

# Chemistry 351

## Quiz #6

October 16, 2019

Name: \_\_\_\_\_

Student Number: \_\_\_\_\_

Section Number: \_\_\_\_\_

TA: \_\_\_\_\_

### INSTRUCTIONS:

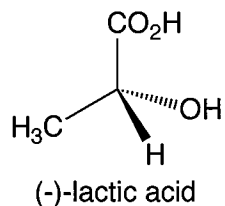
This quiz consists of 5 questions on 3 pages. Please make certain that your quiz is complete.

Write your name, student number, and section number **on both the quiz and answer sheet. Be certain to bubble in your PID digits on the answer sheet. The absence of any of these identification items will result in the deduction of 2 points from your score.**

Questions 1-3 are each worth 1 point. Question 4 is worth 3 points. Question 5 is worth 4 points.

Write your answers to Questions 1-3 on the enclosed answer sheet. **Write your answers to Question 4 and Question 5 in the space provided on this quiz.**

When you complete the quiz, insert your answer sheet into your quiz and then hand both in on the bench in front of the lecture hall in the spot indicated by your section number.

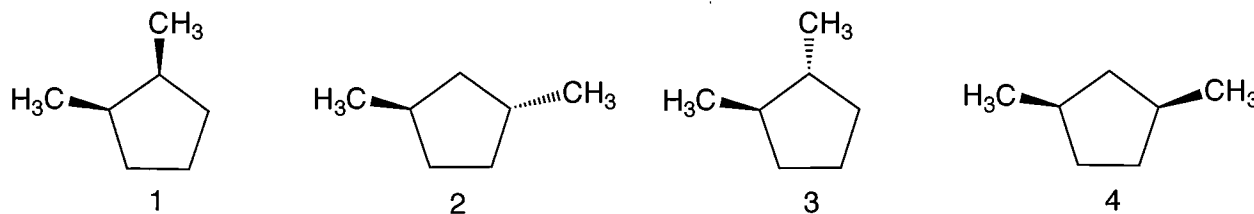


1. Identify which three of the following statements about (-)-lactic acid are TRUE:

1. (-)-Lactic acid has an *R* stereocenter.
2. (-)-Lactic acid has an *S* stereocenter.
3. Reaction of (-)-lactic acid with a base leads to a conjugate base with an *R* stereocenter.
4. Reaction of (-)-lactic acid with a base leads to a conjugate base with an *S* stereocenter.
5. All conjugate bases of (-)-lactic acid will be levorotatory.
6. Conjugate bases of (-)-lactic acid can be dextrorotatory.

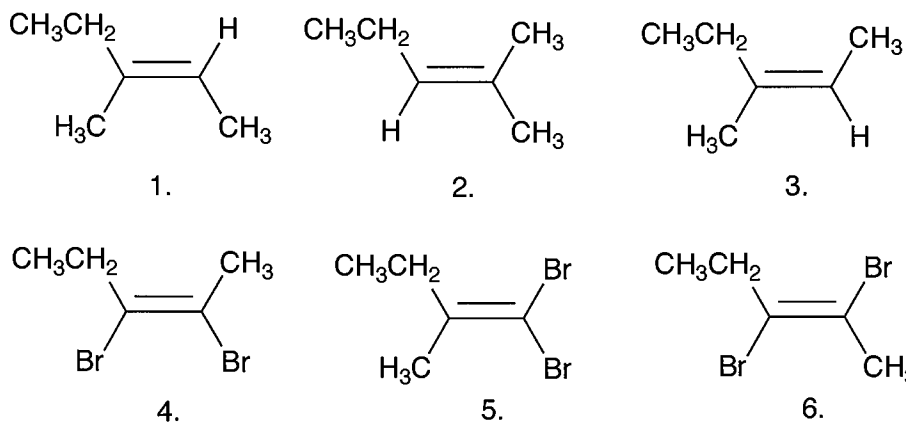
a. 1,3,5    b. 2,3,5    c. 1,4,5    d. 2,4,5    e. 1,3,6    f. 2,3,6    g. 1,4,6    h. 2,4,6

