

Exercise 9.11 – Organic structure

Q911-01 Which element is present in all organic compounds?

- A. carbon
 - B. nitrogen
 - C. oxygen
 - D. phosphorous
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Q911-02 Which statement explains why the element carbon forms so many compounds?

- A. Carbon atoms combine readily with oxygen.
 - B. Carbon atoms have very high electronegativity.
 - C. Carbon readily forms ionic bonds with other carbon atoms.
 - D. Carbon readily forms covalent bonds with other carbon atoms.
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Q911-03 In a molecule of CH₄, the hydrogen atoms are spatially oriented toward the centers of a regular:

- A. pyramid
 - B. tetrahedron
 - C. square
 - D. rectangle
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Q911-04 What is the maximum number of covalent bonds than an atom of carbon can form?

- A. 1
 - B. 2
 - C. 3
 - D. 4
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Q911-05 What is the total number of sigma bonds found in the following compound?



- A. 8
 - B. 10
 - C. 11
 - D. 15
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Q911-06 What is the total number of pi bonds found in the following compound?



- A. 1
 - B. 2
 - C. 3
 - D. 4
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Q911-07 Which of the following molecules has the shortest carbon to carbon bond distance?

- A. H₃C-CH₃
 - B. H₂C=CH₂
 - C. HC≡CH
 - D. H₂C=C=O
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Q911-08 Which of the following statements best describes a functional group?

- A. It is an atom or group of atoms which gives a compound its characteristic properties.
 - B. It is a highly reactive group of atoms with noble gas configurations.
 - C. It is a highly reactive group of atoms which lack noble gas configurations.
 - D. It is the non-polar part of an organic molecule.
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Q911-09 Which of the following is the best description of a 'linkage'?

- A. It is an atom or group of atoms at the end of a carbon chain.
 - B. It is a highly reactive group of atoms with noble gas configurations.
 - C. It is an atom or group of atoms that joins two hydrocarbon chains together.
 - D. It is an atom or group of atoms that, together with another atom or group of atoms, makes up a functional group.
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Q911-10 Enthalpies of reaction for example, combustion, can be calculated using average bond enthalpies or enthalpies of formation. The two methods give closer results for cyclohexane than they do for benzene. Explain this difference.
