SLE155 Chemistry for the Professional Sciences

Burwood and Geelong

Practice Questions Week 6

Hydrocarbons

Alkanes

Alkenes

Alkynes

Arenes

Q 1

Pentane and cyclopentane are constitutional isomers.

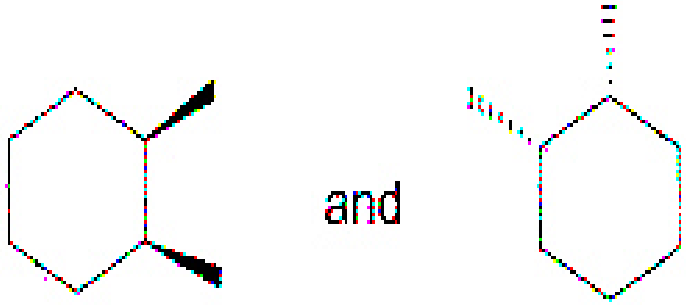
a. True

b. False

Q 2

The following structures represent the same molecule

a. True
b. False



Q 3

2,3-dimethyl-3-hexene occurs as E and Z isomers.

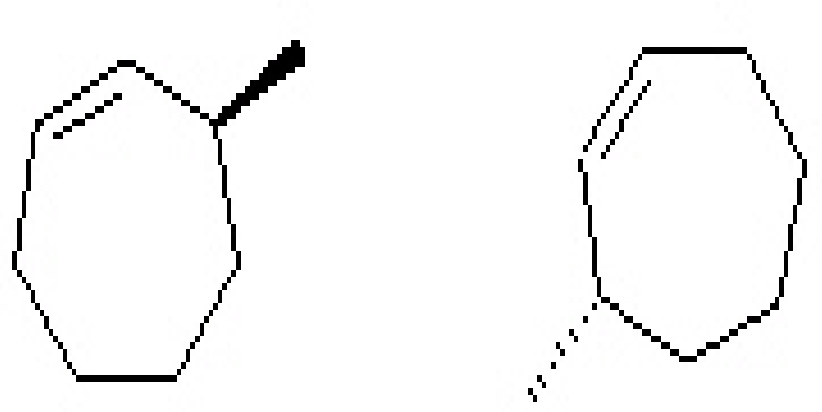
a. True

b. False

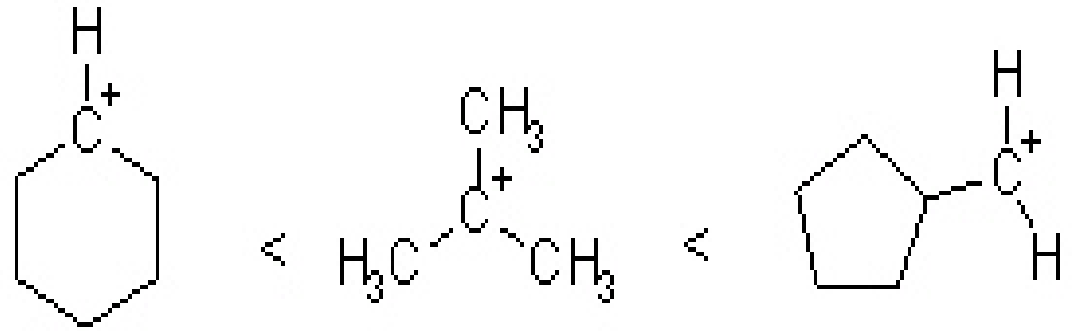
Q 4

The following structures represent isomers.

a. True
b. False



Q 5

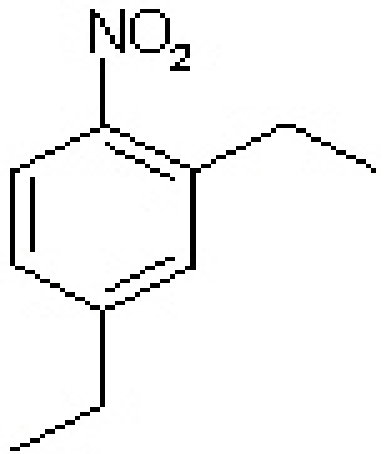


The following carbocations are listed in increasing order of stability (least first).

