

# HW09 - VB

ⓘ This is a preview of the published version of the quiz

Started: Oct 21 at 11:17am

## Quiz Instructions

### Homework 09 - VB

#### Question 1

3 pts

Which of the following combinations of hybridization and molecular geometry is possible?

- $sp^2$ , linear
- $sp^2$ , tetrahedral
- $sp^3d$ , octahedral
- $sp^3$ , trigonal pyramidal

#### Question 2

3 pts

The  $sp^3$  hybridization has what percent s character and what percent p character respectively?

- 25%, 75%
- 50%, 50%
- 75%, 25%
- 33%, 67%

#### Question 3

3 pts

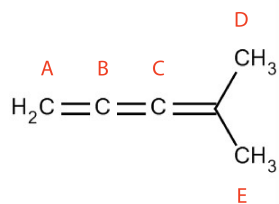
What hybridization would you expect for Se when it is found in  $SeO_4^{2-}$ ?

- $sp^3d^2$
- $sp^3d$
- $sp^3$
- $sp^2$

#### Question 4

4 pts

Give the hybridization of each central atom in order from A to E:



- sp<sup>2</sup>, sp, sp, sp<sup>2</sup>, sp<sup>2</sup>
- sp<sup>3</sup>, sp<sup>2</sup>, sp<sup>2</sup>, sp<sup>3</sup>, sp<sup>3</sup>
- sp<sup>3</sup>, sp, sp, sp<sup>3</sup>, sp<sup>3</sup>
- sp<sup>2</sup>, sp, sp, sp<sup>3</sup>, sp<sup>3</sup>

### Question 5

4 pts

What hybridization would you expect for C in ethyne (C<sub>2</sub>H<sub>2</sub>)?

- sp<sup>2</sup>
- sp<sup>3</sup>
- sp<sup>3</sup>d
- sp

### Question 6

3 pts

sp<sup>2</sup> hybrid orbitals have...

- tetrahedral symmetry.
- linear symmetry.
- trigonal planar symmetry.
- trigonal pyramidal symmetry.

### Question 7

3 pts

A sigma bond...

- may exist alone or in conjunction with a pi bond.
- is composed of non-bonding orbitals.
- always exists in conjunction with a pi bond.
- is always polar.

- stems from sp hybridization of orbitals.

### Question 8

3 pts

In a new compound, it is found that the central carbon atom is  $sp^2$  hybridized. This implies that...

- carbon has four regions of high electron density.
- carbon is also involved in a pi bond.
- carbon has four lone pairs of electrons.
- carbon has four sigma bonds.
- carbon has a tetrahedral electronic geometry.

### Question 9

4 pts

In the molecule,  $C_2H_4$ , what are the atomic orbitals that participate in forming the sigma bond between the C and H atoms?

- H:  $sp^2$ , C:  $sp^2$
- H: 2p, C:  $sp^3$
- H: 1s, C: sp
- H: 1s, C: 2p
- H: 1s, C:  $sp^2$

Not saved

Submit Quiz