Chem final review

Help Room 1-3 Mon GMCS 212 2-4 Thu Final Exam Sat 6-8 pm Room assignments to be determined Alternate times, emailsdsu. edu FINAL EXAM * problems 1-10 exam 1 material * probelsm 11-20 exam 2 material * problems 21-30 exam 3 material * problems 31-35 new material (MO theory from ch 11, ch 12) All Single-choice 10 multiple choice material 2. Which pair of atoms/ions has same # of electrons? 32p and 32s15e 16e- Al 3+ and Cl-10e-18e- Xe and I-54e-54e- 13C 14N6e- 7e- ^ the 13 on C is mass number. = # protons + # neutrons. 3.

N2 + 2 O2 + Cl2 -> 2 NO2 Start with 6 mol N2, 4 mol O2, 4 mol Cl2, Find limiting reagent and amounts remaining of excess reactants N2 + 2 O2 + Cl 2 6 mol 4 mol 4 molstart Max yield x (2mol No, Cl/ 1 mol N2) Of No2Cl = 12 mol 4 mol 8 mol O2 is the limiting reagent. 4 mol of NO2Cl (4 mol NO2Cl) (1 mol N2 / 2mol No2Cl) = 2 mol N2 consumed 6 mol N2 – 2 mol N2 = 4 mol N2 left ^at start^ used up (4 mol NO2Cl) (1 mol Cl2/2mol NO2Cl) = 2 mol Cl2 consumed 4 mol Cl2 – 2 mol Cl2 = 2 mol Cl2 left ^at start^used up 4. What is energy of a 4p electron in Li^2+ ?

E electron = -2. 18 x 10^-18 J (Z^2 / n^2) Z = at. No. n= princ. Quantum# For 1-electron atom E = -2. 18 X 10^-18 J (3^2 / 4^2) = -1. 23 x 10^-18 J 5. Which of the following is not a good resonance structure? 6. How many sigma and pi bonds are in cyanogen : N TripleBOND C – C TRIPLEBOND N: 3 sigma bonds and 4 pi bonds 7. What is the only allowed value of l if n = 3 and ml = -2? l= 2 8. Which bond angle in acetone has a value of 120 degrees? Lewis structure C-C-C is ~ 120 degrees Trigonal planar , ~120 degree angles.