

# Chemistry 2541, Fall 2017

## Quiz 4

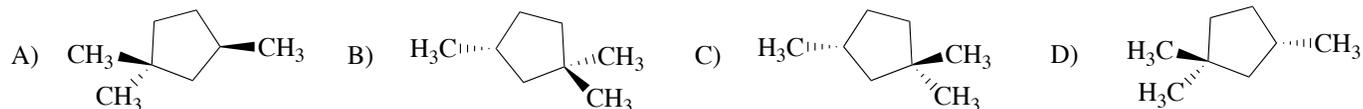
(30 points)

*Important notes:*

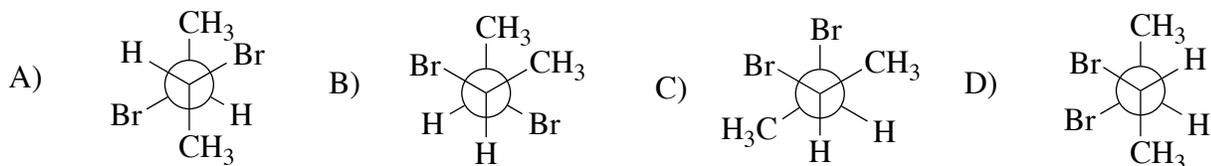
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be posted on eGradebook; graded Scantron forms will not be returned to students.

**Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).**

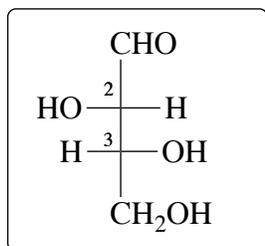
1. Which is the structure of (*S*)-1,1,3-trimethylcyclopentane?



2. Which one of following Newman projections represents a **meso** compound?



3. What is the **configuration** (*R* or *S*) at the carbon atoms 2 and 3 in the **Fischer projection** of a molecule shown in the box?



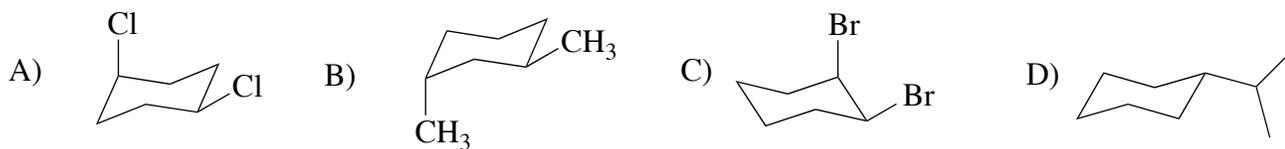
A) 2*R*,3*R*      B) 2*S*,3*R*

C) 2*R*,3*S*      D) 2*S*,3*S*

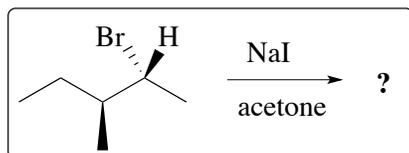
4. Consider the following **orders of priority** (highest to lowest). Which order is incorrect?

- A) Cl > CH<sub>2</sub>Br > CH<sub>3</sub> > H                      B) Cl > CH=CH<sub>2</sub> > CH<sub>3</sub> > H
- C) OH > CH<sub>2</sub>CH<sub>2</sub>OH > CHO > CH<sub>3</sub>              D) NH<sub>2</sub> > CH<sub>2</sub>SH > CH<sub>2</sub>OH > CH<sub>3</sub>

5. Which one of the following molecules is **chiral**?



6. What is the IUPAC name of the major **product** for the reaction shown in the box?



- A) (2*R*,3*S*)-2-iodo-3-methylpentane      B) (2*S*,3*R*)-2-iodo-3-methylpentane  
 C) (2*R*,3*R*)-2-iodo-3-methylpentane      D) (2*S*,3*S*)-2-iodo-3-methylpentane

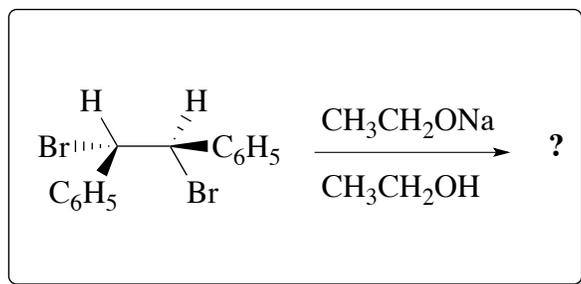
7. Which best describes the **rate-limiting** step in the  $S_N1$  mechanism?

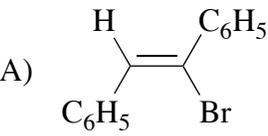
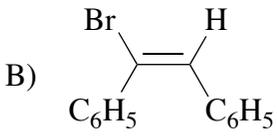
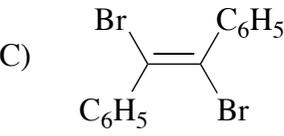
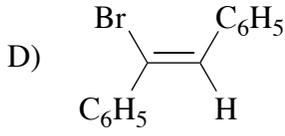


8. Which one of the following compounds is **not a nucleophile**?

- A) water      B)  $\text{CH}_3\text{OH}$       C)  $\text{C}_2\text{H}_6$       D)  $(\text{CH}_3)_3\text{N}$

9. What is the main **product** of the **E2-elimination** reaction shown in the box?



- A)  B)   
 C)  D) 

10. Which one of the following compounds is the **best** choice as a **reagent** for an **E2** reaction?

- A) *t*-BuOK      B)  $\text{C}_2\text{H}_5\text{OCH}_3$       C) NaI      D) *t*-BuCl