a. True
b. False

Q 6

The name of the following structure is 3,5-dibromobenzoic acid



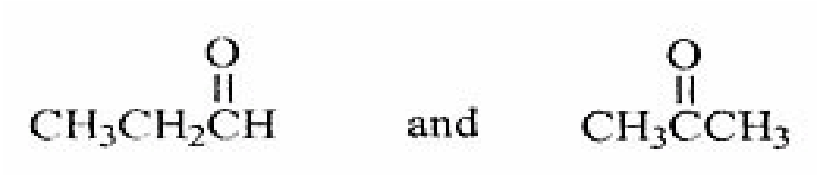
a. True
b. False

Q 7

Which of the following molecules are constitutional isomers?

a. 

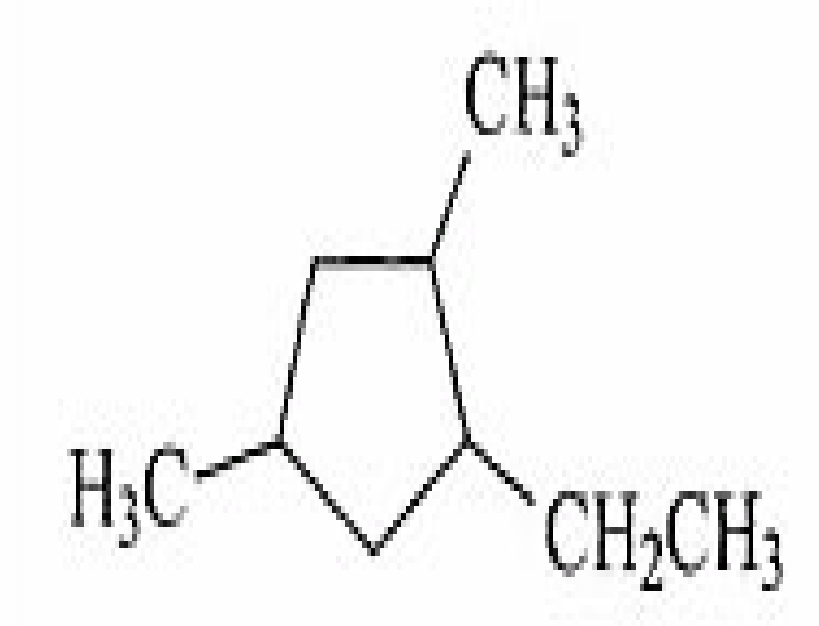
b. 

*c. 

d. 

Q 8

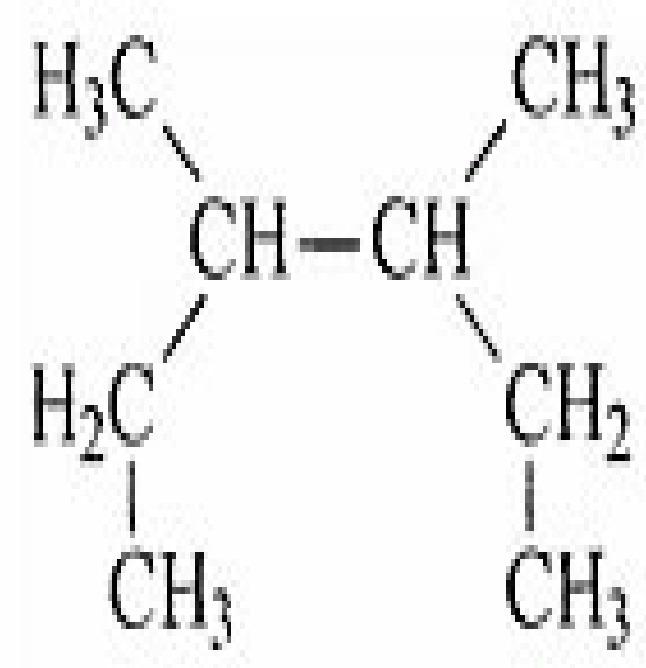
Which is the IUPAC name for the following cyclohexane?



a. 1-ethyl-2,4-dimethylcyclopentane
b. 1,3-dimethyl-5-ethylcyclopentane
c. 2,4-dimethyl-1-ethylcyclopentane
d. 1-ethyl-3,5-dimethylcyclopentane

Q 9

Which is the IUPAC name for the following compound?

