Honors Chem Review Problems Key

a.

b. CHOOH ↔ H+ + CHOO-
c. Ka= [H+] [CHOO-] /[CHOOH]
d. pOH= 11.8 pH = 2.2
e. 2.68% ionized

a. 0.0600 g H2
b. 6.38g CuSO4
c. 0.120 M Mg^{+2}

a. 8.8x10-6 atm
b. 2.83 x10-19
c. delta S = + bc more gases are formed and a solid is turned into a gas

a. C2H4O3
b. 151.7g/mol
c. C4H8O6

a. delta S= (-) bc 2 particles become 1, and gases become a solid
b. Not affected: solids have a constant concentration and do not change the equilibrium

a. Rate= k [NO2]1 [Cl2]1
b. 2^{nd} order overall
c. 2.7x10-4 $M^{-1}sec^{-1}$
d. 2.4 x10-6 M/sec

a. Mg 1s22s22p63s2 Ar 1s22s22p63s23p6
b. Mg -2 dots Ar -8 dots
c. Both IE values continuously increase
d. the 3rd electron of Mg is a core electron, is held more tightly by the atom (more strongly attracted to the nucleus), and requires more energy to remove
e. YCl, gamma chloride-bc it easily loses 1 electron forming a +1 ion

a. H2X → 2H+ + X-2

b. [H3O+]=5.75x10-6M
c. [H2X] = 2.52 x 10 -5M
d. 0.0603 L of solution

a, b, c, d-anode= oxidation = 2Cl-1 → Cl2 + 2e- Electrons flow FROM here cathode = reduction = 2H+ +2e- → H2 Electrons flow TO here

e. i) 5400C (ii) 0.0560 moles of e- (iii) V= 0.628L at STP

a. Mg(OH)2 → Mg+2 + 2OH-1
Ksp= [Mg+2] [OH-]2
b. Ksp= 5.62x10-12
c. pH=10.4
d. [Mg+2] = 1.25x10-3M [OH-1]= 2.68x10-3M
Yes, 8.98x10-9 = experimental Ksp, greater than accepted Ksp

ΔHf:$C_6H_{12}O$=2801kJ

a. -1275 kJ
b. 5.6kJ
c. -2484kJ

a. CO_2= NP, NH_3= polar
b. CO2= sp hybridization NH_3= sp3

a. Anode: $Ba \rightarrow Ba^{+2} + 2e^-$
Cathode: $Cu^{+2} + 2e^- \rightarrow Cu$
c. +3.24, +1.52
d. No, voltage is negative

0.900 J/g^{o}C
Tf=10.9^{o}C

Multiple Choice:

1. d 2. e 3. e 4. e 5. a 6. a 7. b 8. d 9. c 10. e 11. c 12. d

13. b 14. b,e 15. a 16. b 17. e 18. a 19. c 20. d 21. c 22. a 23. a

24. b 25. a 26. c 27. c 28. a 29. a 30. d 31. c 32. 12.0g 33. d

34. 19,300C 35. a 36. d