

SLE155 Chemistry for the Professional Sciences

Burwood and Geelong



Practice Questions

Stereochemistry

Chirality

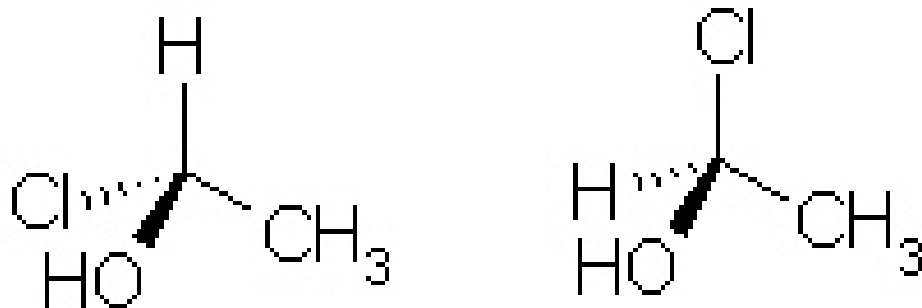
Enantiomers

Diastereomers

R and S configuration

Q 1

The following structures are enantiomers.

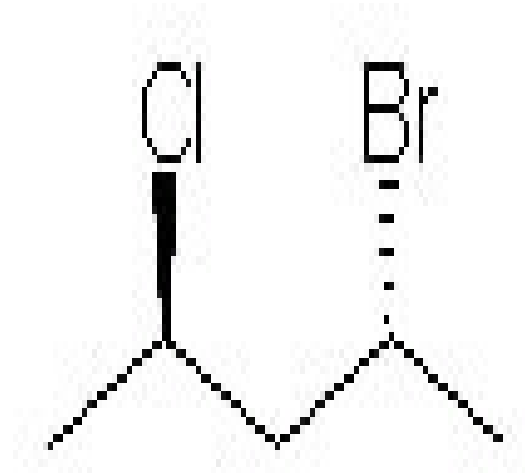
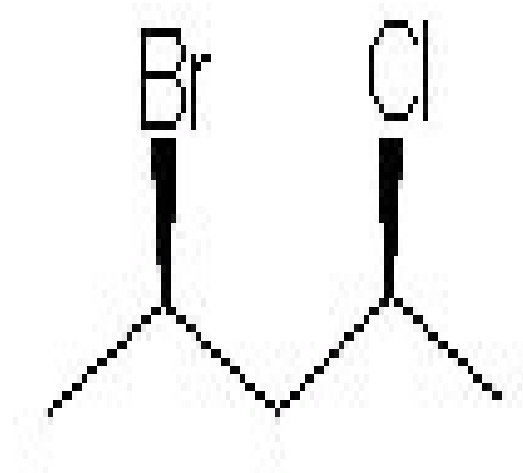


- *a. True
- b. False

Q 2

The following structures are diastereomers.

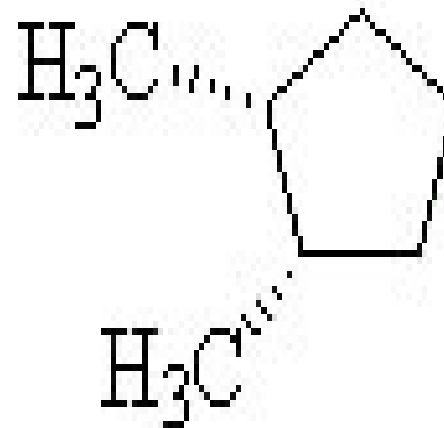
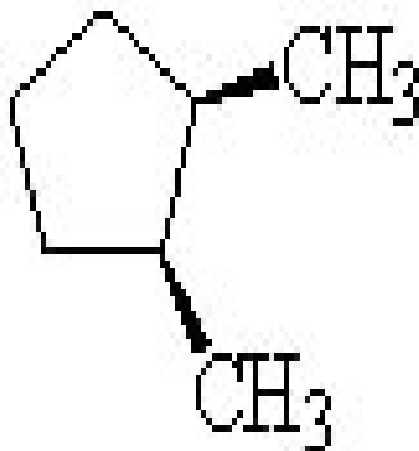
- *a. True**
- b. False**



Q 3

The following structures are diastereomers.

