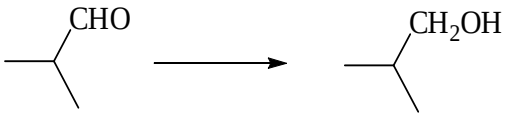
Chem1002 **Sample Quiz 2 (i)** **Last update: 9/9/16**

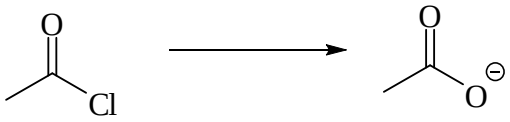
1. Which one of the following reagents would best effect the conversion shown?

a) H_2 / Pd catalyst
b) $NaBH_4$ followed by H_3O^+/H_2O
c) $Cr_2O_7^{2-}$/ H_3O^+
d) hot conc. H_2SO_4
e) hot dilute OH^-



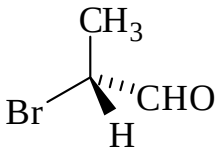
2. Which one of the following reagents would best effect the conversion shown?

a) conc. HCl
b) excess NH_3
c) $SOCl_2$
d) H_3O^+ /H_2O/heat
e) OH^-/H_2O/heat



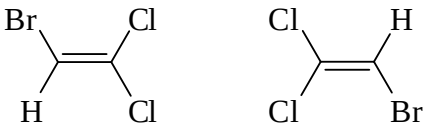
3. What is the order of priority (1st = highest) and the absolute configuration of the following compound?

	1st	2nd	3rd	4th	Abs. Config.
a)	CHO	CH_3	Br	H	(*S*)
b)	Br	CH_3	CHO	H	(*R*)
c)	Br	CHO	CH_3	H	(*S*)
d)	Br	CHO	CH_3	H	(*R*)
e)	Br	CH_3	CHO	H	(*S*)



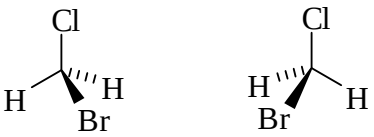
4. Which definition best describes the following pair of compounds?

a) Enantiomers
b) Diastereomers
c) Constitutional isomers
d) Conformers
e) Same compound



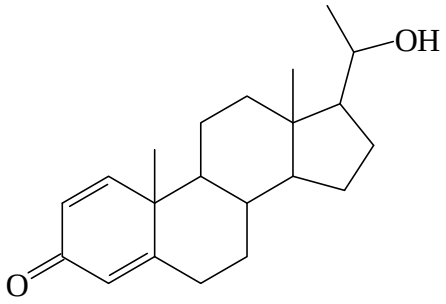
5. Which definition best describes the following pair of compounds?

a) Enantiomers
b) Diastereomers
c) Constitutional isomers
d) Conformers
e) Same compound



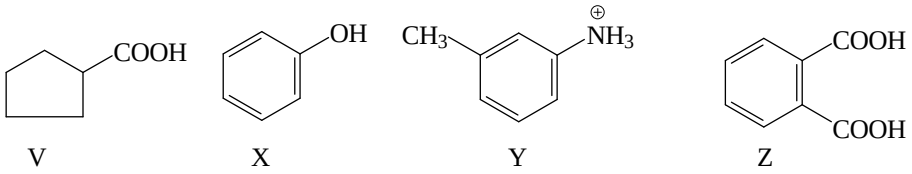
6. How many stereogenic centres are present in the following steroid?

a) 4
b) 5
c) 6
d) 7
e) 8



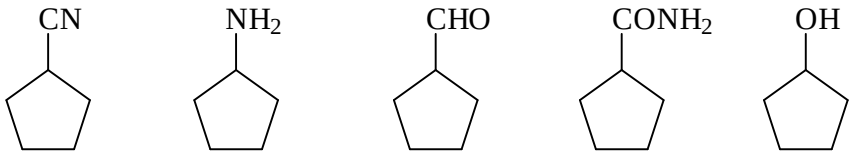
7. Which of the following species react with dilute sodium hydroxide in an acid-base reaction?

a) all of them
b) none of them
c) X and Y only
d) V only
e) Z only



V X Y Z

8. Which one of the following compounds will dissolve in dilute hydrochloric acid?



A B C D E

9. Which of the following is **not** an example of a conjugate acid-base pair?

a) HCN, CN^-
b) H_3PO_4, PO_4^{3-}
c) $HClO_3$, ClO_3^-
d) H_3O^+, H_2O
e) HCO_3^-, CO_3^{2-}

10. 3.00 mL of a 0.350 M solution of NaOH is diluted to 800 mL with water. What is the pH of the resulting solution?

