

## 2000 CHEM1405 (Vet. Science)

### 2000-J-2

- $\text{MnSO}_4(\text{s}) \rightarrow \text{Mn}^{2+}(\text{aq}) + \text{SO}_4^{2-}(\text{aq})$   
 $\text{Li}_2\text{CO}_3(\text{s}) \rightarrow 2\text{Li}^+(\text{aq}) + \text{CO}_3^{2-}(\text{aq})$
- $227.2 \text{ kJ mol}^{-1}$
- A colloid with particles of solid or liquid dispersed in gas.  
Particle size 1-500 nm diameter - between solution and mixture in which particles can be seen  
Aerosol will scatter light (Tyndall effect).  
Particles do not settle out but remain distributed - undergo Brownian motion.
- 7

### 2000-J-3

- $8.0 \times 10^4$
- 1.58  
Buffer capacity is the amount of acid or base that can be added to the buffer before a significant change in pH occurs. The acid/base ratio should be within 1:10 (or 10:1) for buffer to be effective, so buffers near these extremes may be OK for buffering against addition of acid but not base (or *vice versa*). The actual amounts of the acid and conjugate base are directly related to the buffer capacity.

### 2000-J-4

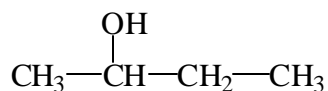
- $0.116 \text{ hour}^{-1}$   
15.8  $\mu\text{g}$

### 2000-J-5

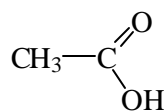
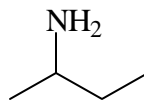
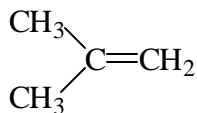
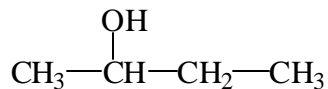
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Zn / H<sup>+</sup>

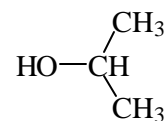
2-butanone



(E)-2-butene



+

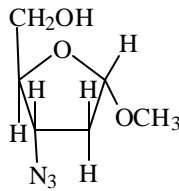
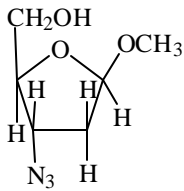
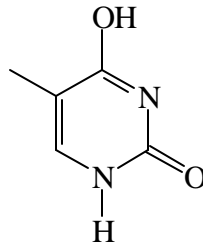
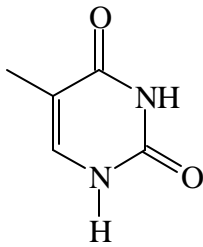


2-butanol

K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> / H<sup>+</sup>

## 2000-J-6

- furanose  
β-anomer  
3



## 2000-J-7

- amine, carboxylic acid, amide, aromatic ring (arene), ester

