

log

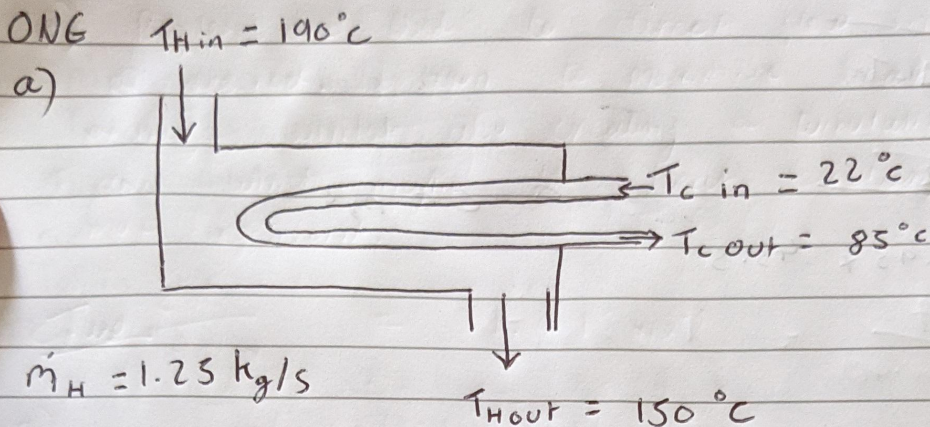
Level 6 THERMO

Marcos GONZALEZ

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ONG

a)



As can be seen in the schematic the hot stream would pass over the cold stream in the opposite direction of flow and therefore can be considered a counterflow system.

b) $\dot{Q} = ?$

$$U = 400 \text{ W/m}^2 \text{K}$$

$$F = 0.93$$

$$c_{pH} = 2400 \text{ J/kgK}$$

$$c_{pC} = 4180 \text{ J/kgK}$$

$$\dot{Q} = \dot{m} c_p (T_o - T_i)$$

$$1.25 \times 2400 \times (150 - 190) = -120000 \text{ W}$$

$$\dot{Q}_H = -120 \text{ kW}$$

$$\therefore \dot{Q} = 120 \text{ kW}$$