Answers to 2009 spring lecture test 1. \* starred items are not covered on the 2012 lecture test 1.

1 A 2 D 3 B 4 B 5 E 6. 38 7. M-1/s 8 C 9. A 10. B 11. 0.00800 12. 3.00 L

13. C 14 B 15. H2O2 → H2O + ½ O2 16 Rate = k[H2O2][Br-] 17. Rate = k[H2O2][Br-] /[H2O]

18 C 19 B 20. 0.0676 21 C 22. 0.322 atm 23 A 24 A 25 C 26 B 27 D 28 C

29 10.513 30, 1.398 31. 1.73 32. 11.87 33. 7 \*34. 5.05 35 9.37 36 A 37 N 38 A

39 B 40 0.0676 M

HC2H3O2(aq) + H2O(*l*)  C2H3O2­-  (aq) + H3O+(aq)

Acid base base acid

Reactions tend to go from stronger to weaker. Since this reaction goes mainly BACK, ( acetic is a weak acid) the stronger base must be the acetate ion.

II\* The Co3+ ion is a Lewis acid, because it accepts electron pairs from the ammonia.

III. k= 4.79 x 10-3min-1 B 229 minutes C. Half life is 145 minutes

IV 1.46 atm

V\* H+ is 9.0 x 10—5 pH = 4.05 B. 3.74 C. 2.00

VI. 7.92 x 10—7 B. 1.26 x 10—8 C 2.00 molar

\*VII. 0.699, 1.146, 7, 11.74