- a. True
- *b. False

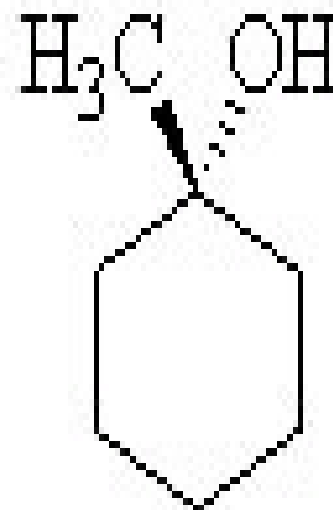
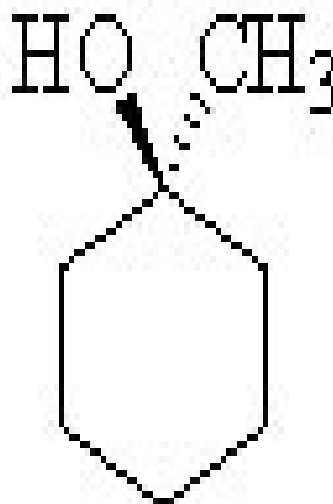


Q 4

The following structures are a pair of enantiomers.

a. True

*b. False



Q 5

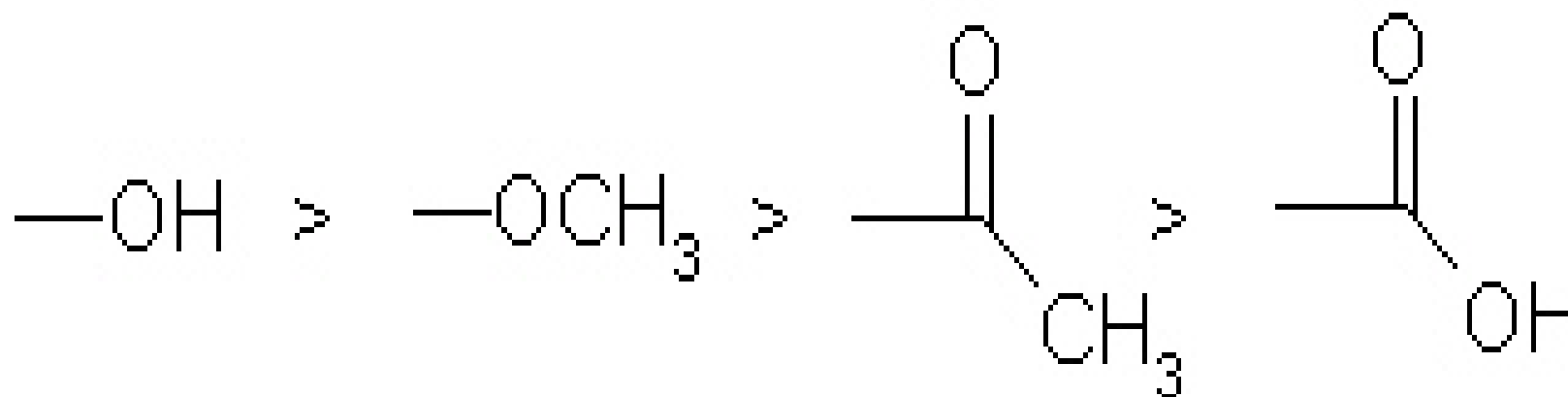
Meso compounds are achiral.

*a. True

b. False

Q 6

The following groups are listed in decreasing order of priority.

