1) Briefly describe what is meant by “surface film” resistance and why the interior surface film value is different from the exterior surface value.

2) Explain for different glazing types what the term “shading coefficient” means? What are typical shading coefficients commonly found for:
   - Single pane clear glass
   - Single pane tinted glass
   - Single pane reflective glass
   - Dual pane tinted outside/clear inside
   - Dual pane reflective outside/clear inside

3) A 200 square foot composite building wall is comprised of the following components:
   - 30% windows; U value = 1.06; SC = 0.70
   - 20% hollow wood door; U = 0.46
   - 50% wall; wall is constructed of 6” lightweight concrete (resistance of 0.60 per inch of thickness) and R-11 insulation. (Don’t forget to add surface film resistances!!)

   If the inside temperature is desired to be maintained at 70°F and the outside temperature is 15°F; what is the heat transfer in Btu/hr for each component of the wall? What is the heat transfer for the entire wall?

4) What happens to the overall wall heat transfer rate if:
   - Solid core doors are used; U = 0.23
   - Double pane windows are used with overall U = 0.53