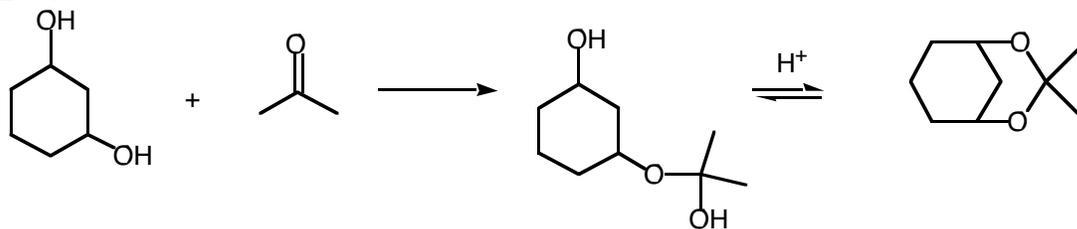


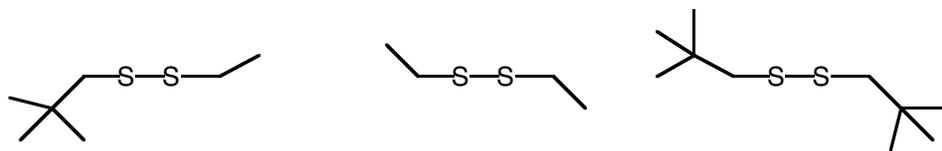
Exam 2 Answer Key
Organic Chemistry
NESAs – Fall 2001

1. $c < b < a$

2. ^c

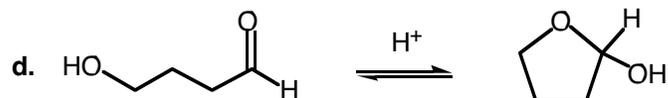
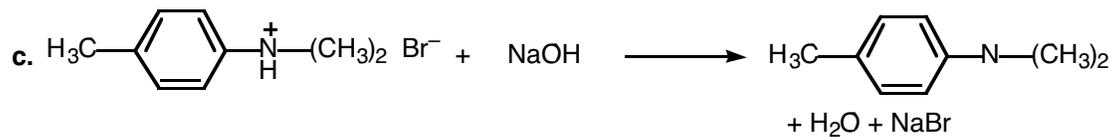
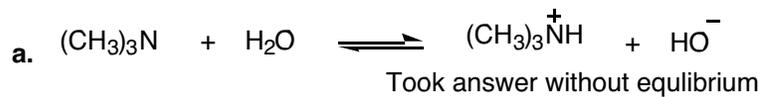


3.



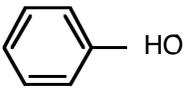
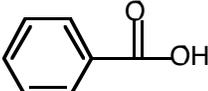
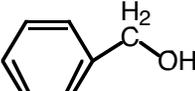
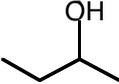
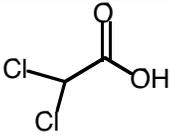
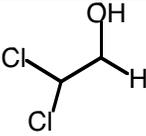
4. $d < b < a < c$ Also gave credit if first two switched

5.



6. a. top b. bottom c. top

7.

Compound	Tollen's	NaBH ₄
		
$\text{H}_3\text{CH}_2\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$	No reaction	
$\text{Cl}_2\text{HC}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$		

8. b

9. c

10. Treated as extra credit. As mentioned aldehydes are neutral compounds. Therefore they will not act as an acid or a base when placed with water. If the liquid in the bottle has been allowed to sit in contact with oxygen for a long period of time it is possible that some of the aldehyde had oxidized to the respective carboxylic acid. The acidic indication on the litmus paper supports this. Over time many compounds will react, thus changing the composition of the reagent. It is common practice for chemists to test and purify (if necessary) reagents, even if the chemical was just purchased.

11. Nomenclature

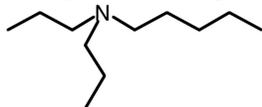
a. Acetone or 2-propanol

b. *N*-ethyl-*N*-methylpropylamine

c. 3-ethyl-3-methyl-2-pentanone

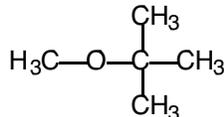
d. 2-propoxy-1-ethanol

e. 3-ethyl-3-methylpentanal

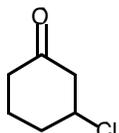


f.

g. *tert*-butylamine or 2-methyl-2-propylamine



h.



i.

j. 3-chloro-4-oxopentanal