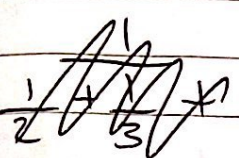


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Question 1

1) 
$$\left(\frac{1}{\frac{1}{2} + \frac{1}{3}} \right) + \left(\frac{1}{\frac{1}{2} + \frac{1}{3} + \frac{1}{6}} \right) + \left(\frac{1}{2} \right) = 1.2 + 1 + 2 + 4 = 8.2 \Omega$$

5)
$$P = \frac{V^2}{R} = \frac{41^2}{8.2} = 205 \text{ W}$$

2)
$$V = \frac{I}{R} = I = \frac{V}{R} = \frac{41}{8.2} = 5 \text{ A}$$

4) Current flow 4 A

$$I_T = \frac{V}{R_{232362}} = \frac{41}{8.2} = 5 \text{ A}$$

Current flow 6 A

$$I_T = \frac{V}{236} = 3.72 \text{ A}$$

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Question 2)

$$1) = 20 + 60 + 40 + 100 \\ = 220 \text{ Pf}$$

$$2) Q = CV = 220 \times 10^{-6} \times 100 = 0.022$$

3)

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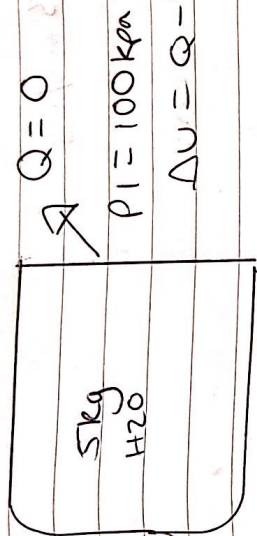
Q3)

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Thermodynamics.

G4 NFEE



1) initial specific energy final pressure

$$U_F = 417.40 \text{ kJ/kg}$$

$$U_{FG} = 2088.2 \text{ kJ/kg}$$

$$U_1 = 417.40 + (0.7)(2088.2)$$

$$U_1 = 1879.14 \text{ kJ/kg}$$

$$V_F = 0.001043 \text{ m}^3/\text{kg}$$

$$V_g = 1.6941$$

$$V_{FG} = 1.7669463 \text{ m}^3/\text{kg}$$

$$V_1 = 0.001043 + (0.7)(1.694)$$

$$V_1 = 1.186913 \text{ m}^3/\text{kg}$$

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Q4 Cont...

$$Q_{\text{airing}} \times z = 0.7$$

$$V_2 = V_1 = 1.186913 \text{ m}^3/\text{kg}$$

$$p_2 = 137.5 \text{ kPa}$$

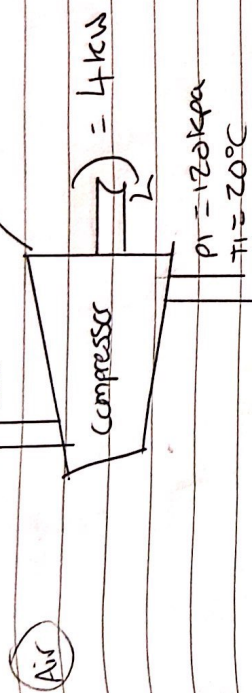
length of time needed is on:

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Q5

$$Q = 10\% \text{ of } \dot{W}_1$$

$$= 0.4 \text{ kJ/kg}$$



MASS balance

$$\dot{M}_1 = \dot{M}_2 = \dot{m}$$

Energy balance

$$\dot{Q} - \dot{W} = \dot{m} (\Delta h + \Delta KE + \Delta PE)$$

$$\dot{Q} - \dot{W} = \dot{m} (\Delta h) \quad \dot{Q} - \dot{W} = \dot{m} (h_2 - h_1)$$

$$\dot{Q} - \dot{W} = \dot{m} c_p (T_2 - T_1) \quad c_p = 1.005 \text{ kJ/kg}$$

$$\dot{Q} = \dot{m} q$$

$$\dot{W} = 4 \text{ kW}$$

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Q10)