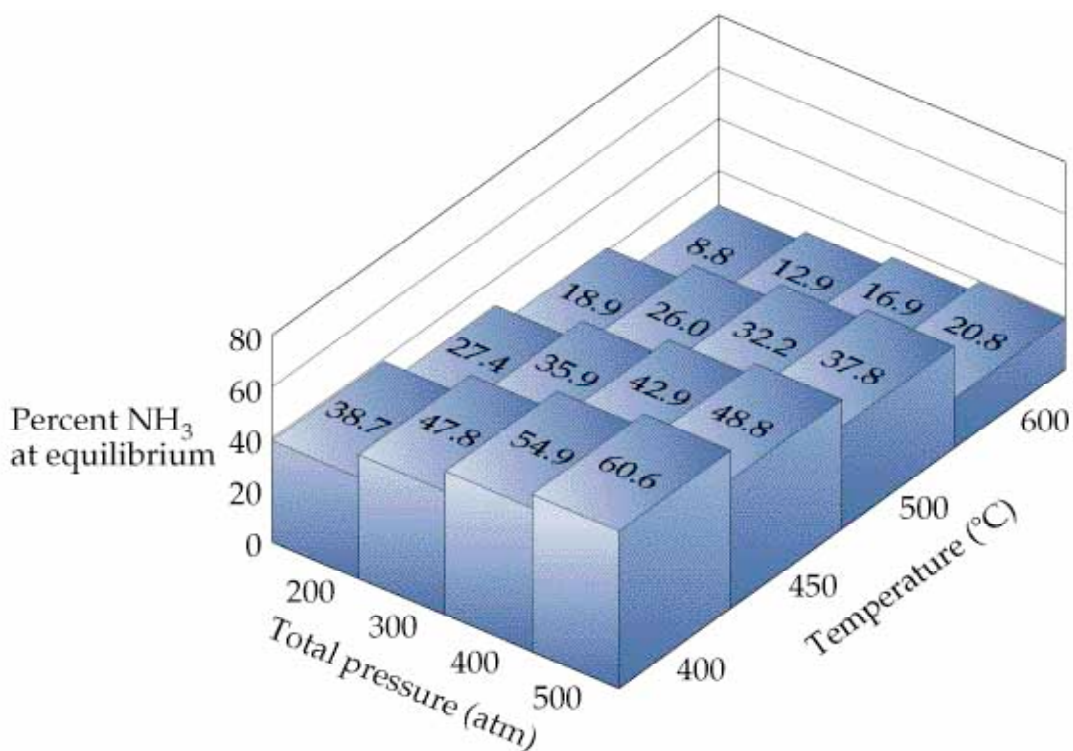


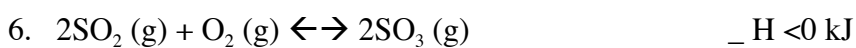
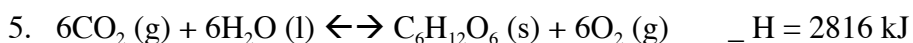
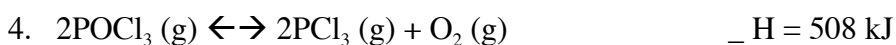
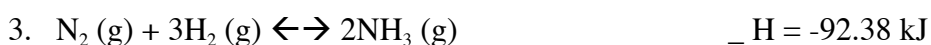
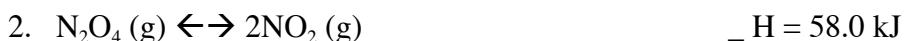
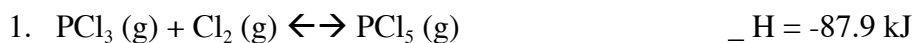
Practice General Chemistry Speaking Test
(Jeff Kenyon, Fall 2005)

(Questions from Chapter 15 of the textbook)



1. Explain how to determine the Percent NH₃ at equilibrium using the above chart. (30 seconds)
2. Explain the relationship between Percent NH₃ and increasing total pressure. Explain the relationship between Percent NH₃ and increasing temperature. (30 seconds)
3. An industrial chemist does not understand the usefulness of this chart. Convince this person of the usefulness of this chart in relation to the synthesis of ammonia. (60 seconds)

Now please look at the six equilibrium reactions below. Look at the various reactions, think about the relationship between them, then answer the questions.



4. Explain the concept of chemical equilibrium. Your explanation should use examples of each of the reactions shown above. (60 seconds)

5. Explain the difference in the shifts of the reactions between reactions 3 and 4 when the temperature is increased. (30 seconds).

