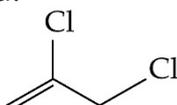


Summary Quiz (Chapter 23)

Section A: Multiple Choice

1. Which of the following homologous series are hydrocarbons?
 (1) Alkanes (2) Alkenes (3) Alkanols
 A. (1) and (2) only B. (1) and (3) only
 C. (2) and (3) only D. (1), (2) and (3)

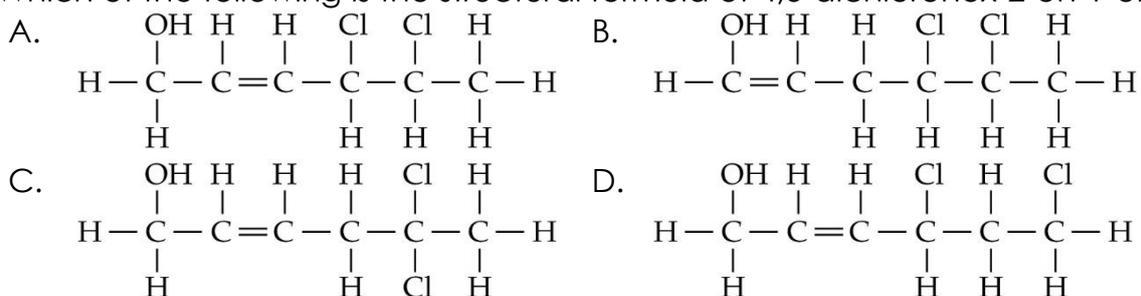
2. Consider the following compound:



What is the systematic name of the compound?

- A. 1,2-dichloropropene B. 2,3-dichloropropene
 C. 1,2-dichloroprop-2-ene D. 2,3-dichloroprop-2-ene
3. Which of the following statements about propane and butane is INCORRECT?
 A. They have the same general formula.
 B. They are both insoluble in water.
 C. They have the same density.
 D. They both burn in air to give carbon dioxide.
4. Which of the following systematic names of a compound is INCORRECT?
 A. 2,2-dimethylbutane B. 1,2,2-trimethylpropane
 C. 2,2-dimethyl-3-ethylhexane D. 2,3-dimethyl-3,5-dimethyloctane
5. Which of the following statements about a homologous series of organic compounds are correct?
 (1) All members have similar chemical properties.
 (2) The boiling points increase with molecular sizes.
 (3) The relative molecular masses of consecutive members differ by 12.
 A. (1) and (2) only B. (1) and (3) only
 C. (2) and (3) only D. (1), (2) and (3)
6. Which of the following statements about the compound $\text{HOCH}_2\text{CH}_2\text{COOH}$ is correct?
 A. It is a hydrocarbon.
 B. It has two hydroxyl groups.
 C. It belongs to the same homologous series as butanoic acid.
 D. It turns moist blue litmus paper red.
7. Which of the following compounds have the same molecular formula as butan-2-ol?
 (1) Methylpropan-2-ol (2) Butanoic acid (3) Butan-1-ol
 A. (1) and (2) only B. (1) and (3) only
 C. (2) and (3) only D. (1), (2) and (3)

8. Which of the following is the structural formula of 4,5-dichlorohex-2-en-1-ol?



Section B: Structural Question

The following table shows some information of three compounds:

Compound	Melting point (°C)	Boiling point (°C)
CH ₃ CH ₂ CH ₃	-188	-42
CH ₃ CH ₂ CH ₂ CH ₃	-138	-0.5
CH ₃ CH ₂ CH ₂ CH ₂ CH ₃	-130	36

- (a) Name the homologous series that the three compounds belong to.
- (b) Which of the above compounds is a liquid at room conditions?
- (c) Explain the difference of boiling points of the three compounds.
- (d) The molecular formula of compound A is CH₃CH₂CHClCH₂CH₃.
- Give the skeletal formula of compound A.
 - Do compound A and the three compounds in the above table belong to the same homologous series? Explain your answer.

The End

Suggested Answer**Section A**

1.	A	5.	A
2.	B	6.	D
3.	C	7.	B
4.	B	8.	A

Section B

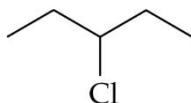
(a) Alkanes

(b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$

(c) On ascending the homologous series, the number of carbon atoms in the molecule increases.

The molecular size increases, so the van der Waals' forces between the molecules become stronger.

(d) (i)



(ii) They do not belong to the same homologous series because they have different functional groups / they cannot be represented by the same general formula.

The End