

✧ **III.) Functional Groups and Molecular Orbitals:** Answer the following questions regarding the blood pressure medication *Valsartan* shown below.

a) Circle the answer that best describes the **O-C=O** bond angle

60° 90° 109.5° 120° 180°

b) Circle the **functional groups** that are present in Valsartan (more than one may be present)

technically aromatic rings...

nitrile carboxylic acid

ester

ether

aldehyde

alkene

alkyne

c) Fill in the blanks: Valsartan has 3 lone pairs in **p orbitals**, 8 lone pairs **sp² hybrid orbitals**, and 0 lone pairs in **sp³ hybrid orbitals**.

d) What is the **molecular geometry** of the carbon indicated by the red arrow?

tetrahedral

