Chemistry 2541, Fall 2017
Quiz 5
(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. What is the IUPAC name for the compound shown in the box?

![Chemical structure]

A) \((E)-1,5\)-dibromo-4-ethyl-5-hexene  B) \((Z)-1,5\)-dibromo-4-ethyl-5-hexene
C) \((E)-2,6\)-dibromo-3-ethyl-2-hexene  D) \((Z)-2,6\)-dibromo-3-ethyl-2-hexene

2. Arrange the carbocations shown in the box in order of increasing stability.

![Carbocations]

A) \(I < III < II\) (most stable)  B) \(II < I < III\) (most stable)
C) \(III < I < II\) (most stable)  D) \(III < I < II\) (most stable)

3. Which of the following is the major product of the reaction of methylenecyclopentane with HCl?

![Reaction]

A)  B)  C)  D)

4. What is the product of 1,2-hydride shift for the reaction in the box?

![Reaction]

A)  B)  C)  D)
5. Which one of the following molecules is not an electrophile?

A) $\text{H}_2\text{O}^+$  B) $\text{Cl}_2$  C) $\text{HBr}$  D) $\text{CH}_3\text{OH}$

*Weak acid ($pKa \approx 16$)*

6. What is the main product of the reaction shown in the box?

[Diagram of cyclohexane with reaction 1. BH$_3$ 2. H$_2$O$_2$, NaOH, H$_2$O]

7. What is a main product of the reaction shown in the box?

[Diagram of cyclohexene with reaction 1. OsO$_4$, H$_2$O 2. NaHSO$_3$, H$_2$O]

8. What is the IUPAC name of a main product of the reaction shown in the box?

[Diagram of butadiene with reaction $\text{CH}_2\text{CO}_2\text{H}$]

A) cis-2,3-diethylxirane  B) trans-2,3-diethylxirane
C) trans-3,4-diethylxirane  D) cis-3,4-diethylxirane

9. What is a main product of the reaction shown in the box?

[Diagram of cyclohexene with reaction $\text{O}_3$, 2. (CH$_3$)$_2$S]

10. What is a main product of the reaction shown in the box?

[Diagram of cyclohexene with reaction $\text{H}_2$, Pd (cat.)]

A)  B)  C)  D)