

ASSIGNMENT 6

CHEMISTRY 300

Due: 4:30 pm Monday 27 October 2008

1. Do question 14 on page 853 of the text.
2. Consider a 25 m^2 wall of a house. This wall consists of a 1.00 cm thick layer of plaster, a 9.00 cm thick fibreglass batt, and a 10.00 cm brick facing. The thermal conductivity of fibreglass is $4.6 \times 10^{-2} \text{ W m}^{-1} \text{ K}^{-1}$ and of brick is $0.60 \text{ W m}^{-1} \text{ K}^{-1}$. It may be assumed that plaster has the same thermal conductivity as brick. The exterior temperature is 0°C and the interior temperature is 20°C . The thermal resistance of the studs, the vapour barrier, and sheathing have been ignored.
 - (a) What is the rate of heat loss through the wall in watts?
 - (b) What are the temperatures at the interfaces (i) between the plaster and the fibreglass and (ii) between the fibreglass and the brick?