

**CHM 115 REVISED KEY for
EXAM #4 PRACTICE**

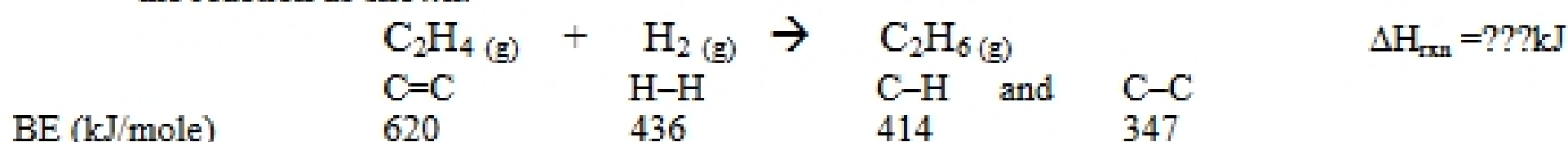
Correct answer is in RED. (numbers 1-8, 2.5 points each)

- Which of the following bonds should be the most polar? [UNIT 9, exam mat'l]
 a. N—Cl b. **N—F** c. F—F d. I—I e. N—Br
- Choose the element that should have the lowest electronegativity. [UNIT 8, exam mat'l]
 a. **K** b. Be c. O d. Al e. S
- What is the change in energy of a reaction in which 800 kJ of energy is required to break bonds and 980 kJ of heat is generated by bond formation [UNIT 6 – to be covered later]
 a. +1780 kJ b. -1780 kJ c. +180 kJ d. -180 kJ e. none of the above
- Which of the following species has a central atom with sp^3 hybridization? [Unit 10, exam mat'l]
 a. SO_2 b. NO_3^- c. **CH_4** d. CO_3^{2-} e. none of the above
- Which of the following bonds should be the shortest and strongest? [Unit 10, exam mat'l]
 a. C=C b. $C\equiv C$ c. O=O d. **$C\equiv O$** e. C—C
- Which of the following sets contains the greatest number of linear molecules? [Unit 10, exam mat'l]
 a. CO_2, H_2S, SO_2 b. H_2S, BCl_3, CO_2 c. **H_2O, CO, HCN** d. H_2S, SO_3, CO_2
- Which of the following is a trigonal pyramidal molecule? [Unit 10, exam mat'l]
 a. BCl_3 b. SO_2 c. CH_4 d. **NH_3** e. I_2
- Which of the following is a bent molecule? [Unit 10, exam mat'l]
 a. BCl_3 b. **SO_2** c. CH_4 d. NH_3 e. I_2

Complete the following as directed (point values as indicated).

(12 points)

9. Calculate the heat of reaction for the hydrogenation of ethylene from the bond energies listed and the reaction as shown.



[UNIT 6, will be covered later]

