

2017.

A5

(a) $q = \frac{(T_w - T_s)}{R_t}$

(b) $R_t = \frac{L_A}{k_A} + \frac{L_B}{k_B}$

(c) 伝導伝熱 //

(d) 対流伝熱 //

(e) $q = h_i (T_f - T_w)$ //

(f) $q = h_o (T_s - T_a)$ //

(g) $T_s - T_a = \frac{q}{h_o} \leq 20$

d.2. $q \leq 400 \text{ W/m}^2$ //

(h) $q = \frac{(T_f - T_a)}{R_t'}$ 2 d 3 t

$$R_t' = \frac{L_A}{k_A} + \frac{L_B}{k_B} + \frac{1}{h_i} + \frac{1}{h_o}$$

$$= \frac{L_A}{3k_B} + \frac{2L_A}{k_B} + \frac{1}{40} + \frac{1}{20}$$

$$= \frac{7L_A}{3k_B} + 0.075$$

$$= 46.7L_A + 0.075$$

$q \leq 400$ \approx 1410 K u. αT^2

$$R_t' \geq \frac{(T_f - T_a)}{400}$$

$$R_t' \geq \frac{280}{400} = 0.7$$

$$46.7L_A > 0.7 - 0.075$$

d.2 $L_A > 0.0134 \text{ m}$

$$= \underline{1.34 \text{ cm}}$$