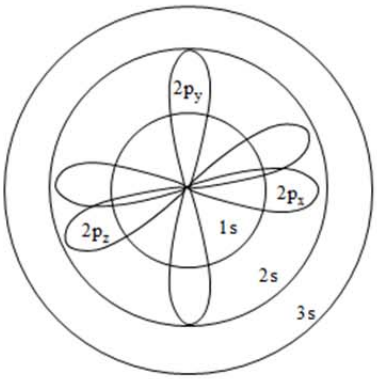
Core: _____

Lewis dot:

Isoelectronic: _____



Bohr Model



Wave Model

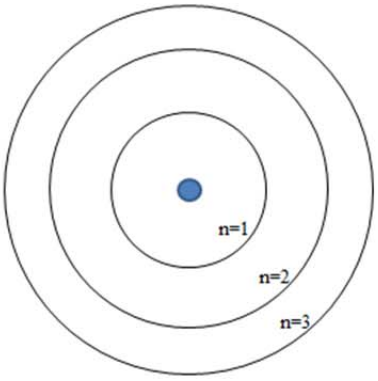
2. Nitrogen, N

Spectroscopic: _____

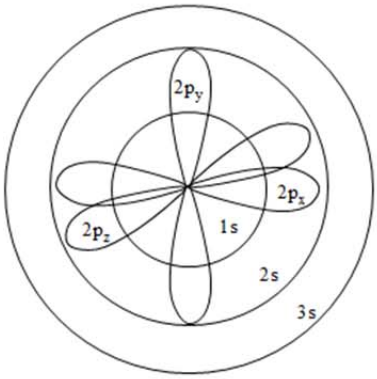
Core: _____

Lewis dot:

Isoelectronic: _____



Bohr Model



Wave Model

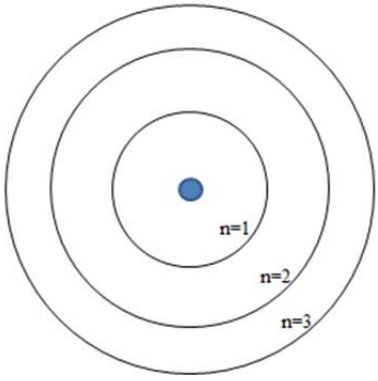
3. Magnesium, Mg

Spectroscopic: _____

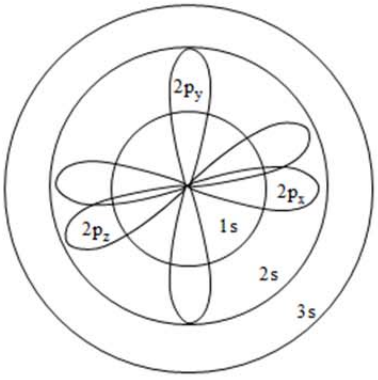
Core: _____

Lewis dot:

Isoelectronic: _____



Bohr Model



Wave Model

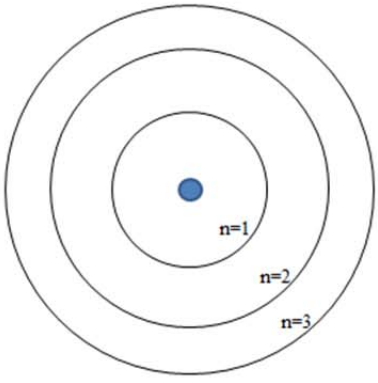
4. Fluorine, F

Spectroscopic: _____

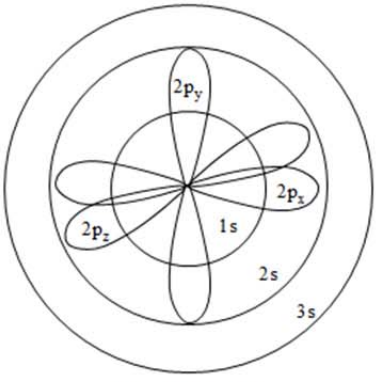
Core: _____

Lewis dot:

Isoelectronic: _____



Bohr Model



Wave Model