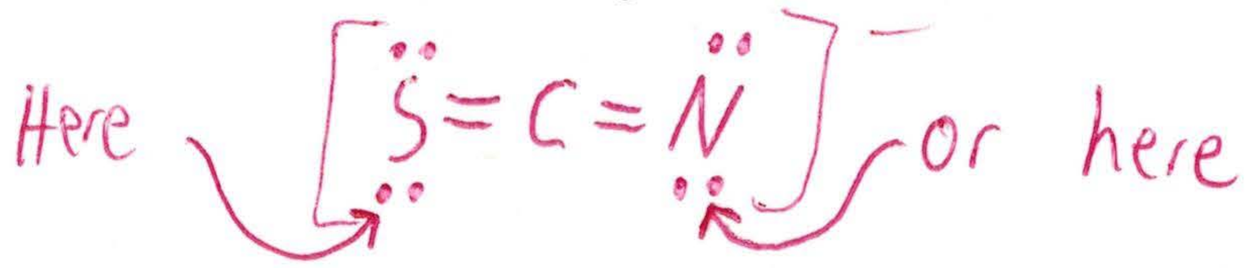
Quiz 16.4 – Lewis Acids and Bases

Name: Key

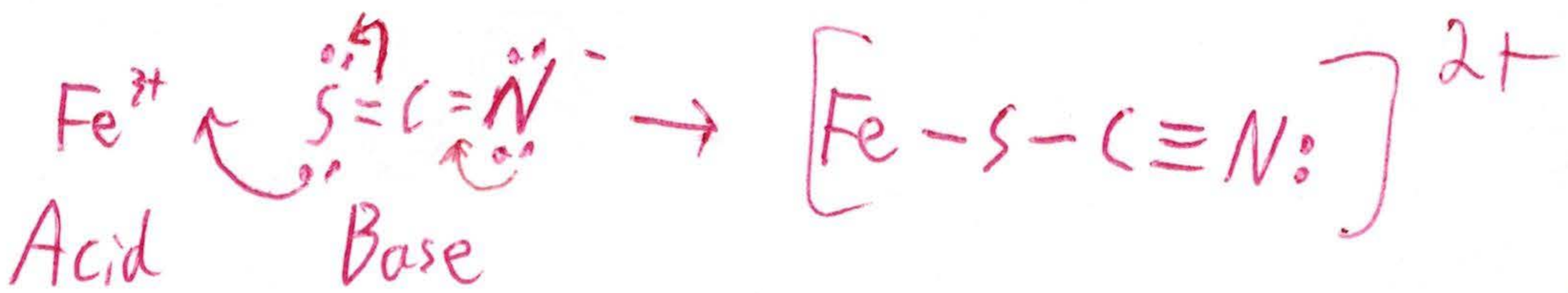
Question 1

SCN^- ions can accept a hydrogen and act as a Brønsted-Lowry base, but it can also act as a Lewis base. Draw a Lewis structure for SCN^- and indicate where the ion might make a new coordinate bond to form a Lewis adduct



Question 2

Iron(III) ion will form a Lewis adduct with a single SCN^- ion. Identify which reaction partner is the Lewis acid, and which is the Lewis base

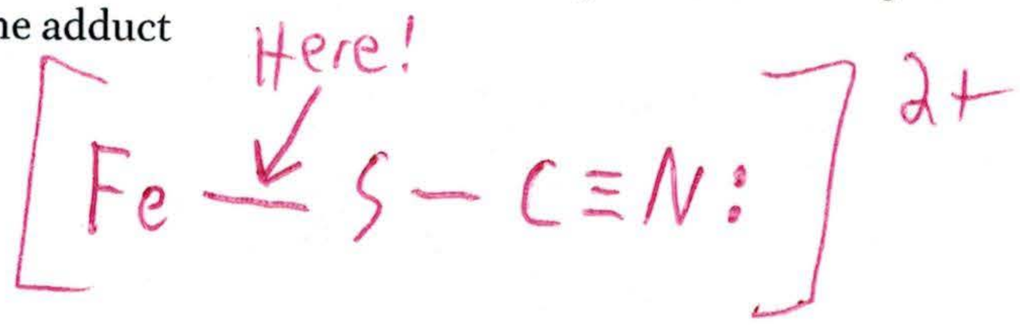


Question 3

Give the molecular formula for the Lewis adduct described in Question 2 above

Question 4

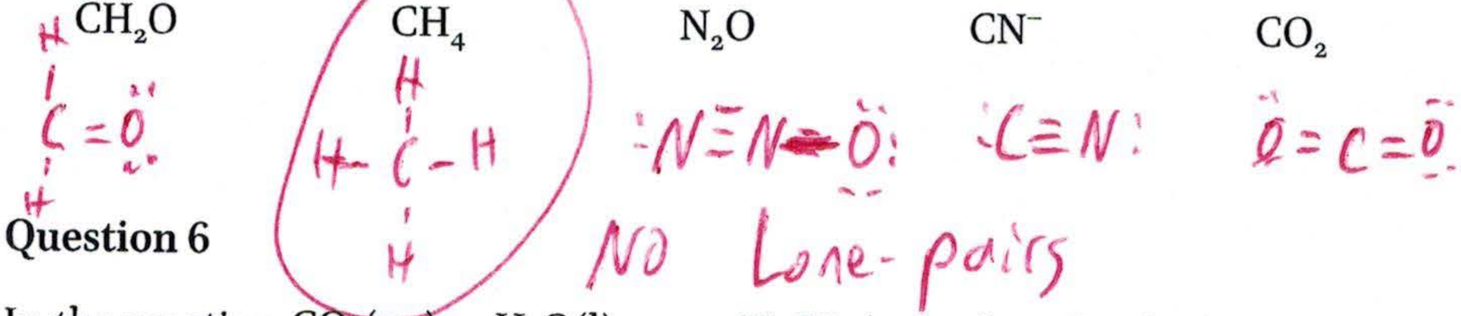
Draw a Lewis structure for the Lewis adduct described in Questions 2 and 3 above. Indicate the coordinate covalent bond which forms the adduct



Question 5

Which of the following ~~is~~ *incapable* of acting as a Lewis base:

CH_2O CH_4 N_2O CN^- CO_2



Question 6

In the reaction $CO_2(aq) + H_2O(l) \rightleftharpoons H_2CO_3(aq)$, identify which reactant is the Lewis acid, and which is the Lewis base