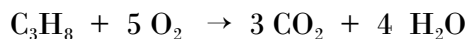


Answers to lecture test 2, Fall 2011

Electron configurations: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$ (4s may be written before 3d)

$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10}$ $1s^2 2s^2 2p^6 3s^2 3p^6 3d^2$ $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d^{10} 5s^2 5p^2$

II A.



B. 1. 5580 joules

2. -2232 kJ

C. -91.7 kJ/mol. May vary slightly depending on the value used from part B 2.
If you used the -2200 as the heat of combustion, you should have gotten -124 kJ/mol.

III. -3119 kJ B. 520 kJ (or one sixth of the previous answer)

C. 0.821 atm. 2. 3.18 atm. (or 4.00 minus answer to C part 1)

3. 0.306 atm.

IV. -8.72×10^{-20} and -5.45×10^{-19} , Energy emitted is 4.58×10^{-19} joules.

$$\nu = 6.90 \times 10^{14} s^{-1} \quad \lambda = 434 \text{ nm}$$

V. 0.0103 mol. B. 0.206 molar