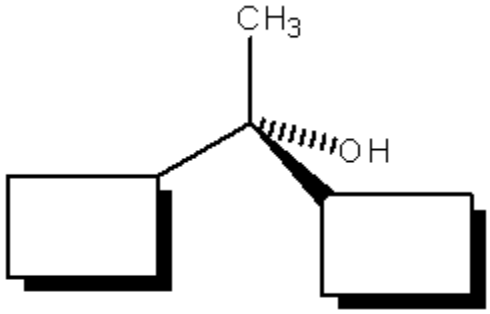
CHM 1321-B **First Midterm** **Feb – 2016**
(Prof. S. Gambarotta)

Your Name: _____
Student #: _____

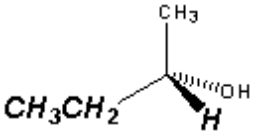
1. You must respond to all exercises.
2. All questions have the same weight.
3. Please be clear with your answers
4. No remarking for exams written in pencil.
5. Take advantage of THE MOLECULAR MODELS

Question 1

Complete the following diagram so that it represents (*S*)-2-butanol.

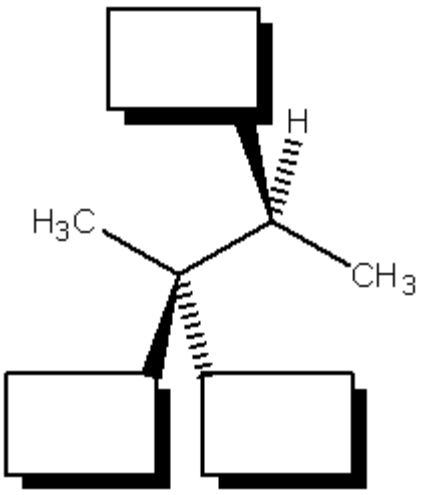


ANS:

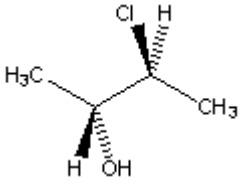


Question 2

Complete the following zig-zag structure so that it represents (2*R*,3*S*)-3-chlorobutan-2-ol.

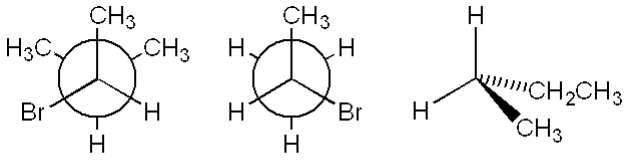


ANS:



Question 3

Which of the following compounds is/are chiral?

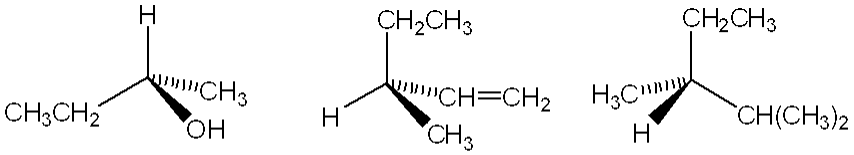


1 2 3

ANS: only 1

Question 4

Which of the following(s) has/have the *S* configuration?



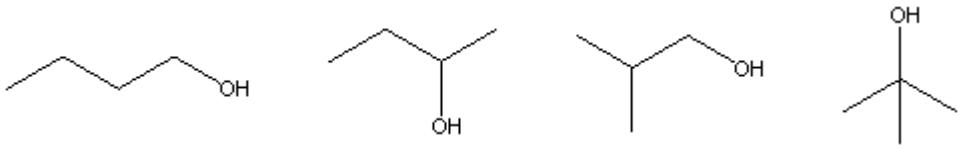
1 2 3

ANS: **1** and **2**

Question 5

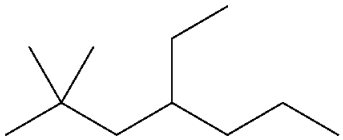
Draw the bond-line structures of all of the alcohols that have the formula $C_4H_{10}O$.

ANS:



Question 6

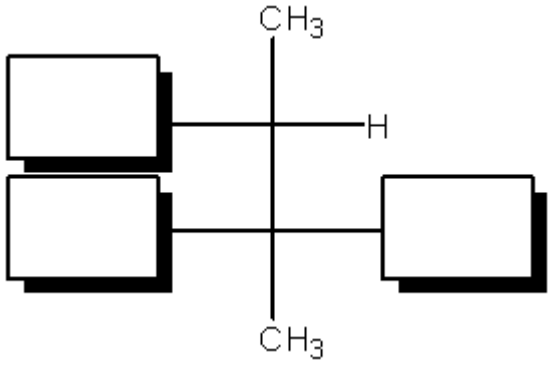
What is the IUPAC name of the following compound?



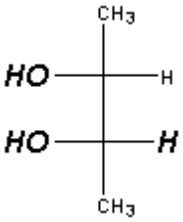
ANS: 4-ethyl-2,2-dimethyl-heptane

Question 7

Complete the following Fischer diagram so that it represents (2*R*,3*S*)-butane-2,3-diol.

