Chemistry 115 Name KEY

Dr. Cary Willard

Quiz 7A (20 points) March 31 2009

1. (2 points) How many protons are in the nucleus or a technetium (Tc) atom.

43

1. (3 points) What is the major difference between an orbital and a Bohr orbit?

Bohr orbit says that electron travels in an circular orbit around the nucleus of an atom.

Quantum mechanics says that electrons inhabit a region of space called an orbital.

1. (3 points) Show the orbital diagram for an atom of oxygen.

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1s 2s 2p

1. (3 points) Write the complete electron configuration for an atom of phosphourus.

1s2 2s2 2p6 3s2 3p3

1. (3 points) Write the shorthand electronic configuration (as predicted by the periodic table) for an atom of cobalt.

[Ar] 4s2 3d7

1. (3 points) How many valence electrons does an atom of silicon have?

4

1. (3 points) What do the electron structures of the alkali metals have in common?

They all have the same number of valence electrons.

Chemistry 115 Name KEY

Dr. Cary Willard

Quiz 7B (20 points) March 31, 2009

1. (2 points) How many protons are in the nucleus or a halfnium (Hf) atom.

72

1. (3 points) What is the major difference between an orbital and a Bohr orbit?

Bohr orbit says that electron travels in an circular orbit around the nucleus of an atom.

Quantum mechanics says that electrons inhabit a region of space called an orbital.

1. (3 points) Show the orbital diagram for an atom of nitrogen.

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1s 2s 2p

1. (3 points) Write the complete electron configuration for an atom of magnesium.

1s2 2s2 2p6 3s2

1. (3 points) Write the shorthand electronic configuration (as predicted by the periodic table) for an atom of nickel.

[Ar] 4s2 3d8

1. (3 points) How many valence electrons does an atom of aluminum have?

3

1. (3 points) What do the electron structures of the alkali metals have in common?

They all have the same number of valence electrons.