Chemistry 2541, Fall 2015
Quiz 3

Key

(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.

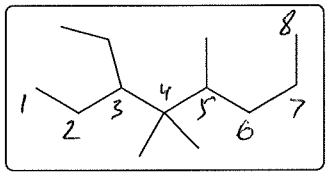
Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

1. What is the **IUPAC name** for the compound shown in the box?

$(CH_3)_3CCH_2C(CH_2CH_3)_2CH(CH_3)CH_2CH_3$

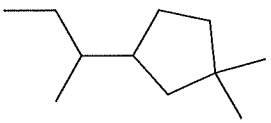
A) 4,4-diethyl-2,2,5-trimethylheptane B) 5-ethyl-2,2,4,4-tetramethylhexane
C) 2,2,4,4,5-pentamethylheptane D) 1-*tert*-butyl-3,3-diethyl-4-methylpentane

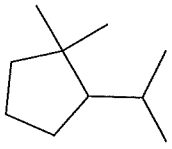
2. What is the **IUPAC name** of the alkane shown in the box as a line-angle structure?

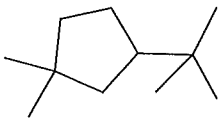


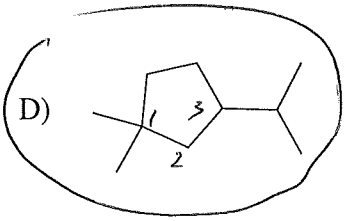
A) 3-ethyl-4-isopropyl-5-methyloctane B) 4-ethyl-3,3-trimethyl-2-propylhexane
C) 3,3-diethyl-4,5,6-trimethyloctane D) 3-ethyl-4,4,5-trimethyloctane

3. Which is the structure of **3-isopropyl-1,1-dimethylcyclopentane**?

A) 

B) 

C) 

D) 

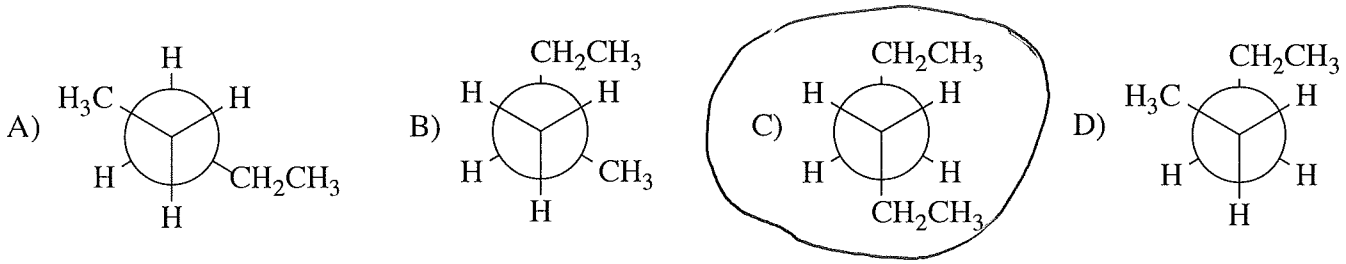
4. Which of the following compounds contains a **quaternary** (4°) carbon atom?

A) 1,1-diethylcyclohexane B) ethylcyclohexane C) 1,2-dimethylcyclohexane D) cyclohexane

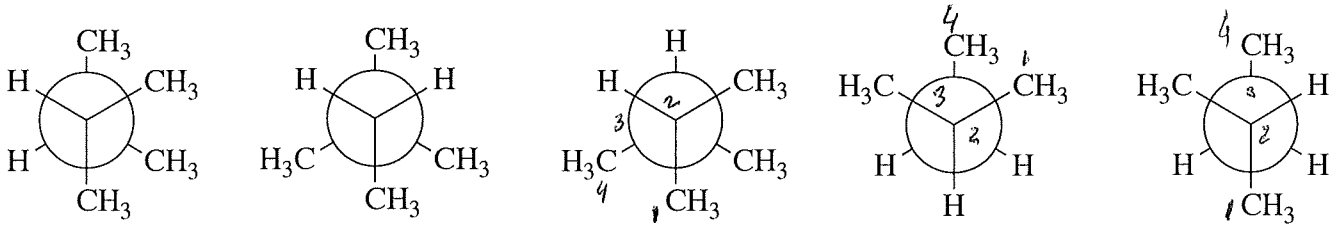
5. Which compound has an ***aldehyde*** functional group and a ***triple bond*** in the parent chain?

A) 1-pentyn-3-one B) 3-pentynal C) 2-butenal D) 1-penten-3-one

6. Which of the following Newman projections represents the *anti* conformation of normal **hexane**?

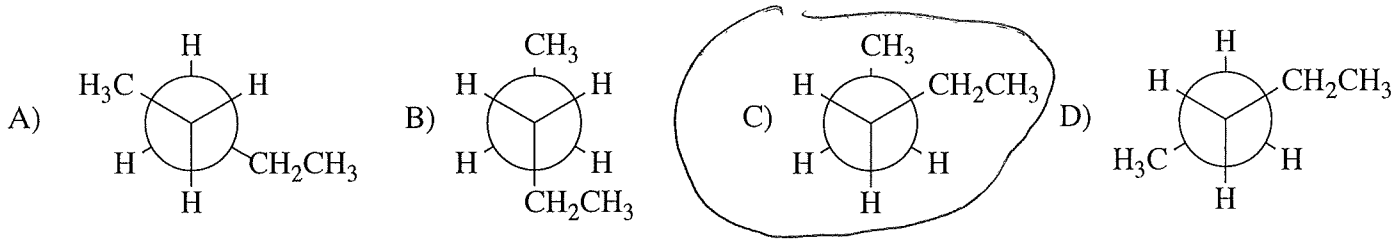


7. Which of the following Newman projections represent conformations of **2-methylbutane**?

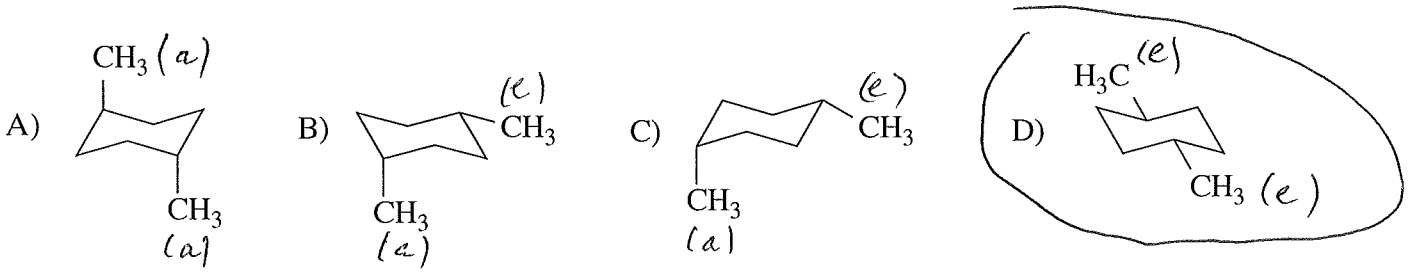


A) **1** and **2** B) **1** and **3** C) **2** and **4** D) **4** and **5**

8. Which one of the following conformers of pentane has the **highest energy**?



9. Which one of the following structures of disubstituted cyclohexanes is expected to be the **most stable**?



10. The molecule shown in the box contains four methyl groups labeled A, B, C, and D. Which of these methyl groups does not have any **1,3-diaxial interaction**?