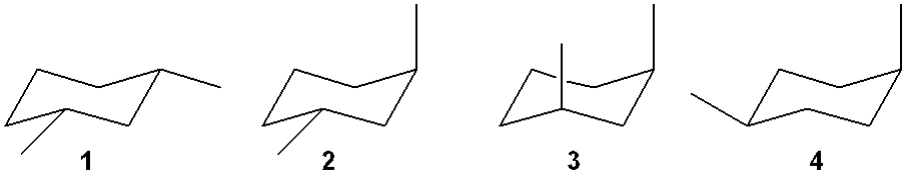


ANS:



Question 8

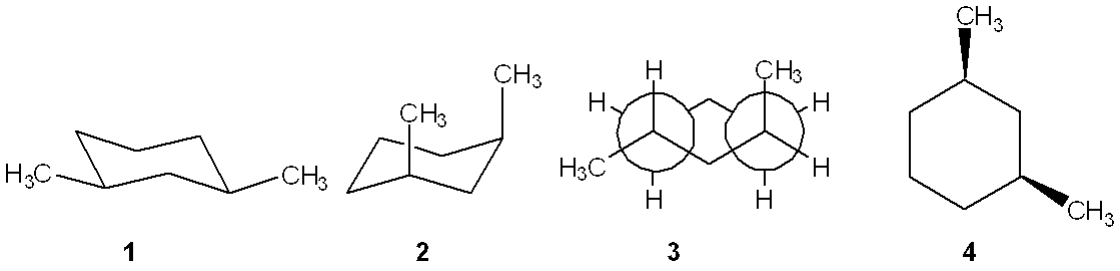
Which of the following structures represents *trans*-1,3-dimethylcyclohexane?



ANS: 2

Question 9

Which one of the following structures represents a different compound from the other three?

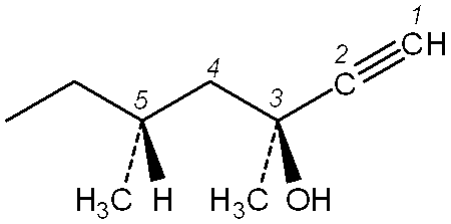


1 **2** **3** **4**

ANS: 3

Question 10

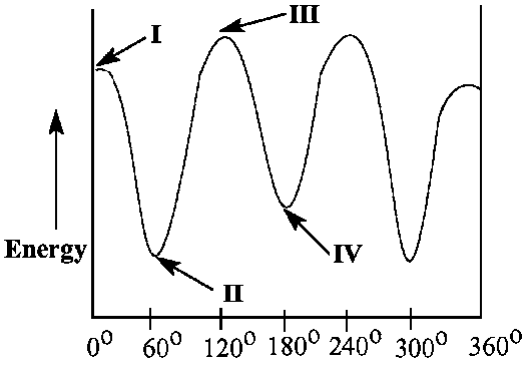
What is the configuration of the two chiral centers in the following molecule?

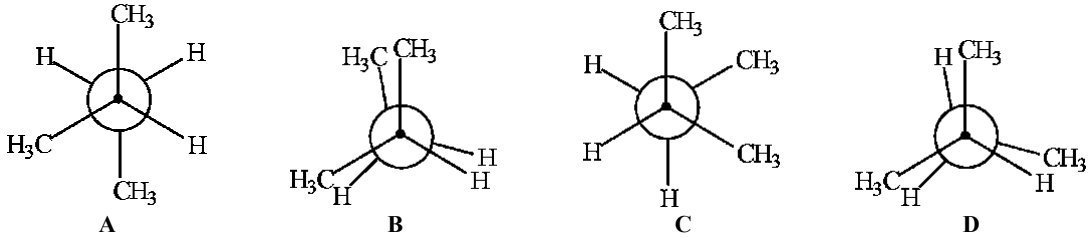


ANS: 3*S*,5*R*

Question 11

Match the Newman projection for the conformation of 2-methylbutane to the indicated position on the potential energy diagram.





Ans: D (I), A (II), B (III) C (IV)

Question 12

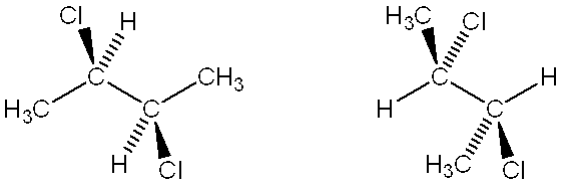
Which of the following compounds is a meso compound?

a. (2*R*,3*R*)-dibromobutane
b. (2*R*,3*S*)-dibromobutane
c. (2*R*,3*S*)-3-bromo-2-butanol
d. (2*R*,3*R*)-3-bromo-2-butanol

ANS: B

Question 13

What is the relationship between the following pair of structures (e.g. enantiomers? diasteromers? etc.)?



ANS: They are diastereomers