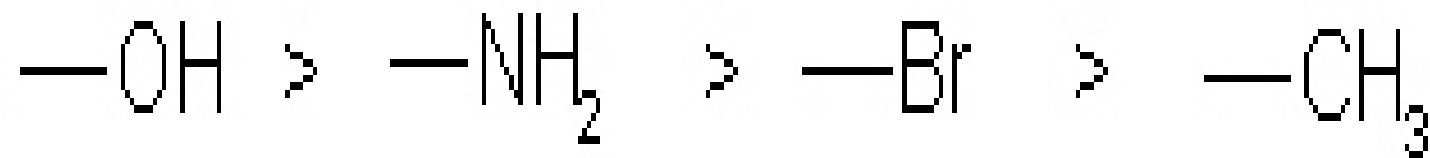


a. True

*b. False

Q7

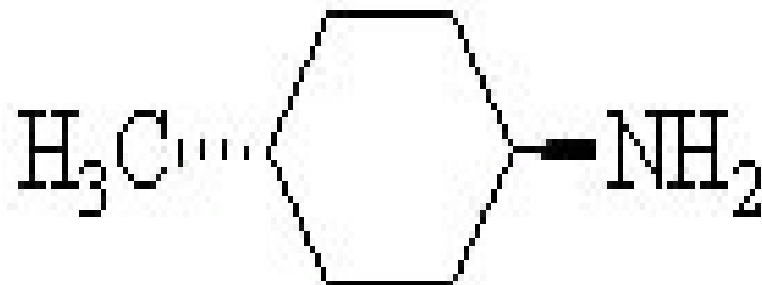
The following groups are listed in decreasing order of priority.



- a. True
- *b. False

Q 8

The following structure is achiral.

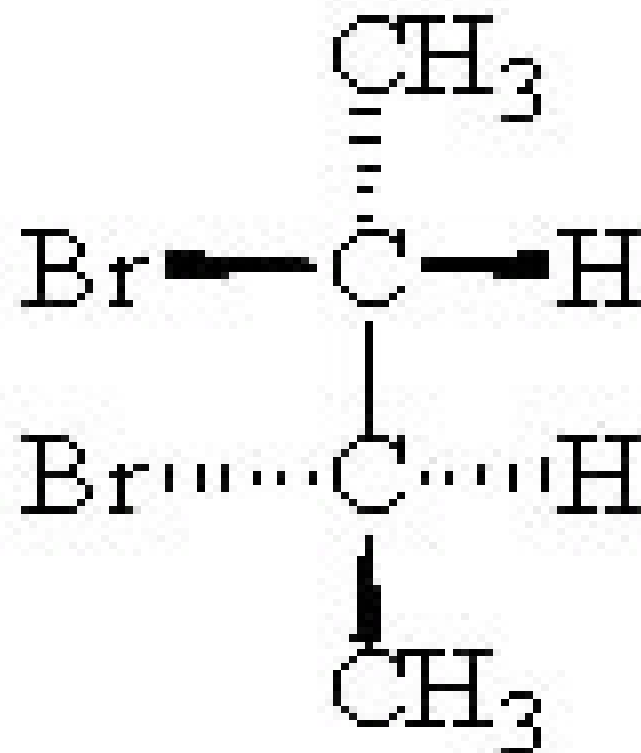


- *a. True
- b. False

Q 9

The following structure is a meso compound.