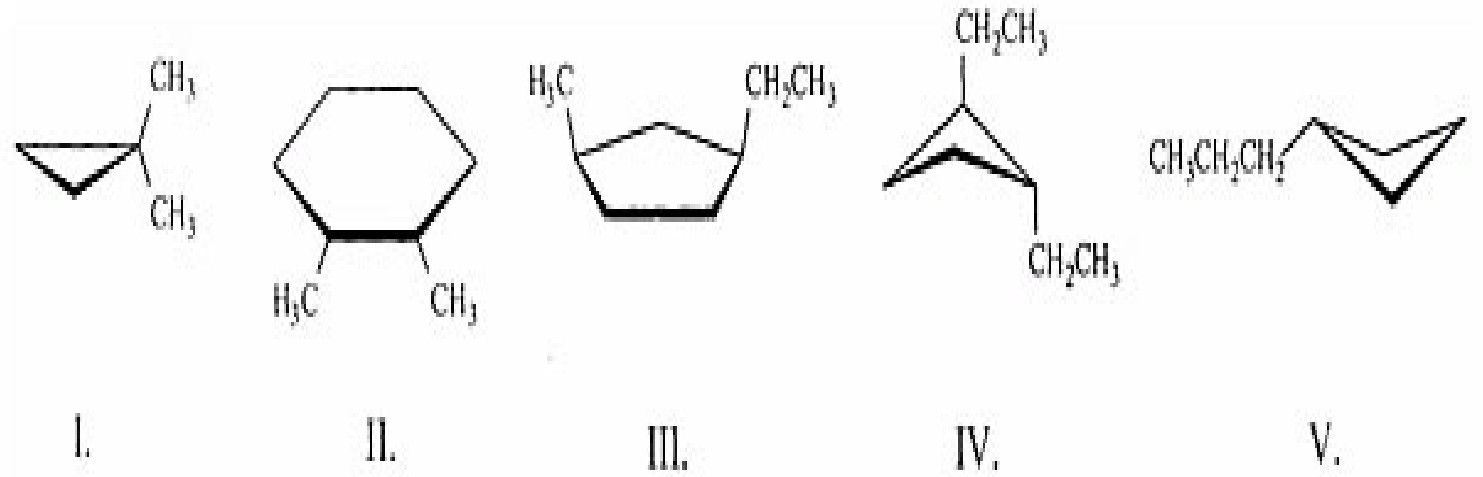


a. 2-ethyl-3-methylpentane
b. 3,4-dimethylhexane
c. 2,3-diethylbutane
d. 3-methyl-4-ethylpentane

Q 10

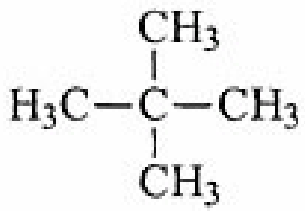
Which of the following cycloalkanes show cis-trans isomerism?

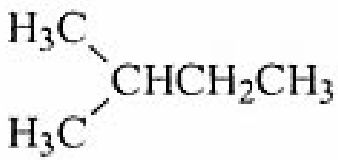
a. I, V
b. I, II, V
c. II, III, V
d. II, III, IV



Q 11

Which compound has the lowest boiling point?

