

1. Writing Rubric

a. Purpose

- i. 0.5: The purpose for each section was correctly stated

b. Drawings

- i. 1.0: Diagrams provided are sufficient and depict the scenario accurately

c. Sources

- i. 1.0 Sources were provided for all problems.

d. Design and Considerations

- i. 1.0 Reasonable assumptions and considerations were provided... that note about carbon steel is irrelevant. I used the same template from the last test and that is a hold over.

e. Data and Variables

- i. 0.5: Relevant Data and Variables Were Provided for all Problems

f. Procedure and Calculations: 3.5/10: Mostly Correct but with some errors

i. Actual cycle diagram

1. Cycle diagram matches the one provided in the answer key.
2. 1/14

ii. P-v and T-s diagrams

1. Pv and Ts diagrams are accurate except for state 10. State 10 is shown as on top of state one which is incorrect.
2. 1.8/14

iii. State calculations (10 of them)

1. All states are defined accurately except for state 8 which is lower than the key due to the quality in my calculations being lower than the quality used in the key.
2. 1.8/14

iv. Double interpolation for state 6

1. Double interpolation was required for state 6 and was calculated accurately. Though slightly lower than the one in the key.
2. 1/14

v. Calculate y_1

1. Y_1 was calculated accurately and correctly.
2. 1/14

vi. Turbine work

1. Turbine work is calculated correctly though slightly inaccurately due to the difference in h_8 between the submission and the key. 1,020.042 vs 1,171.04
2. 0.9/14

vii. Mass flow rate

1. Mass flow rate is calculated correctly though slightly inaccurately due to the difference in w_{out} between the submission and the key.
2. 0.9/14

viii. Heat rate at space heating.

1. Q heater is calculated incorrectly. The formula was correct though the wrong enthalpy was used. H_8 was used instead of H_9 , resulting in a much lower value than expected.
2. 0.7/14

ix. Heat released in condenser.

1. Heat released by the condenser is calculated correctly though the result is off due to the difference in H8 values.
 2. 0.9/14
- x. Utilization factor (need pumps & Q_{in})
 1. Utilization factor is calculated correctly and accurately.
 2. 1/14
- xi. Results
 1. Most results were accurate to the exam solution.
 2. 0.8/14
- g. Summary
 - i. Summary successfully recapped the results of the exam.
 - ii. 0.5/10
- h. Materials
 - i. Materials were listed in full.
 - ii. 0.5/10
- i. Analysis
 - i. Analysis was sufficient.
 - ii. 1.0/10
- j. Final Grade
 - i. 76/90

Summary

Overall, I'm very happy with the result of this exam. I defiantly could have done better but time constraints of the exam time made it really tuff. I felt very prepared going into this problem and aside from two mistakes in calculating H8 and calculating the Q_{out} of the heater. I had 100% accuracy. I honestly don't have that much to put here so I hope you are having a good day