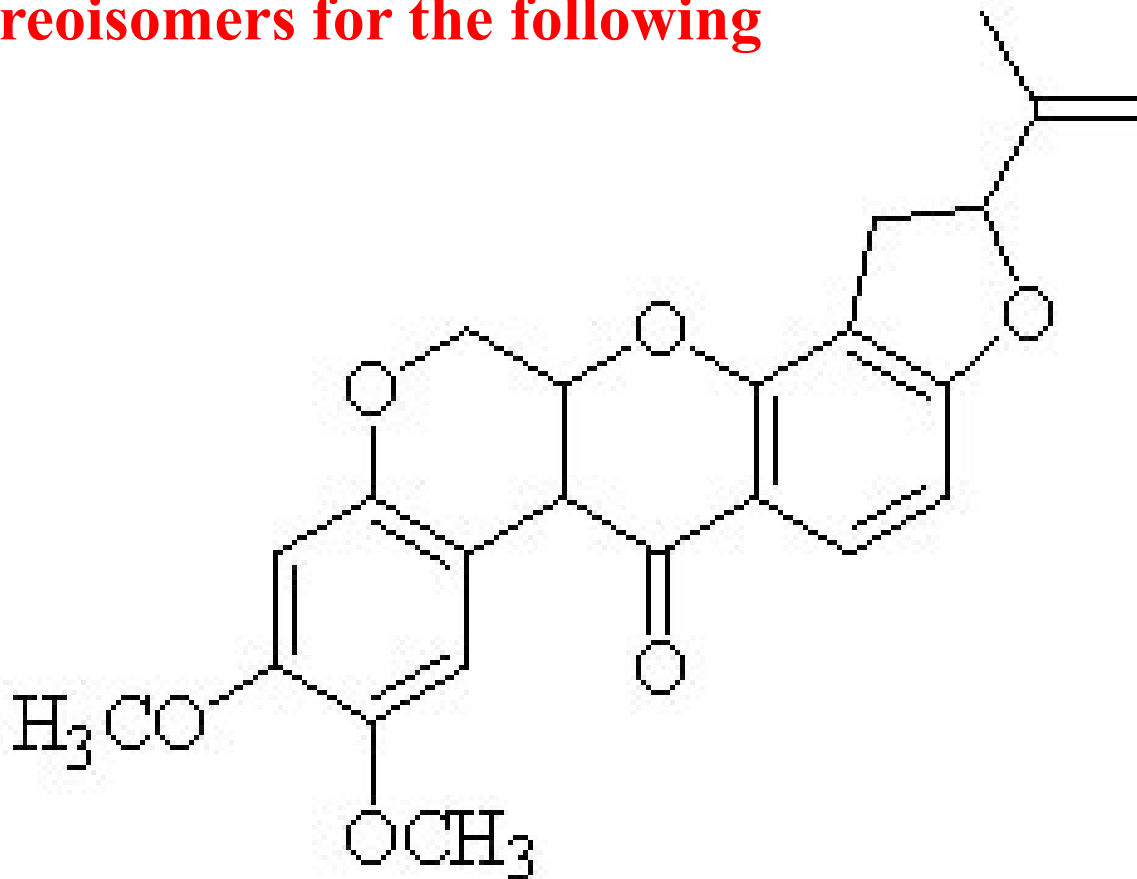
- a. True
- *b. False



Q 10

There are 8 possible stereoisomers for the following compound.

- *a. True
- b. False



Q 11

Which compounds contain stereocentres?

- I 1-chloropentane
- II. 2-chloropentane
- III. 3-chloropentane
- IV. 1,2-dichloropentane

- a. I, II
- *b. II, IV
- c. I, III
- d. III, IV

Q 12

Which of the following compounds are chiral?

- I. 2-methylpentane
- II. Chlorocyclohexane
- III. 3-methyl-2-butanol
- IV. 2-hydroxypropanoic acid

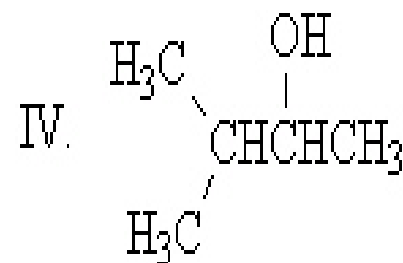
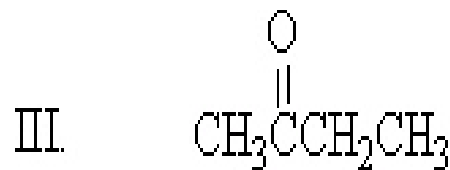
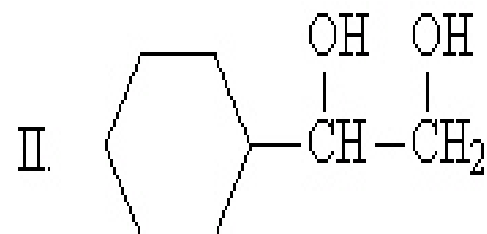
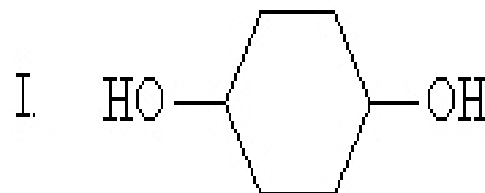
- a. II, III and IV
- b. I, III and IV
- c. I and IV
- *d. III and IV

Q 13

Which compounds contain stereocentres?

