**11.32 Explain why ceramics are weaker in tension than in compression.**Ceramics are weaker in tension because internal flaws and porosity initiates and propagates cracks under tensile stresses, severely reducing the tensile strength. These flaws do not propagate under compressive stresses.

**11.94 Calculate the thermal conductivities for ceramics at porosities of 1%, 5%, 10%, 20%, and 30% for .**

Governing equation,

Using the governing equation above:

**Web Problem W6-1  
Estimate the elastic modulus of a particle composite with 47% wood particles and 53% sodium silicate (ss) matrix. and**

Using the rule of mixture in the orientation of the fibers

Using the rule of mixture perpendicular to the orientation of the fibers