Answers to Fall 2008 lecture test 2.

1 + 2. + 3. 0 4. + 5. - 6. − 7. + 8. 1 (UV has shortest wave length)

9. 2 10. 16 11. 48.0 L 12. 66.7 k Pa 13. V 14. S 15. S

16. Ca or Zn 17. B 18. 5p 19. The given delta H is actually wrong, and should have been −464.36, not −434.36. Using the given information, though, gives an answer of -559 kJ. 20. Na 21. C 22. 55 kJ 23. 1 24 2 25 0

26. A 27. C 28. C 29. A 30 B

I. −1987.44 kJ

II. 1s2 2s2 2p6 3s2 3p6 4s2 B. 1s2 2s2 2p6 3s2 3p6 3d 10

C. 1s2 2s2 2p6 3s2 3p6 3d5 4s1

III. Just turn the top reaction around. −1300 kJ

IV. A. 52.5 J. B. 34° V. +82.9 kJ

VI. A -5.45 x 10−19 joules B -8.72 x 10−20 joules, C. 4.58 x 10−19 joules,

 frequency is 6.90 x 1014 s−1 and wave length is 434 kJ

VII. 0.843 g/l VIII. 1488 K IX 8.03 mL.