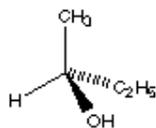
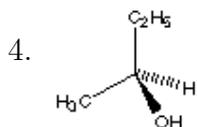
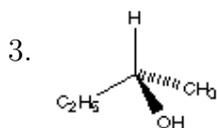
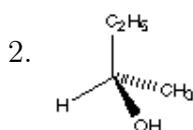
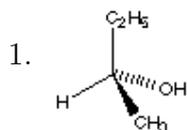


TEST for CHAPTER 7

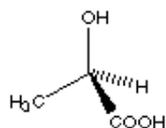
Question 1. The following figure shows (*S*)-butanol.



Choose the enantiomer of it.



Question 2. The following figure illustrates one enantiomer of lactic acid.



Choose the correct configuration of the structure.

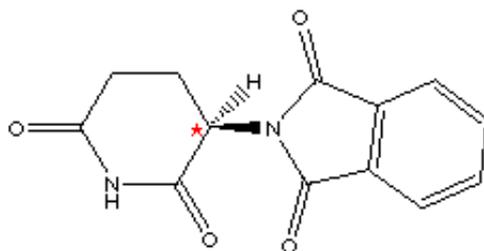
1. *R*-form
2. *S*-form

Question 3. Answer the configuration of the following compound.



1. *R*-form
2. *S*-form

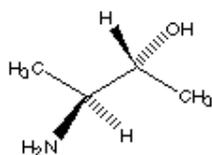
Question 4. The following shows one of the enantiomers of thalidomide.



Is this *R*-form or *S*-form?

1. *R*-form
2. *S*-form

Question 5. The following shows a compound having two stereo centers.



Choose its diastereomer.

- 1.
- 2.
- 3.

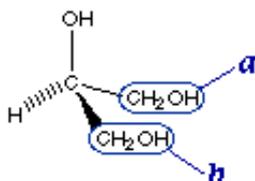
Question 6. What of the followings is meso form?

- 1.
- 2.
- 3.

Question 7. What of the followings are prochiral compounds? (There might be one or more correct answers.)

1. methanol
2. ethanol
3. 1-propanol
4. 2-propanol

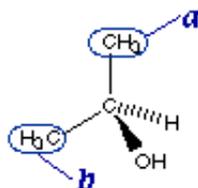
Question 8. The following shows structure of a prochiral compound (glycerol), with the enantiotopic ligands ($-\text{CH}_2\text{OH}$) assigned as “a” and “b”.



Which one of the ligands (a or b) is the *pro R* ligand ?

1. a
2. b

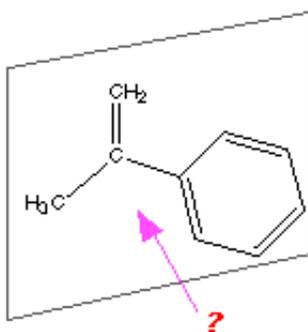
Question 9. The following shows structure of a prochiral compound (2-propanol), with the enantiotopic ligands ($-\text{CH}_3$) assigned as “a” and “b”.



Which one of the ligands (a or b) is the *pro R* ligand ?

1. a
2. b

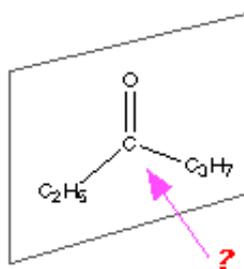
Question 10. The following shows structure of a prochiral alkene.



Is the face indicated with an arrow *Re* or *Si*?

1. *Re*-face
2. *Si*-face

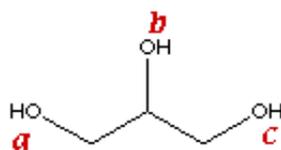
Question 11. The following shows structure of a prochiral ketone.



Is the face indicated with an arrow *Re* or *Si*?

1. *Re*-face
2. *Si*-face

Question 12. The following shows the structure of glycerol.

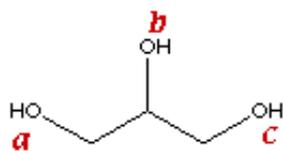


The compound can be converted into a chiral molecule if only one of the three -OH groups is acetylated.

Acetylation of what -OH group makes it chiral? (There might be one or more correct answers.)

1. a
2. b
3. c

Question 13. The following shows the structure of glycerol.

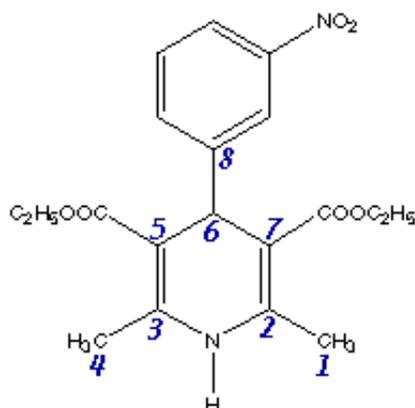


If two of the three -OH groups is acetylated, The compound can be converted into a chiral molecule.

