

Exercise 0.13 – Covalent bonding

Q013-01 The most likely molecule to be formed by the reaction of boron and chlorine is:

- A. BCl
 - B. BCl₃
 - C. BCl₄
 - D. BCl₆
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Q013-02 In which molecule would you find a triple covalent bond?

- A. O₂
 - B. N₂
 - C. O₃
 - D. FeCl₃
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Q013-03 Which diatomic species should have the greatest bond dissociation energy?

- A. H₂
 - B. F₂
 - C. NO
 - D. CO
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Q013-04 When C₂H₄, C₂H₂ and C₂H₆ are arranged in order of increasing C-C bond length what is the correct order?

- A. C₂H₆, C₂H₂, C₂H₄
 - B. C₂H₄, C₂H₂, C₂H₆
 - C. C₂H₂, C₂H₄, C₂H₆
 - D. C₂H₄, C₂H₆, C₂H₂
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Q013-05 Which statement is correct about two elements, whose atoms form a covalent bond with each other.

- A. The elements are metals
 - B. The elements are non-metals
 - C. The elements have very low electronegative values
 - D. The elements have very different electronegativity values
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Q013-06 Which of the following increases for the bonding between carbon atoms in the sequence of molecules C₂H₆, C₂H₄, C₂H₂?

- I - Number of bonds
- II - Length of bonds
- III - Strength of bonds

- A. I only
 - B. I and III only
 - C. III only
 - D. I, II and III
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Q013-07 How do bond length and bond strength change as the number of bonds between two atoms increase?

- | | bond length | bond strength |
|---|-------------|---------------|
| A | increases | increases |
| B | increases | decreases |
| C | decreases | decreases |
| D | decreases | increases |
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Q013-08 The length of the bond between carbon and oxygen is shortest in:

- A. CO
 - B. CO₂
 - C. CH₃CH₂OH
 - D. CH₃CHO
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Q013-09 Which molecule has the longest nitrogen - nitrogen bond length?

- A. N₂
 - B. N₂F₂
 - C. N₂H₄
 - D. N₂H₂
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Q013-10 In which of the following is there at least one double bond?

- I - O₂
 - II - CO₂
 - III - C₂H₄
- A. I only
 - B. III only
 - C. II and III only
 - D. I,II and III
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