*a. 

b. 

c. $CH_3CH_2CH_2CH_2CH_3$

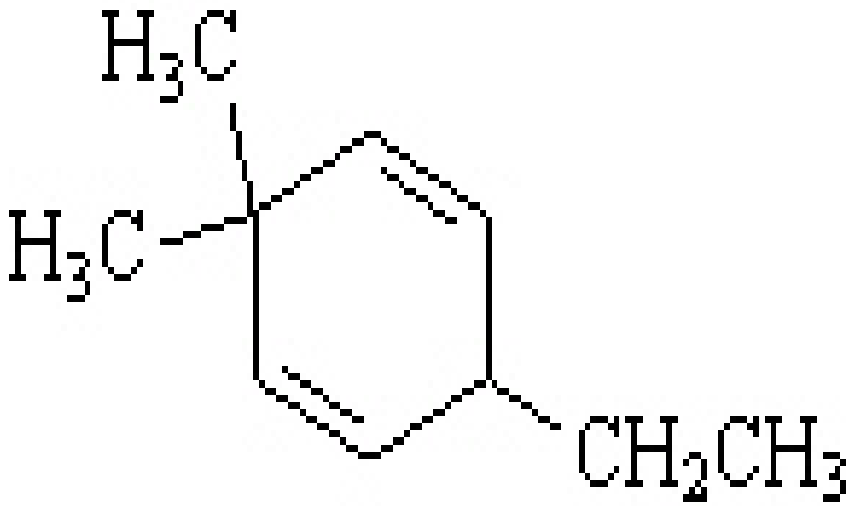
d. 

Answer: a

Q 12

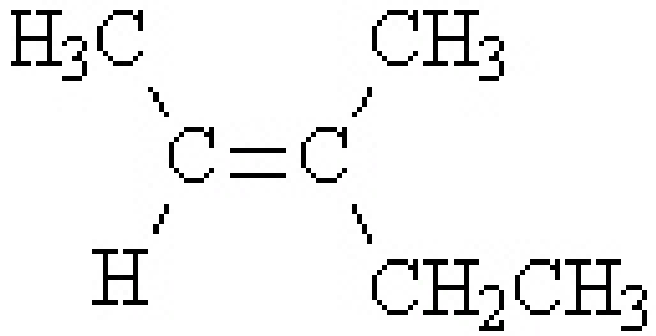
Which is the IUPAC name for the following compound?

a. 1,1-dimethyl-4-ethyl-2,5-cyclohexadiene
b. 1-ethyl-4,4-dimethyl-2,5-cyclohexadiene
c. 3-ethyl-6,6-dimethyl-1,4-cyclohexadiene
d. 6-ethyl-3,3-dimethyl-1,4-cyclohexadiene



Q 13

Which is the correct name for the following compound?



a. E-3-methyl-2-pentene

b. Z-3-methyl-3-pentene

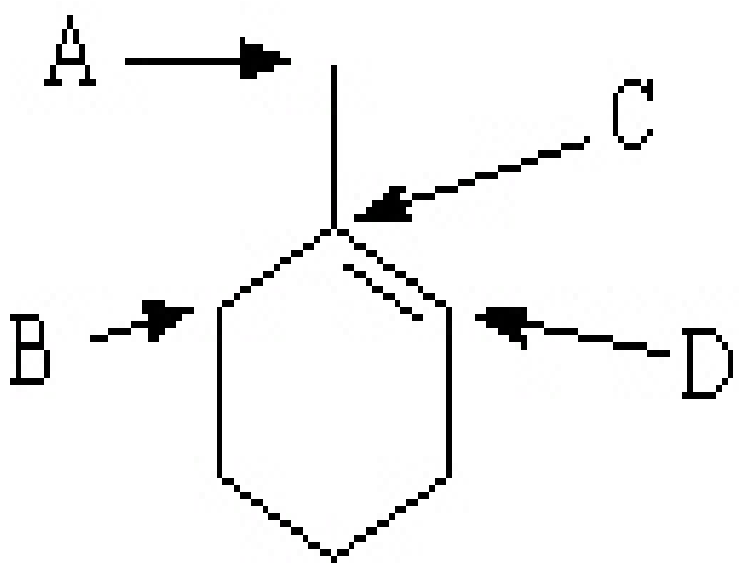
c. E-2-ethyl-2-butene

d. Z-3-ethyl-2-butene

Q 14

Using Markovnikov's rule, predict the position of the Cl atom in the major product from the reaction of 1-methylcyclohexene with HCl.