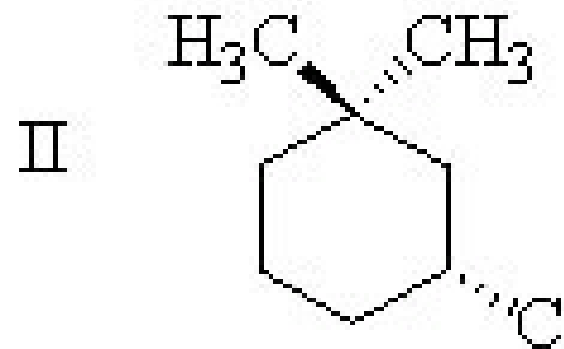
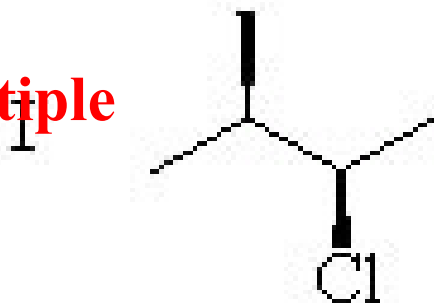
- a. I, II
- b. III, IV
- c. I, III
- *d. II, IV

Answer: d

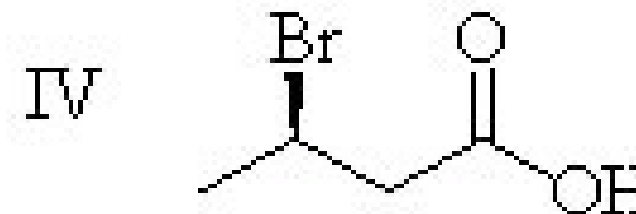
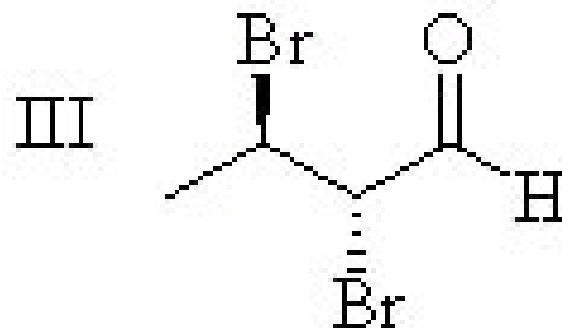


Q 14

Which compounds have multiple stereocentres?



- a. I and III
- b. II and III
- c. III and IV
- *d. III only



Q 15

How many stereoisomers are possible for 4-bromocyclohexanol?

