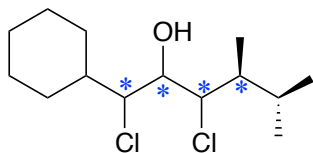


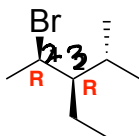
CEM 251 Sec 730
Quiz 2 — 25 points

1. (3-points) How many chiral centers are in the molecule below?



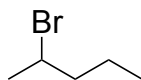
- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

2. (3-points) What is the R/S configuration of the carbons **2** and **3**?



- A. 2R, 3S
- B. 2S, 3R
- C. 2R, 3R
- D. 2S, 3S

3. (3-points) What is the IUPAC name of the compound below?



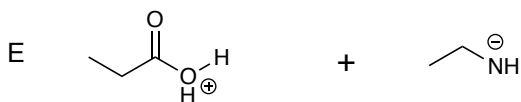
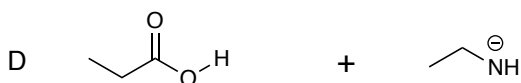
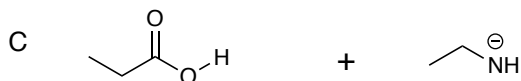
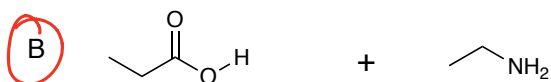
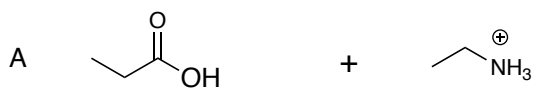
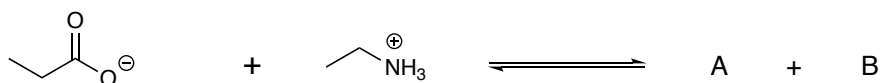
- A. 2-bromopentane
- B. 4-bromopentane
- C. 1-methyl-1-bromobutane
- D. 2-bromohexane
- E. 4-bromohexane

4. (2-points) What is the relationship between the compounds below?



- A. Enantiomers
 B. Diastereomers
 C. Identical isomers
 D. Constitutional isomers

5. (4-points) What is the conjugate acid (A) and conjugate base (B) in the reaction below?



6. (10-points) Acetic acid, CH_3COOH has a pK_a of 4.74. Write an equilibrium reaction equation (4-pt) and calculate the K_a of the reaction (6-pts).



$$\text{pK}_a = 4.74$$

$$-\log_{10} \text{K}_a = 4.74$$

$$\text{K}_a = 10^{-4.74}$$