2. Identify which of the following dimethylcyclopentanes is chiral:



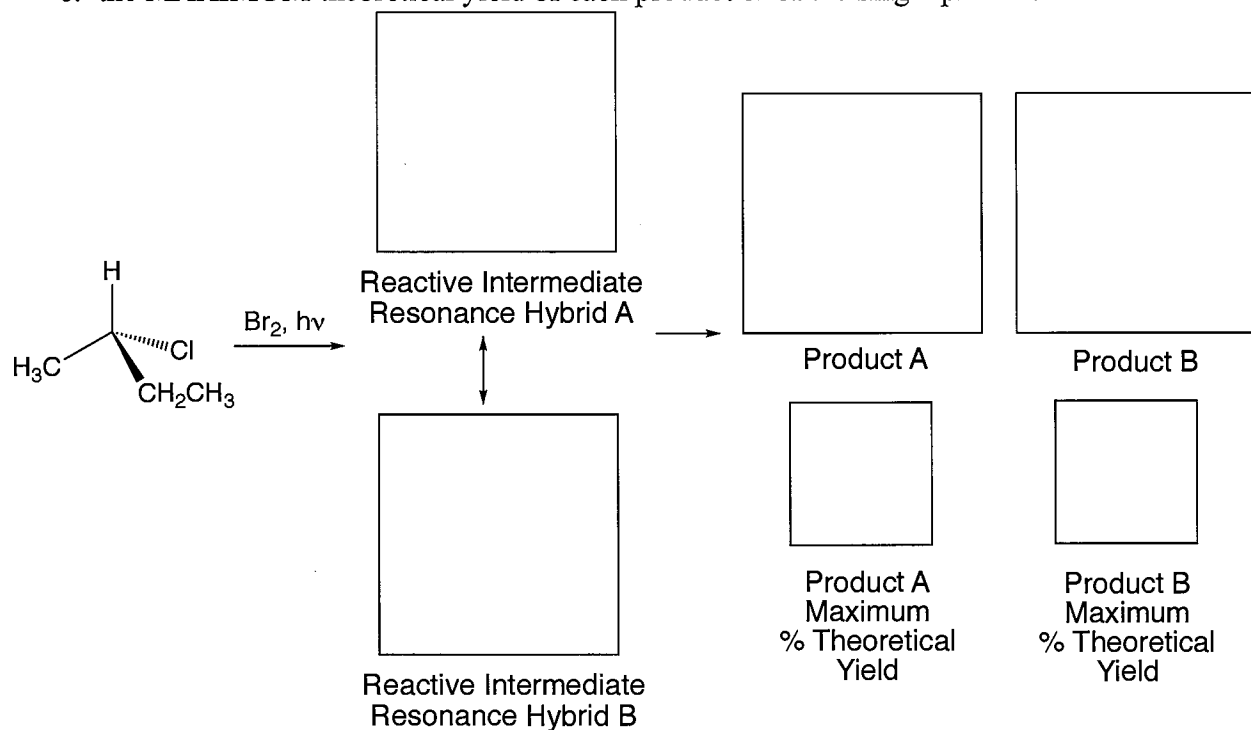
a. 1    b. 2    c. 3    d. 4    e. 1,2    f. 1,3    g. 1,4    h. 2,3    i. 2,4    j. 3,4

3. Which of the following alkenes have a *Z* absolute configuration:



a. 1,4    b. 1,5    c. 1,6    d. 2,4    e. 2,5    f. 2,6    g. 3,4    h. 3,5    i. 3,6    j. 5,6

4. (3 pts total) For the reaction of 2-*S*-chlorobutane **at C-2** with Br<sub>2</sub> and light, provide:
- the structures of the two resonance hybrids of the dominant reactive intermediate,
  - the structure of the single product OR products formed in the reaction,
  - the MAXIMUM theoretical yield of each product or of the single product.



5. (4 pts total) For the structure of (+)-deoxyglucitol, provide in the labeled boxes:
- the absolute configurations of the stereocenters at C-2, C-3 and C-4,
  - the completed Fischer projection of (+)-deoxyglucitol in Box A,
  - the completed Fischer projection of the stereoisomer of (+)-deoxyglucitol in Box B that when dissolved with an equimolar amount of (+)-deoxyglucitol results in a solution that does not rotate plane-polarized light,
  - the completed Fischer projection of a diastereomer of (+)-deoxyglucitol in Box C that has C-2, C-3 and C-4 stereocenters all with *S* absolute configurations.

