

CHEM1611 Chemistry 1A (Pharmacy) - June 2005

2005-J-2

•		sulfur trioxide	+IV	0
		potassium permanganate	+VII	0
	Mg(ClO <sub>4</sub> ) <sub>2</sub>	cobalt(II) chloride-6-water	+II	7
	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>			

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YES	NO	NO

•  $3.42 \times 10^4$

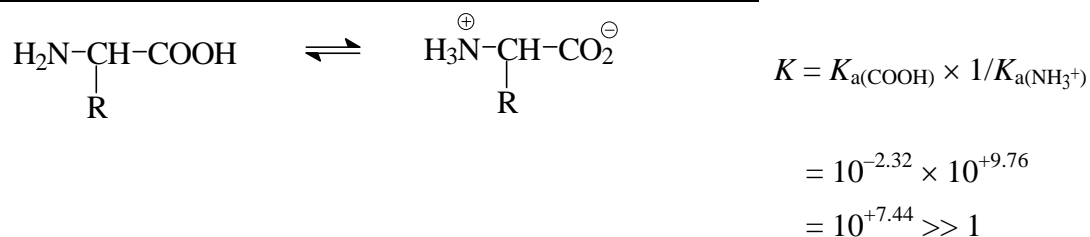
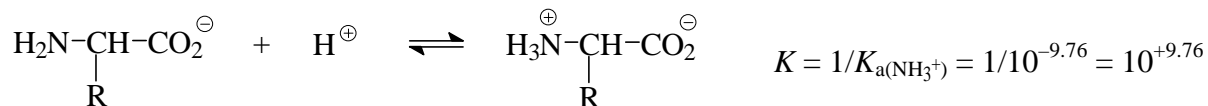
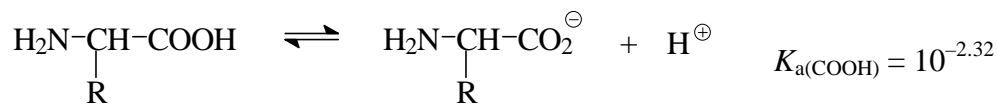
2005-J-3

- $1.6 \times 10^{-3}$  mol  
0.032 M

2005-J-4

- ion-ion, ion-dipole, ion-induced dipole dispersion  
hydrogen bonding, dipole-dipole, dipole-induced dipole

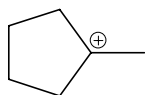
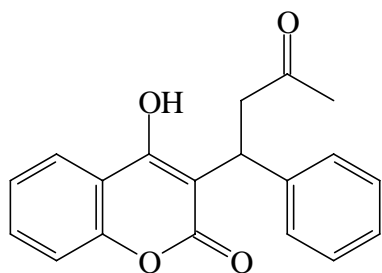
tetrahedral  $sp^3$  tetrahedral  
trigonal planar  $sp^2$  trigonal planar  
tetrahedral  $sp^3$  bent



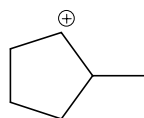
Therefore equilibrium lies far to the right and the zwitterionic form predominates.

2005-J-5

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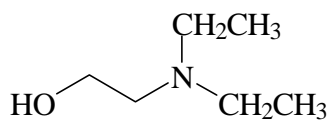
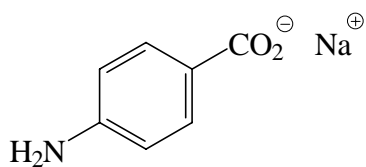
more stable carbocation



less stable carbocation

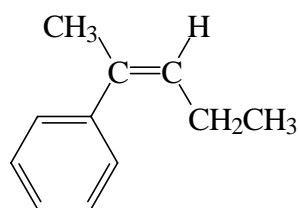


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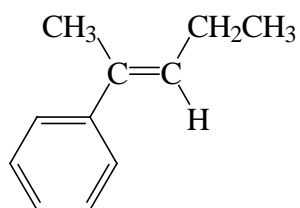