a. A
b. B
c. C
d. D



Q 15

Which is the major product from acid catalyzed hydration of 2-methyl-2-pentene?

a. 2-methyl-3-pentanol

b. 3-methyl-3-pentanol

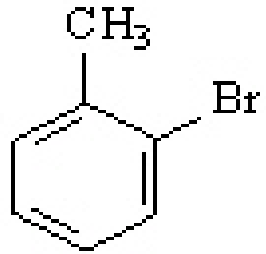
c. 4-methyl-2-pentanol

d. 2-methyl-2-pentanol

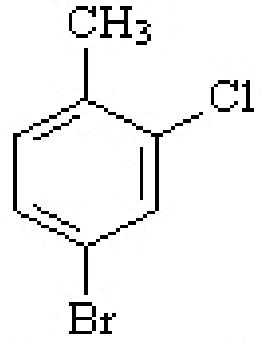
Q 16

Which structures have the correct IUPAC names?

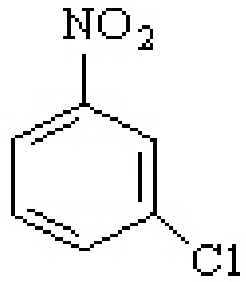
a. I, II
b. III, IV
c. II, III
d. I, IV



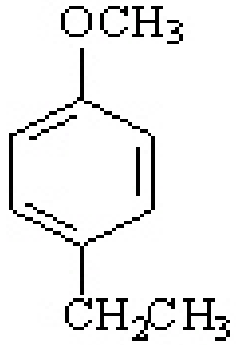
I. 2-bromotoluene



II. *para* methyl, *meta* chloro bromobenzene



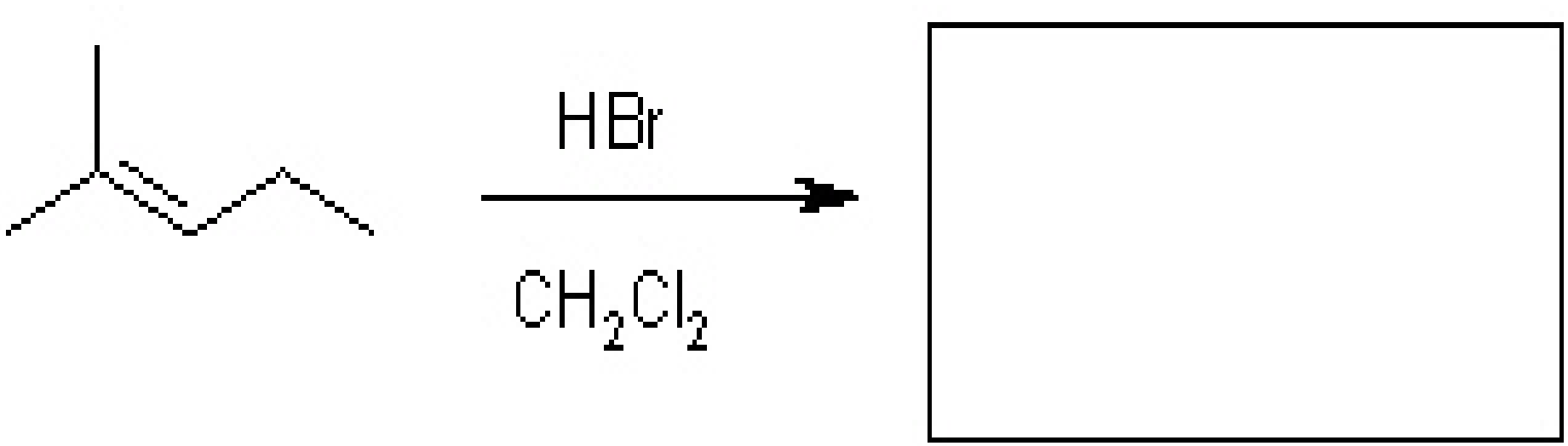
III. *meta* chloroaniline



IV. *para* ethylanisole

Q 17

Complete the following reaction by providing the major product.



Q 18

The reagent that completes the following reaction is?