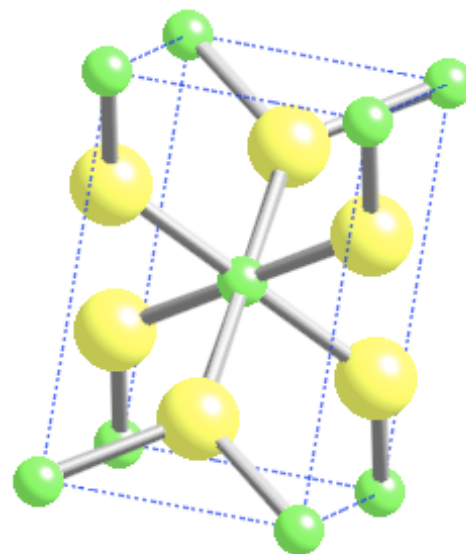


In Class 8: Structure of Solids

Below is a representation of the smallest repeating unit of an oxide of silicon that is NOT the normal one observed for quartz.

a. Based on this structure, if the oxides are represented by the large spheres and the silicon by the small spheres, what is the formula for this compound? Show your work by clearly by indicating why you counted particular atoms the way you did? (5 pt)



b. *Approximately* what type of lattice do the Si make by themselves? (3 pt)

c. Briefly, after examining the unit cell closely, why is that lattice not *exactly* the one you indicated? (2 pt)

d. What is the coordination number of the oxides? (2 pt)

e. What is the coordination number of the Si on the corners? (2 pt)

f. This structure has a similar structural arrangement of atoms in 3D space as one of the others you encountered in Lab 6. Which one? (2 pt)