**Define the following terms Chapter 5, 6, & 7 Review**

1. Ion -

2. Octet Rule -

3. Periodic Law -

4. Period -

5. Group -

**VALENCE ELECTRONS-**

6. Hund’s Rule -

7. Pauli Exclusion Principle -

8. Aufbau Principle -

9. Heisenberg Uncertainty Principle -

10. Photoelectric Effect -

11. Mendeleev -

12. Allotrope -

13. Quantum-

**Know properties of the following elements**

14. Iron -

15. Chlorine -

16. Fluorine -

17. Nitrogen’s main industrial use is to make \_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. Plant’s gain their nitrogen from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. Oxygen has \_\_\_\_\_ allotropes, namely \_\_\_\_ and \_\_\_\_\_\_\_\_

20. Oxygen is the most abundant element in the \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

21. Elements larger than uranium are all \_\_\_\_\_\_\_\_\_\_\_\_\_

**Periodic Trends – define the following and give how they change across a period or down a group**

22. Atomic Radius -

23. Electronegativity -

24. Ionization Energy -

**Give the electron dot structure of the following elements**

25. Lithium 26. Oxygen 27. Tin 28. Bromine 29. Lead

**Determine which elements the following electron configurations represent.**

30. 1s22s22p63s2

31. 1s22s22p63s23p64s23d104p65s24d9

32. [Xe]6s24f145d6

33. [Ar]4s23d104p3

**Give the electron configuration and noble gas notation for the following elements**

34. Nitrogen -

35. Chlorine -

36. Yttrium -

37. Platinum -

38-45. **Label the following periodic table with these terms: Alkali Metals, Alkaline Earth Metals, Halogens, Noble Gases , Transition Metals, Inner Transition Metals, Representative Elements, also label the charge of the most likely ion for each group.**

**Define the following terms Chapter 5, 6, & 7 Review**

1. Ion – element that has gained or lost an electron

2. Octet Rule – all stable elements have 8 valence electrons

3. Periodic Law – the idea that properties repeat regularly as you go down a group on the table

4. Period –a horizontal row on the periodic table

5. Group – a verticle column on the periodic table

**VALENCE ELECTRONS-**

6. Hund’s Rule – electrons don’t share orbitals unless they have to

7. Pauli Exclusion Principle – electrons must have opposite spins to fill the same orbital

8. Aufbau Principle –fill the lowest energy level first

9. Heisenberg Uncertainty Principle – we cannot know the position and momentum of a particle

10. Photoelectric Effect – certain frequencies of light will cause electrons to be emitted from a metal surface

11. Mendeleev –organized periodic table by increasing atomic mass, father of the periodic table

12. Allotrope –the same element with two different crystal structures, ex. Carbon and graphite

13. Quantum- the smallest amount of energy that can be gained or lost by an atom

**Know properties of the following elements**

14. Iron – MAGNETIC, transition metal, etc

15. Chlorine – used in disinfectants and manufacturing of plastics, halogen

16. Fluorine –most reactive element, most electronegative, halogen

17. Nitrogen’s main industrial use is to make \_\_\_ammonia\_\_\_\_\_\_\_\_\_\_\_

18. Plant’s gain their nitrogen from \_\_\_\_\_\_\_\_nitrogen fixating bacteria\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. Oxygen has \_\_2\_\_\_ allotropes, namely \_O2\_\_\_ and \_\_\_\_O­3\_\_Ozone\_\_

20. Oxygen is the most abundant element in the \_\_\_Earth’s Crust\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

21. Elements larger than uranium are all \_\_\_\_Radioactive and Unstable\_\_\_\_\_\_\_\_\_

**Periodic Trends – define the following and give how they change across a period or down a group**

22. Atomic Radius – distance from nucleus to furthest valence, decrease across, increase down

23. Electronegativity – ability to attract electrons, increase across, decrease down

24. Ionization Energy – energy to remove an electron, increase across, decrease down

**Give the electron dot structure of the following elements**

25. Lithium 26. Oxygen 27. Tin 28. Bromine 29. Lead

1 dot 6 dots 4 dots 7 dots 4 dots

**Determine which elements the following electron configurations represent.**

30. 1s22s22p63s2  -Magnesium (Mg)

31. 1s22s22p63s23p64s23d104p65s24d9 – Silver (Ag)

32. [Xe]6s24f145d6 –Osmium (Os)

33. [Ar]4s23d104p3 – Arsenic (As)

**Give the electron configuration and noble gas notation for the following elements**

34. Nitrogen - 1s22s22p3 [He] 2s22p3

35. Chlorine -1s22s22p63s23p5 [Ne] 3s23p5

36. Yttrium -1s22s22p63s23p64s23d104p65s24d1 [Kr] 5s24d1

37. Platinum - 1s22s22p63s23p64s23d104p65s24d105p66s24f145d8 [Xe] 6s24f145d8

38-45. **Label the following periodic table with these terms: Alkali Metals, Alkaline Earth Metals, Halogens, Noble Gases , Transition Metals, Inner Transition Metals, Representative Elements, also label the charge of the most likely ion for each group.**

**+1 +2 +3 +/- 4 -3 -2 -1 0**

**Alkali Metals Halogens**

**Alkaline Earth Metals Noble Gases**

**Transition Metals**

**Representative Elements**

**Inner Transition metals**