

5.6: Solutions for Selected Problems

Exercise 5.1.1:

a) 0 b) 3- c) 3- d) 3+ e) 5+

Exercise 5.1.2:

a) O_2 b) NO_2^- c) 2e^-

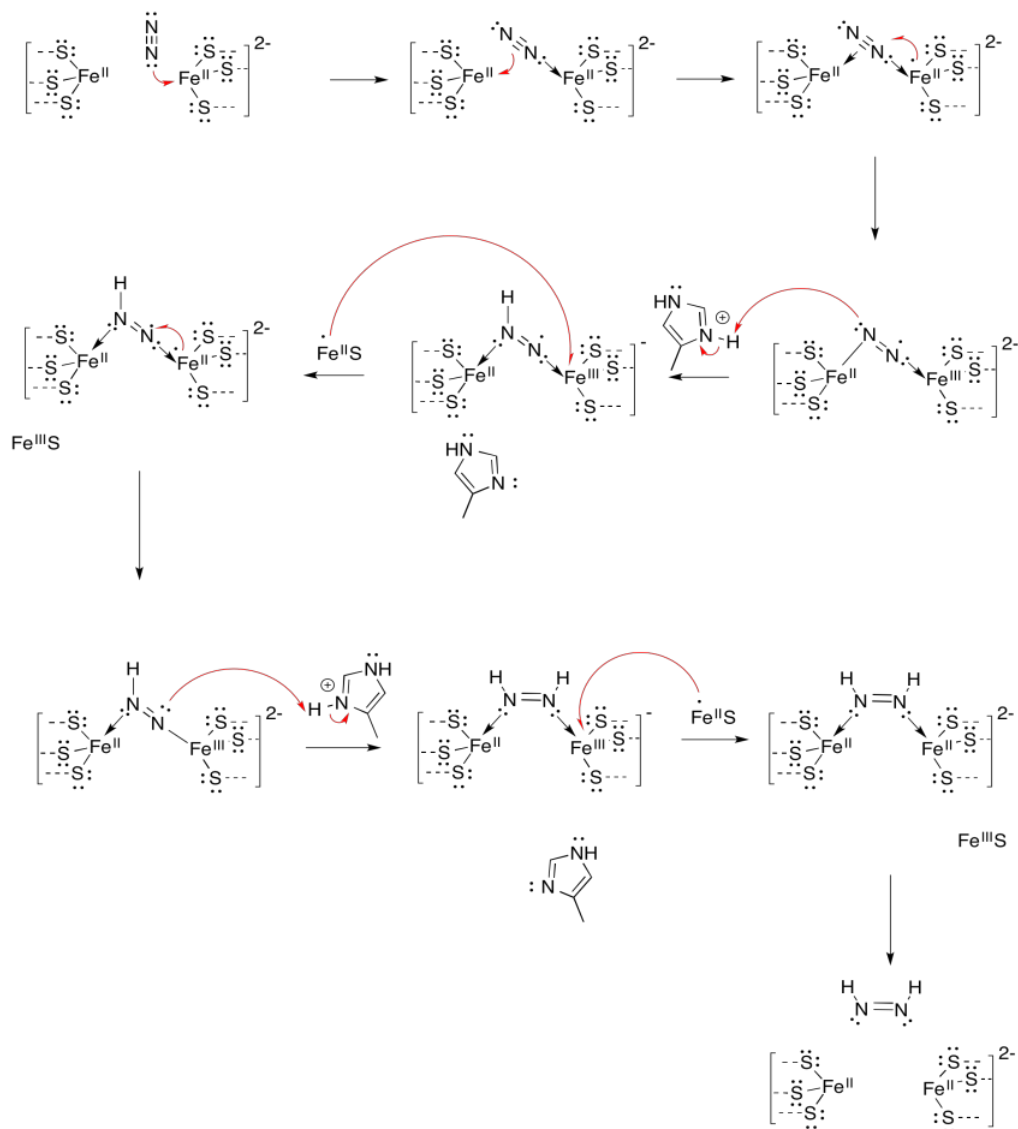
Exercise 5.3.1:

a. $\text{S}: 4 \times 2^- = 8^-$; $\text{Fe}: 2 \times 2^+ + 2 \times 3^+ = 10^+$; total = 2^+

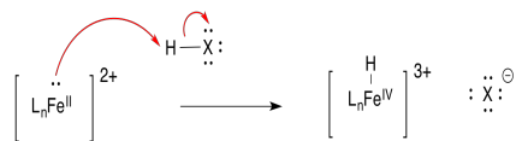
b. $\text{S}: 4 \times 2^- = 8^-$; $\text{Fe}: 1 \times 2^+ + 2 \times 3^+ = 8^+$; total = 0

