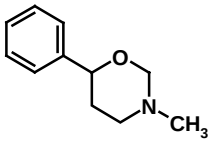
DEPARTMENT OF MEDICINAL CHEMISTRY
SCHOOL OF PHARMACY

Medicinal Chemistry I — MEDC 501
Dr. Umesh R. Desai — October 11, 2007

STUDENT NAME **HONOR PLEDGE**

Ring Size	*Saturated*	*Partly Saturated*	*Unsaturated*
3	-irane	-	-irene
4	-etane	(dihydro)	-ete
5	-olane	(dihydro)	-ole
6	-inane	(di or tetrahydro)	-ine
7	-epane	(di, tetra, or hexahydro)	-epine
8	-ocane	(di, tetra, or hexahydro)	-ocine

1. Write the systematic name for the following heterocycles.



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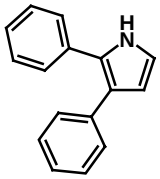

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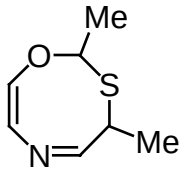

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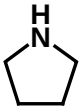
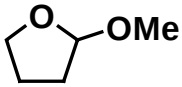
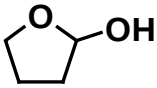
2. Rank the following according to their stability to ring opening conditions, e.g., high temperature, strong acids, etc. Use 1 for least stable and 3 for most stable. **NOTE: The entire sequence has to be correct, otherwise zero points.**



3. Rank the following according to their stability to acidic conditions, e.g., H_2O/H^+. Use 1 for least stable and 3 for most stable. **NOTE: The entire sequence has to be correct, otherwise zero points.**





5. Whereas _____ isomers can be obtained by mere rotation around single bonds, to interconvert _____ isomers one has break bonds.

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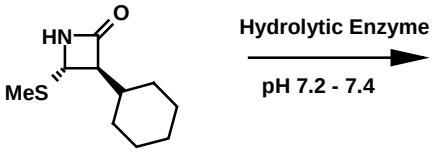
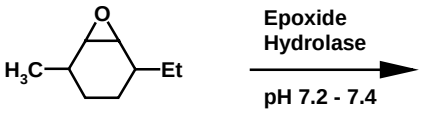
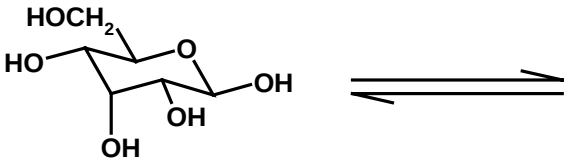
4. Draw the structure of products formed in the following reactions. If no product is formed, write none.

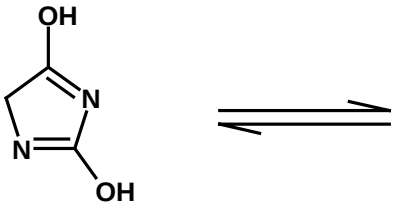




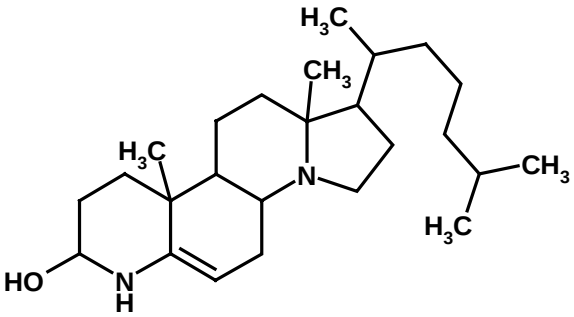
6. Following is a chair form of a monosaccharide. Draw its conformational isomer that might exist in equilibrium. Circle the conformation that is expected to be more stable. Justify your choice in not more than 2 or 3 sentences.



7. For the structure below, draw the appropriate tautomer that may exist in equilibrium. What is this tautomerism called?



8. Circle each chiral center in the following molecule. **Please mark each center clearly and distinctly.**



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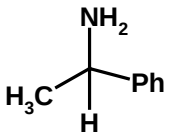
9. What is the Cahn-Ingold-Prelog identification (the R or S form) of the following stereoisomer?



10. Clearly define the following terms in not more than 2 to 3 sentences.

Enantiomers : _____

_____

_____

Diastereomers: _____

_____

_____