6. A student mistakenly believes that reaction 2 will shift to the left when volume is increased. Explain to him why this thought is wrong. (45 seconds)

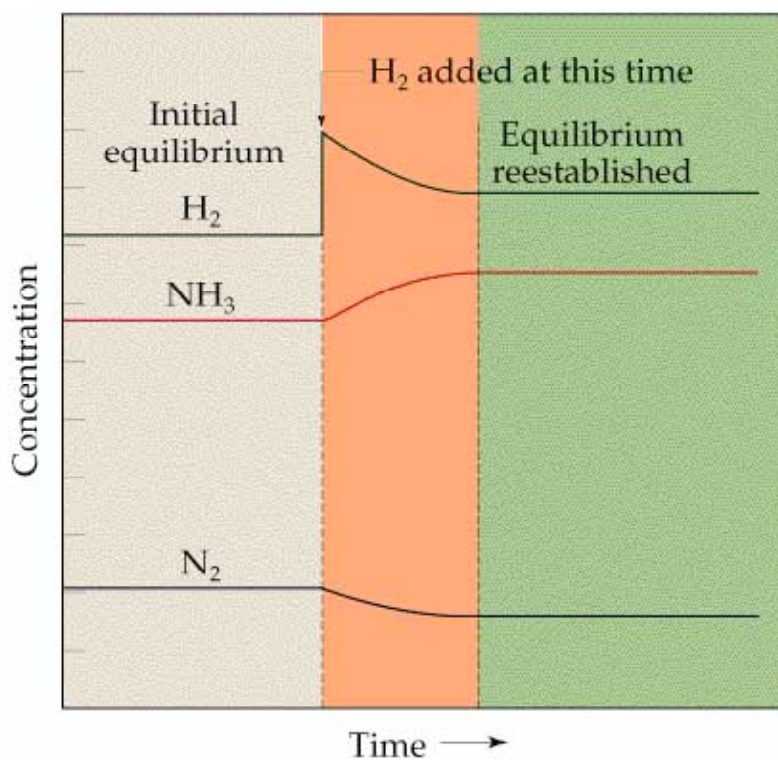
7. A catalyst can be used in many equilibrium reactions. Explain the advantages of using a proper catalyst. Explain the disadvantage of using an inappropriate catalyst. (60 seconds)

Now I'd like to hear your ideas about several topics. Be sure to say as much as you can in responding to each question.

8. Many students have trouble determining which way a reaction will shift when a temperature stress is placed on a system. Explain a useful way to make this determination for exothermic and endothermic reactions. (60 seconds)

9. To keep students interested, concepts often need to be related to real-life situations. Please explain a situation where knowledge of chemical equilibrium principles could be useful in real life. (60 seconds)

10. The graph below presents the idea of Le Chatelier's Principle for the Haber Reaction ($\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$). Please explain the results that happen when H_2 is added. (60 seconds)



11. Based on what you know about this plot, what would you expect to happen if NH_3 was added to the system instead of H_2 ? Explain why. (45 seconds)

12. Now imagine that you are a TA in an Organic Chemistry Lab. The following changes need to be made to the lab schedule. Please announce these changes to your class. (90 seconds).

Lab Date	Experiment	Reading	Points	Report due date
8/26	Check In, Introduction Exp #1, Microscale Equipment	Technique 1 Technique 2 section 2.1	Report: 10	M 9/5 T 9/6
9/2	Mixed Melting Point (Handout) & Exp #2 Solubility Parts A, B, & C,	Technique 6 Part A	Report: 30 Prelab: 10 Inlab: 10	M 9/12
9/9	Exp #3, Crystallization Parts B & C	Technique 4 Technique 5, (not sections 5.3 & 5.6)	Report: 30 40 Prelab: 10 Inlab: 10	T 9/19
9/16	Exp #4, Extraction Parts A, C, D (including optional procedure)	Technique 7 & (not sections 7.8, 7.12, & 7.13)	Report: 30 Prelab: 10 Inlab: 10	M 9/26
9/2	Separation of a Four-Component Mixture (Handout)	Technique 16	Report: 100 Prelab #1: 10	M 10/10
9/30	Separation of a Four-Component Mixture (continued)	Technique 8 (not sections 8.4), Technique 10 Part A, and Technique 15	Prelab #2: 10 Inlab #1: 10 Inlab #2: 10	
10/7	Exp #9A, Acetaminophen	Technique 2 section 2.1 Technique 3, sections 3.1-3.3	Report: 100 Prelab #1: 10	Combined # 9B & #10
10/14	Exp #9A, Acetaminophen (continued) Exp # 10, TLC Analysis of Analgesic Drugs	Technique 14 (not sections 14.3, 14.8, & 14.11)	Prelab #2: 10 Inlab #1: 10 Inlab #2: 10	
10/21	Midterm Quiz Cancelled		Quiz: 50	
10/21	Exp. #18, Reactivities of Some Alkyl Halides		Report: 50 Prelab: 10 Inlab: 10	M 10/31
10/28	Exp #21C, <i>t</i> -Pentyl Chloride		Report: 50 Prelab: 10 Inlab: 10	M 11/7
11/4	Exp #23A, 4-Methylcyclohexene		Report: 50 Prelab: 10 Inlab: 10	M 11/14
11/11	Veteran's Day – No class			
11/18	Exp #51 Unknowns Exp #34 Benzilic Acid		Reports: 150	M 12/5**
11/25	Thanksgiving Recess – No classes			
12/2	Final Complete unknowns Checkout		Final: 150	No Reports Accepted after 4pm F 12/2 !!!

After 5pm on
Saturday 12/3