- a. 1
- b. 4
- c. 3
- *d. 2

Q 16

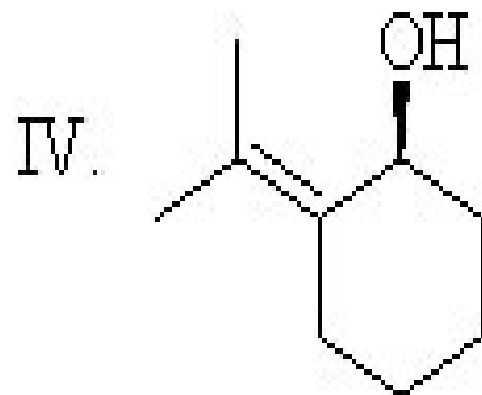
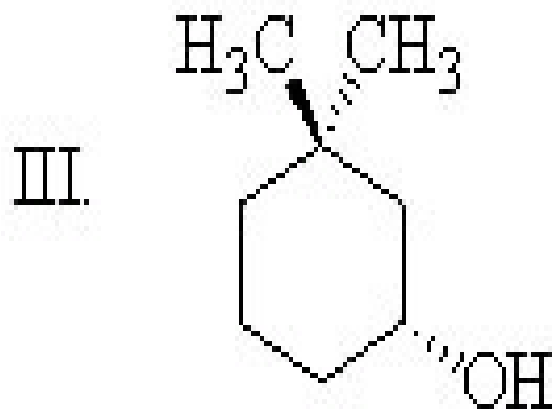
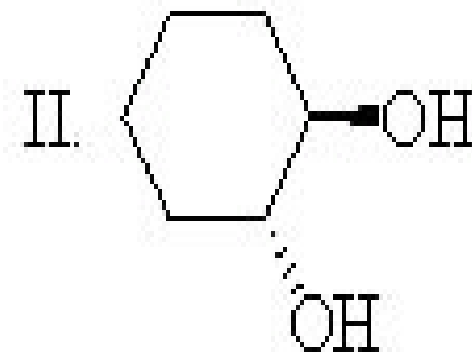
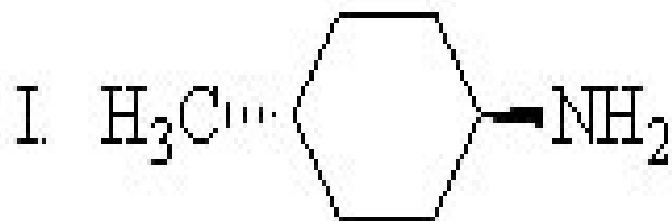
How many stereoisomers are possible for 2,3-butanediol?

- a. 1
- b. 2
- *c. 3
- d. 4

Q 17

Which structures are chiral?

- a. I, III, IV
- *b. II, III, IV
- c. I, II and III
- d. I, II and IV

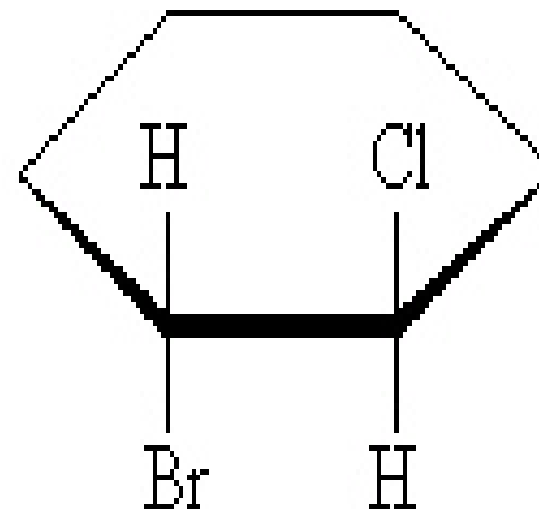
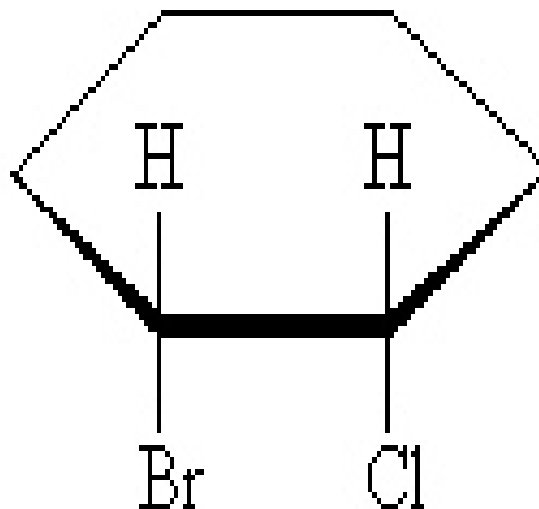


Q 18

What is the relationship between these two structures?

- a. identical structures
- b. enantiomers
- *c. diastereomers
- d. constitutional isomers

Answer: c



Q 19

How many pairs of enantiomers are possible for cortisone acetate?

- a. 256
- b. 128
- c. 64
- *d. 32

Answer: d

