

VSEPR Theory Quiz PDF

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What does VSEPR stand for?

- Valence Shell Electron Pair Repulsion
- Valence Shell Electron Pair Rotation
- Valence Shell Electron Pair Reaction
- Valence Shell Electron Pair Reduction

Which molecular shapes can result from a molecule with five electron pairs around the central atom?

- Trigonal Bipyramidal
- Seesaw
- Tetrahedral
- Octahedral

What shape does a molecule with three bonding pairs and one lone pair have?

- Linear
- Trigonal Planar
- Trigonal Pyramidal
- Tetrahedral

Which of the following are limitations of VSEPR theory?

- Does not predict the exact bond angles
- Can not explain the shapes of large molecules
- Assumes all electron pairs are equivalent
- Accurately predicts molecular polarity

Which factor does NOT influence molecular shape according to VSEPR theory?

- Number of electron pairs

- Electronegativity
- Atomic mass
- Presence of lone pairs

Which of the following molecules has a trigonal pyramidal shape?

- CH₄
- NH₃
- H₂O
- CO₂

Which molecules have a bent shape?

- H₂O
- CO₂
- SO₂
- CH₄

Which of the following molecules is linear?

- H₂O
- CO₂
- NH₃
- CH₄

What are the key assumptions of VSEPR theory?

- Electron pairs repel each other
- Electron pairs are attracted to lone pairs
- Electron pairs arrange to minimize repulsion
- Electron pairs do not affect molecular shape

Which of the following shapes can result from a molecule with four electron pairs around the central atom?

- Tetrahedral
- Trigonal Pyramidal
- Bent
- Linear

What is the ideal bond angle in a tetrahedral molecule?

- 90°
- 109.5°
- 120°
- 180°

What factors can cause deviations from ideal bond angles?

- Lone pairs
- Bond pairs
- Electronegativity differences
- Atomic number

Which molecular shape is associated with a molecule that has two bonding pairs and no lone pairs?

- Bent
- Linear
- Trigonal Planar
- Tetrahedral

In VSEPR theory, which type of electron pair causes more repulsion?

- Bond pair
- Lone pair
- Both cause equal repulsion
- Neither causes repulsion