

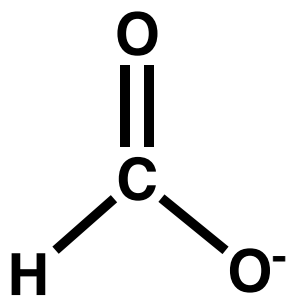
# Practice Question 1

What is the relationship between the two structures (A and B) given below?

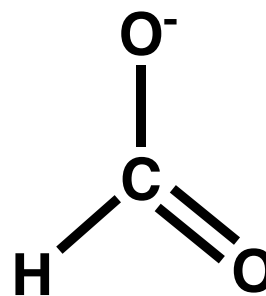
Based on the structures shown below:

How many pi molecular orbitals are in the molecule?

How many electrons are delocalized in the molecule?



Structure A



Structure B

# Practice Question 2

- a) Draw the band structure of potassium and silicon.
- b) One of these two elements is a semiconductor. Which one? Explain your choice.

## Practice Question 3

Germanium has the same structure as silicon. A small amount of gallium is added to a sample of germanium to improve its ability to conduct electricity.

- a) Is this an example of a *p*-type semiconductor or an *n*-type semiconductor?
- (b) Explain how the addition of gallium increases conductivity.

# Practice Question 4: Intermolecular Forces

Which intermolecular forces are present in the following compounds?

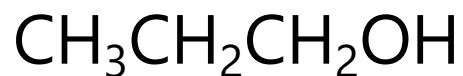
1. HCl

2. Ne

3. HF

# Practice Question 5

Which of these molecules will have Hydrogen bonding?



## Practice Question 6

Arrange the following in increasing order of their boiling points?



Arrange the following in increasing order of their intermolecular forces?