Acetylation of what -OH groups makes it chiral? (There might be one or more correct answers.)

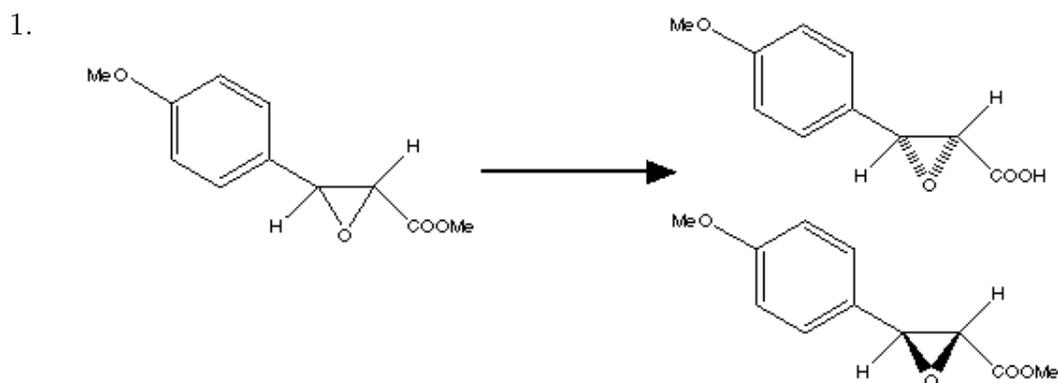
1. a and b
2. b and c
3. c and a

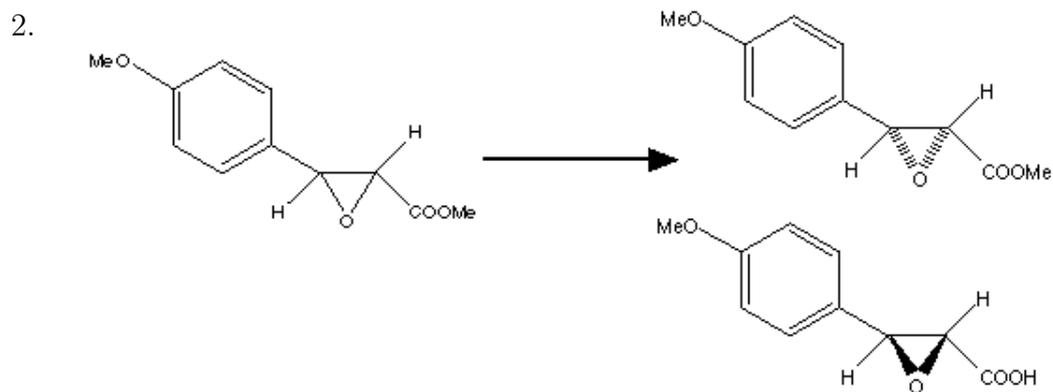
Question 14. The following shows a prochiral diester. When the compound is partially hydrolyzed with a lipase, it is converted to a chiral molecule.



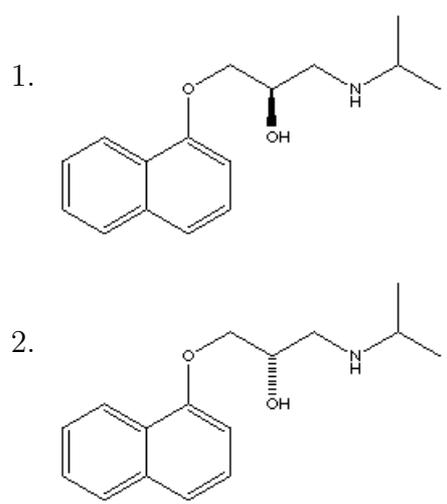
What of the numbered carbons (1-8) will be the stereo center?

Question 15. The key intermediate in the synthesis of diltiazem hydrochloride is a chiral glycidic ester, which is prepared by kinetic resolution with a lipase. Choose the correct reaction scheme.

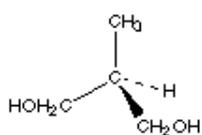




Question 16. Which one of the followings is the active enantiomer of propranolol?



Question 17. The following is a prochiral diol.



If the hydroxy group on the *pro R* ligand of this compound is acylated, what the stereo configuration of the generated monoester will be?

1. *R*-form
2. *S*-form

Question 18. Chiral pantoic acid can be prepared by kinetic resolution of racemic pantonyl lactone using lactonase. When *R*-pantoic acid is the desired product, which of the following reactions is suitable?