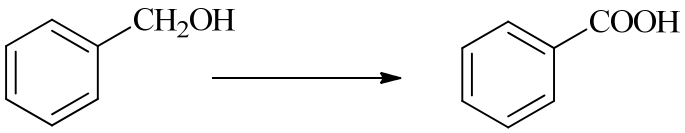
a) 2.88 b) 10.70 c) 10.88 d) 11.12 e) 12.50

Correct answers: 1B, 2E, 3D, 4E, 5E, 6D, 7A, 8B, 9B, 10D

Chem1002 **Sample Quiz 2 (ii)** **Last update: 9/9/16**

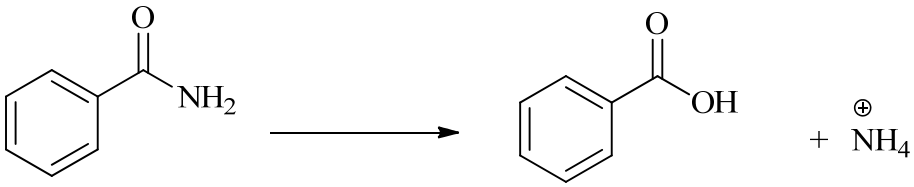
1. Which one of the following reagents would best effect the conversion shown?

a) H_2 / Pd catalyst
b) $NaBH_4$ followed by H^+/H_2O
c) $Cr_2O_7^{2-}/H^+$
d) hot conc. H_2SO_4
e) hot dilute OH^-



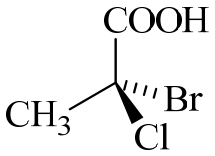
2. Which one of the following reagents would best effect the conversion shown?

a) conc. HCl
b) excess NH_3
c) $SOCl_2$
d) H^+/H_2O/heat
e) OH^-/H_2O/heat



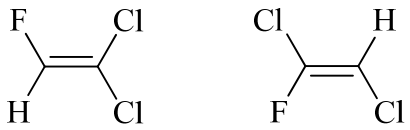
3. What is the order of priority (1st = highest) and the absolute configuration of the following compound?

	1st	2nd	3rd	4th	Abs. Config.
a)	COOH	CH_3	Br	Cl	(*S*)
b)	Br	Cl	COOH	CH_3	(*S*)
c)	Cl	Br	CH_3	COOH	(*R*)
d)	COOH	Br	Cl	CH_3	(*R*)
e)	Br	Cl	COOH	CH_3	(*R*)



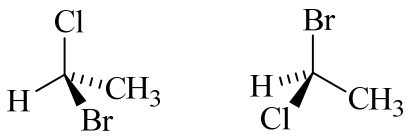
4. Which definition best describes the following pair of compounds?

a) Enantiomers
b) Diastereomers
c) Constitutional isomers
d) Conformers
e) Same compound



5. Which definition best describes the following pair of compounds?

a) Enantiomers
b) Diastereomers
c) Constitutional isomers
d) Conformers
e) Same compound



6. How many stereogenic centres are present in the following steroid?

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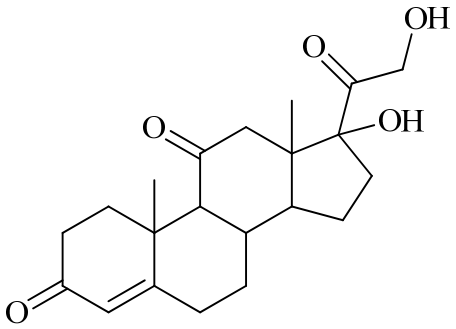
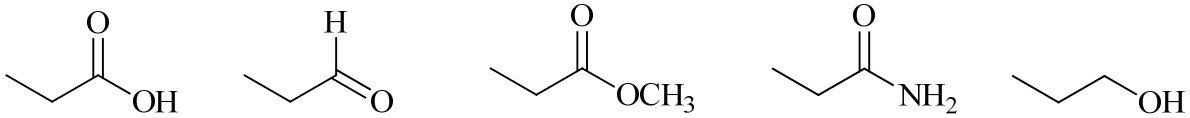
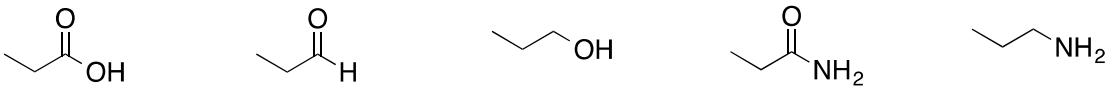


7. Which one of the following compounds will dissolve in $NaHCO_3$ solution to give an anion and evolve $CO_2(g)$?



8. Which one of the following compounds will dissolve in dilute hydrochloric acid?



9. Which of the following is **not** an example of a conjugate acid-base pair?

a) HSO_3^-, SO_3^{2-}
b) HCN, CN^-
c) H_3PO_4, $H_2PO_4^-$
d) O, OH^-
e) H_3O^+, H_2O

10. 6.00 mL of a 0.320 M solution of HCl is diluted to 400 mL with water. What is the pH of the resulting solution?

a) 2.32 b) 2.82 c) 4.66 d) 7.66 e) 11.68

Correct answers: 1C, 2D, 3E, 4C, 5A, 6C, 7A, 8E, 9D, 10A