2005-J-6

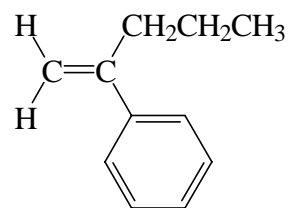
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(Z)-2-phenyl-2-pentene

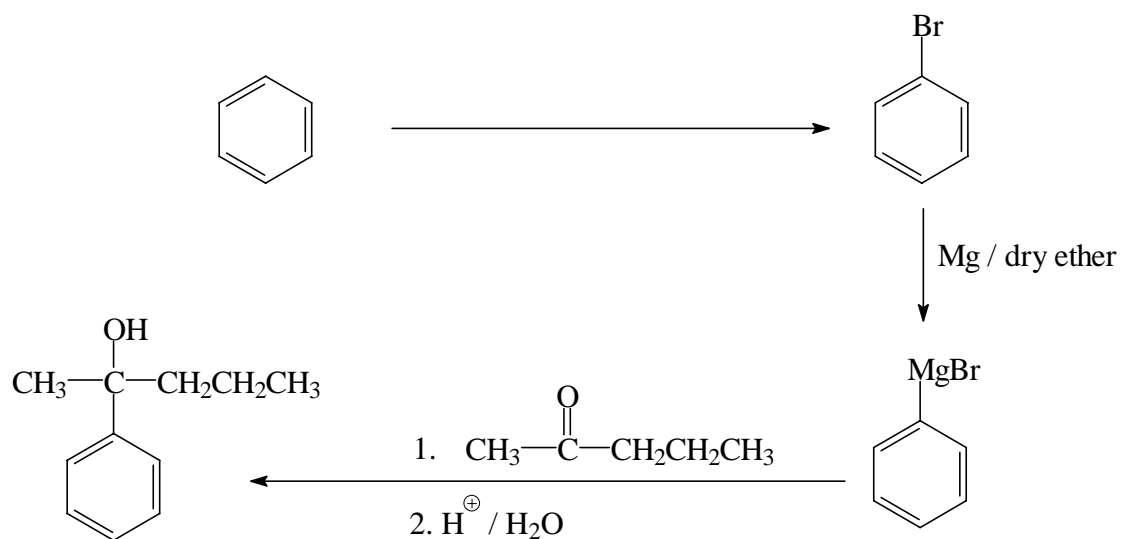


(E)-2-phenyl-2-pentene



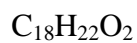
2-phenyl-1-pentene

2005-J-6 (cont.)



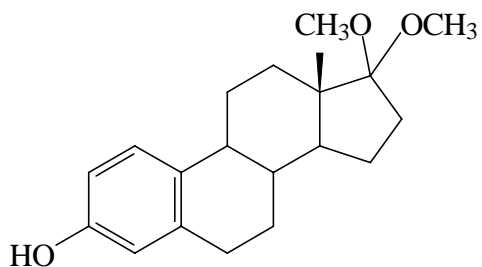
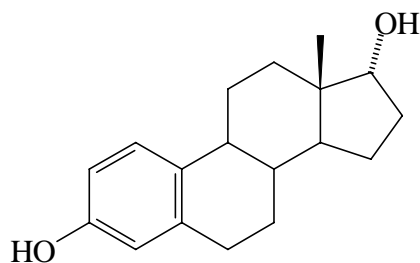
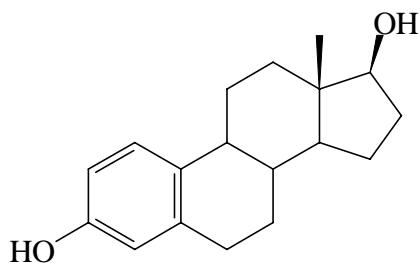
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phenol, ketone