c. $\text{S}: 2 \times 2^- = 4^-$; $\text{Fe}: 2^+ + 2^+ = 5^+$; total = 1^+

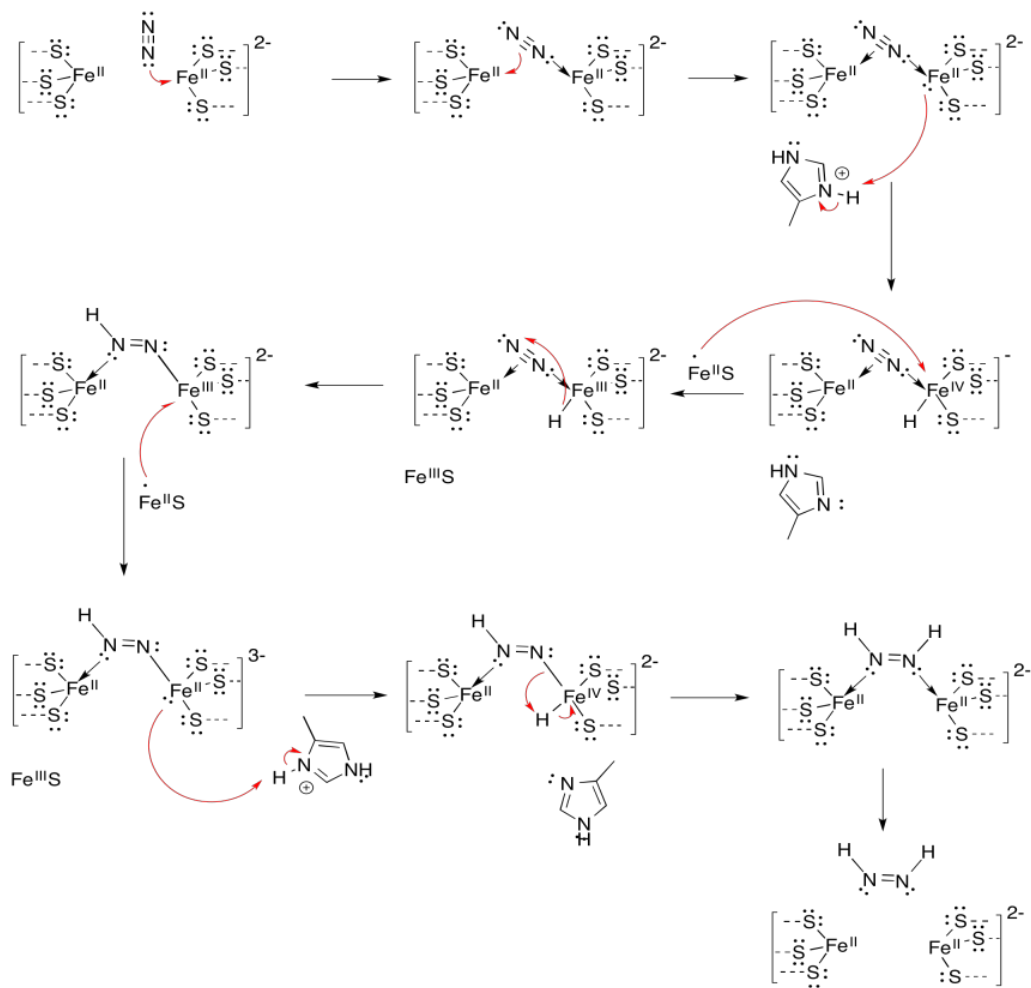
Exercise 5.3.2:



Exercise 5.3.3:

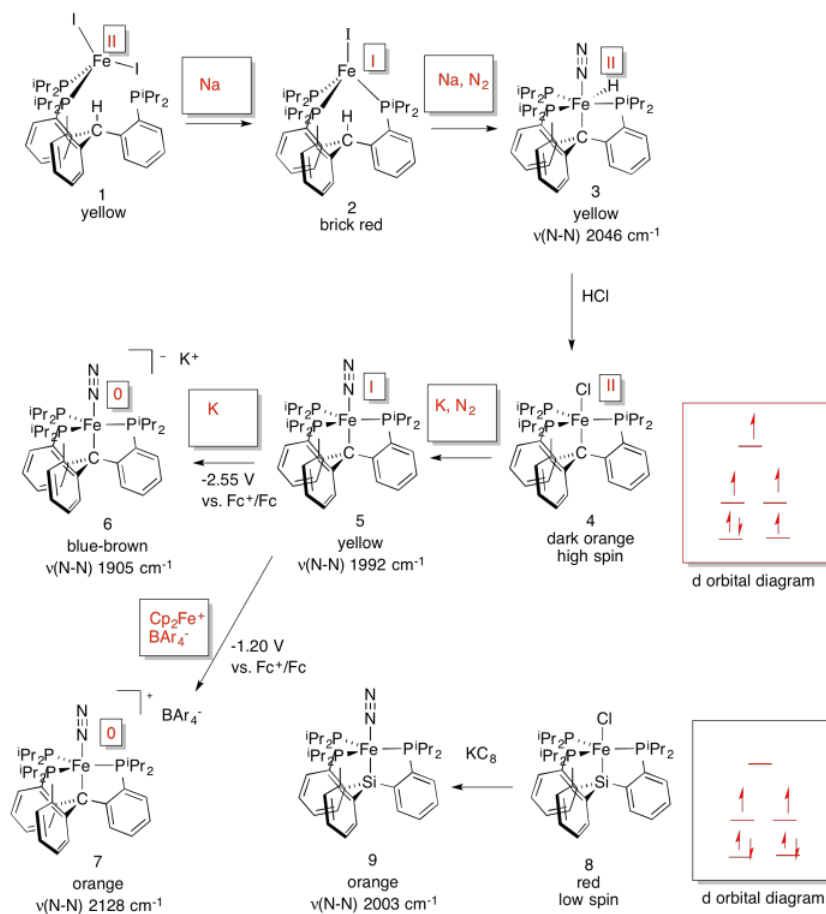


Exercise 5.3.4:



Exercise 5.4.1:

Answers don't reflect the true reagents, but show what a student might think of.



d) As the Fe becomes more reduced, the N-N stretching frequency decreases. That's because the more electron density there is on the Fe, the more it is able to backbond to the N₂ (N₂ is a π acceptor).

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