

QUESTION 10
10.000000

Answer the following questions in the space provided, SHOW ALL WORK!

1. (2 points) Complete the following reactions:



2. (2 points) Discuss the bonding in carbon dioxide in terms of hybridization theory.

Because the central carbon atom must form two σ bonds to the oxygen atoms, we assume that sp hybrid orbitals are formed. We consider that the $2p$ orbitals on right oxygen to the sp hybrid orbitals overlap with $2p$ orbitals of the oxygen to provide a pair of π bonds.

3. (2 points) Draw the electron-dot and molecular structures of methyl chloride.



4. (2 points) Describe (using words and equations) the industrial method of the synthesis of pure aluminum.



5. (2 points) Complete the following reactions:

