

# General Chemistry I Unit 03: Bonding

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## 1. Unit 03: Bonding

## 4. Chapter: Unit 03: Bonding

### 1. Unit 03: Bonding Questions

#### 4.1.1. According to Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

According to Valence Shell Electron Pair Repulsion Theory (VSEPR), what number of bonded atoms is normally expected to produce a tetrahedral geometry?

Please choose only one answer:

- three
- four
- five
- six

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#### 4.1.2. According to Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

According to Valence Shell Electron Pair Repulsion Theory (VSEPR), what number of bonded atoms is normally expected to produce a trigonal planar geometry?

Please choose only one answer:

- three
- four
- five
- six

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### 4.1.3. According to Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

According to Valence Shell Electron Pair Repulsion Theory (VSEPR), what number of bonded atoms is normally expected to produce a trigonal pyramidal geometry?

Please choose only one answer:

- three
- four
- five
- six

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#### 4.1.4. Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), what is the molecular geometry of  $\text{BeCl}_2$ ?

Please choose only one answer:

- linear
- trigonal planar
- tetrahedral
- trigonal bipyramid

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

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#### 4.1.5. Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), what is the molecular geometry of  $\text{PI}_5$ ?

Please choose only one answer:

- linear
- trigonal planar
- tetrahedral
- trigonal bipyramid

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

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#### 4.1.6. Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), what is the molecular geometry of  $\text{CF}_4$ ?

Please choose only one answer:

- linear
- trigonal planar
- tetrahedral
- trigonal bipyramid

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

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#### 4.1.7. Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), which of the following corresponds most closely to the geometry of the  $\text{IBr}_2^-$  ion?

Please choose only one answer:

- linear
- "T-shaped"
- bent (bond angle  $120^\circ$ )
- bent (bond angle  $109.5^\circ$ )

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

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#### 4.1.8. Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), ...

Author: Joanna Smithback

Based on the Valence Shell Electron Pair Repulsion Theory (VSEPR), which of the following corresponds most closely to the molecular geometry of SF<sub>2</sub>?

Please choose only one answer:

- linear
- "T-shaped"
- bent (bond angle 120°)
- bent (bond angle 109.5°)

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

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#### 4.1.9. Eighteen electrons are present in the Lewis structure of which of t...

Author: Joanna Smithback

Eighteen electrons are present in the Lewis structure of which of the following molecules?

Please choose only one answer:

- $\text{SO}_2$
- $\text{N}_2\text{O}$
- $\text{CO}_2$
- HCN

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#### 4.1.10. How many lobes exist for a d<sub>yz</sub> orbital?

Author: Joanna Smithback

How many lobes exist for a d<sub>yz</sub> orbital?

Please choose only one answer:

- 1
- 2
- 3
- 4

Check the answer of this question online at QuizOver.com:

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#### 4.1.11. How many p orbitals are there?

Author: Joanna Smithback

How many p orbitals are there?

Please choose only one answer:

- 1
- 2
- 3
- 4

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#### 4.1.12. How many valence electrons are expected for an element that is in g...

Author: Joanna Smithback

How many valence electrons are expected for an element that is in group 5A of the periodic table?

Please choose only one answer:

- three
- five
- eight
- ten

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4.1.13. In which of the following pairs of molecules do both members of the...

Author: Joanna Smithback

In which of the following pairs of molecules do both members of the pair have the same molecular geometry?

Please choose only one answer:

- $\text{SO}_2$  and  $\text{CO}_2$
- $\text{H}_2\text{S}$  and  $\text{HCN}$
- $\text{NH}_3$  and  $\text{SO}_3$
- $\text{H}_2\text{O}$  and  $\text{OF}_2$

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#### 4.1.14. What is the approximate H-B-H angle in BH<sub>3</sub>?

Author: Joanna Smithback

What is the approximate H-B-H angle in BH<sub>3</sub>?

Please choose only one answer:

- 90°
- 109°
- 120
- 180°

Check the answer of this question online at QuizOver.com:

Question: [What is the approximate H-B-H angle in BH](#) Joanna Smithback @Saylor

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#### 4.1.15. What is the approximate I-N-I angle in $\text{NI}_3$ ?

Author: Joanna Smithback

What is the approximate I-N-I angle in  $\text{NI}_3$ ?

Please choose only one answer:

- $90^\circ$
- $109.5^\circ$
- $120^\circ$
- $180^\circ$

Check the answer of this question online at QuizOver.com:

Question: [What is the approximate I-N-I angle in NI](#) Joanna Smithback @Saylor

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#### 4.1.16. What is the hybridization of the oxygen atom in water?

Author: Joanna Smithback

What is the hybridization of the oxygen atom in water?

Please choose only one answer:

- sp
- $sp^2$
- $sp^3$
- The oxygen atom does not hybridize in water.

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#### 4.1.17. Which molecule contains a double bond?

Author: Joanna Smithback

Which molecule contains a double bond?

Please choose only one answer:

- SF<sub>2</sub>
- CF<sub>4</sub>
- COCl<sub>2</sub>
- none of the above

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#### 4.1.18. Which of the following best describes the variation of the electron...

Author: Joanna Smithback

Which of the following best describes the variation of the electronegativity of the elements with respect to their position on the periodic table?

Please choose only one answer:

- increases across a period; increases down a group
- increases across a period; decreases down a group
- decreases across a period; increases down a group
- decreases across a period; decreases down a group

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#### 4.1.19. Which of the following combinations of two elements is most likely ...

Author: Joanna Smithback

Which of the following combinations of two elements is most likely to produce highly ionic bonds?

Please choose only one answer:

- nitrogen and oxygen
- nitrogen and fluorine
- boron and nitrogen
- lithium and fluorine

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#### 4.1.20. Which of the following combinations of two elements is most likely ...

Author: Joanna Smithback

Which of the following combinations of two elements is most likely to produce covalent bonds?

Please choose only one answer:

- nitrogen and oxygen
- sodium and fluorine
- sodium and nitrogen
- lithium and fluorine

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#### 4.1.21. Which of the following elements is most likely to participate in th...

Author: Joanna Smithback

Which of the following elements is most likely to participate in the formation of multiple bonds?

Please choose only one answer:

- H
- Na
- Cl
- S

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#### 4.1.22. Which of the following elements is most likely to form compounds in...

Author: Joanna Smithback

Which of the following elements is most likely to form compounds involving an expanded valence shell of electrons?

Please choose only one answer:

- O
- Na
- P
- N

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