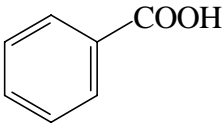
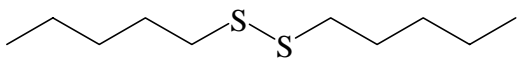
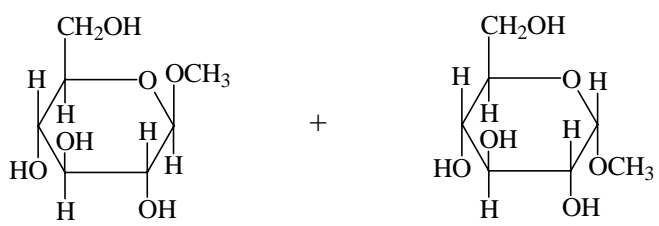
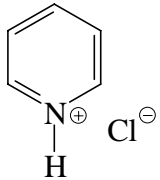
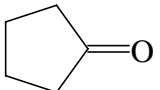
4



H<sup>+</sup>/H<sub>2</sub>O/heat

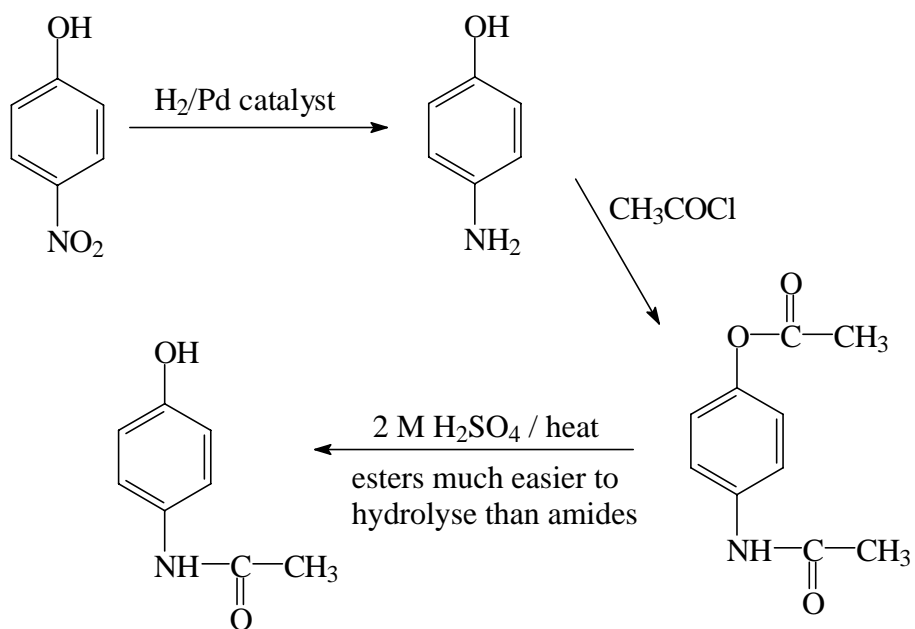
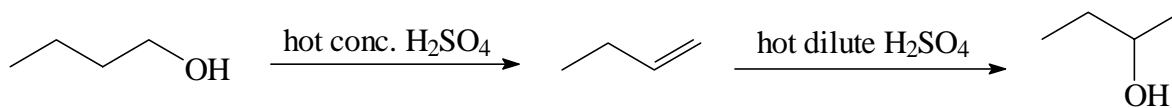
2005-J-8

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$\text{N}(\text{CH}_3)_3$	
	
	
1. NaOH 2. $\text{CH}_3\text{CH}_2\text{Br}$	
	
	
conc. $\text{HNO}_3$ / conc. $\text{H}_2\text{SO}_4$	
	

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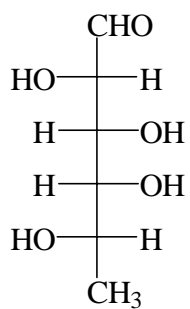
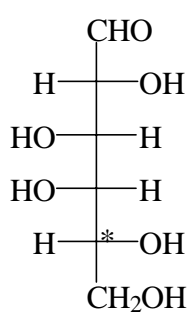
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2005-J-10

pyranose

hexose



D-galactose

L-fucose

2005-J-11

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tertiary ammonium ion, phenol, amide, aromatic ring, carboxylate ion, thioether

