

Errata
 Biological and Bioenvironmental Heat and Mass Transfer by A. K. Datta
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Page	Changes
Heat Transfer	
25	Problem 2.7.4:average surface temperature of sun to be <u>5800K</u> .
49	Text before Equation 4.11: Rewriting the equation in terms of <u>flow</u> , we get
66	Problem 4.8.6, Line 5: Show that the <u>total</u> thermal resistance...
88	Problem 5.9.4, Line 8: ...temperature of <u>one</u> aluminum <u>particle</u> to equilibrate...; Line 13: <u>Mass of each particle is 18 g</u> .
92	Problem 5.9.17: Initial temperature of potato is 30°C. The thermal conductivity and thermal diffusivity of potato are 0.65 W/mK and $1.66 \times 10^{-7} \text{ m}^2/\text{s}$, respectively
108	Comments to Example 6.6.1: Note that the <u>heat transfer coefficient</u> (at $x = 10 \text{ cm}$) is higher than the average <u>heat transfer coefficient</u> .
110	Section 6.6.4: $B = 0.683$, $n = \underline{0.466}$ for $40 < \text{Re}_D < 4000$
118	Problem 6.10.6: Second line from bottom should sayheat input to a 0.15 mm <u>diameter</u> wire..
119	Problem 6.10.8: Third line from bottom should read ..surface area of <u>one side of</u> one ear is 0.84 m^2 ."
119	Problem 6.10.9: ...viscosity of sea water is approximately $2 \times 10^{-3} \text{ Pa s}$
121	Problem 6.10.14, last line: ...container has a surface area of <u>0.04</u> m^2
135	Equation 7.14: ΔH should replace λ in the equation.
153	Equation 8.11: Denominator on the right hand side of equation should be <u>multiplied by σ</u>
160	Figure 8.18 title: Add to the current line— <u>All quantities are fluxes, measured in W/m^2</u> .
161	Equation 8.22: $q_{1-2} = \sigma A_2 F_{2-1} (T_1^4 - T_2^4)$
Mass Transfer	
208	Figure 10.8: Vertical axis label should be "Diffusivity in water ($\times 10^{-11} \text{ m}^2/\text{s}$)"
218	Item number 3 under the first bullet should read: Hydraulic conductivity depends on the fluid properties (density and viscosity) and matrix property called intrinsic permeability that takes into account the pore size distribution, shape of pores, porosity, and tortuosity.
222	Problem 10.9.7: The diffusivity of human immunoglobulin (a protein) is $4 \times 10^{-11} \text{ m}^2/\text{s}$
271	Problem 13.8.5: Need K^* value but if $K^* \approx 1$, $m = D_{AB} / (h_m L K^*) \approx 0$
273	Problem 13.8.12: Assume very <u>high</u> mass transfer coefficient...
274	Problem 13.8.13 last line: The soil <u>dry</u> density...
303	Schematic and Given Data: Item 1) $c_{\text{O}_2, \infty} = 2.26 \times 10^{-4}$
310	Problem 14.9.9: Item 4) If the total evaporative water loss (total EWL) from the <u>two eyes</u> and the body surface.... Also, vapor pressure is provided in the appendix.
311	Problem 14.9.13: Consider a stagnant water at 25°C with a <u>spherical</u> colony of microorganism..