David Loveland Professor Ayala MET 350 02/25/2024

Test 1 Reflection

This test applied to applying thermodynamics laws to gas turbines Engines using ideal cycles, reheating regeneration, and inter-cooling cycles. This is because of the use of a gas turbine system with compression and expansion, and a pure jet engine system. Another is analyzing the ideal Internal Combustion Engines cycles using air as the working fluid, applying thermodynamics laws to Jet Propulsion Engines using ideal cycles.

First off, I completely forgot about writing this test in the order of Procedure, Source, etc as I have done in MET 330. In the first problem, I did not write the effectiveness formula nor did I calculate it. I overlooked it and only concentrated on power. Looking at the solutions, I did not use effectiveness to find T5. I did use the right equation to find the power. For the second problem, I still did not use the correct procedure. I did find all the states except for the temperatures at the regenerator. I used enthalpy. I think the second problem went better.

I think the grade should be about 68, since thats what I calculated on the list of points. The weakness of my test was the lack of right procedures and overlooking certain important things like effectiveness. I think i did well with using the right equations. I also got the graphs right.

For the first problem, I was partially rolling with the original problem statement. Then I realized a couple equations I was gonna use were not right. With the specific heats being variable, I had to change some things. I gave myself a whole day to complete. It took me almost

5 hours to complete the test and thats with having to go back a redo some things in the first problem. I need to carefully asses all the data I've been given before starting. I learned that I could easily confused Pr with equations for P. I think that engineers could use these concepts in designing jet engines and dams. I think I could use these concepts at a aerospace company. I think it would help me in understanding concepts in general even if I don't work on it personally. If someone comes up to me and talks about turbines, I think I would be able to understand the conversation. I have a potential internship coming up with an aerospace company, I think I could use this information there. I have not used any of this information in my current work. I work in construction right now. I feel I was more successful in the equations and understanding the difference between constant and variable specific heats. I believe I will use some of this information in future jobs. I spent about 5 hours on this test. With me having to go back and redo some things, that did set me back an hour or two. As mentioned earlier, I need to carefully assess all the provided data and pick the right equations.

WRITING RUBRIC

	TOTAL	4.7/10.0
10. Analysis		0/10.0
9.	Materials	0.5/10.0
8.	Summary	0.3/10.0
7.	Calculations	1.5/10.0
6.	Procedure	0.5/10.0
5.	Data and variables	0.5/10.0
4.	Design considerations	0.2/10.0
3.	Sources	0/10.0
2.	Drawings	1.0/10.0
1.	Purpose	0.2/10.0

PROBLEM 1)

	TOTAL	6.5/11
7.	Final results	1/11
6.	Power	1/11
5.	State calculations (without regeneration)	0/11
4.	Realize that regeneration hurts	.5/11
3.	State calculations (with regeneration)	2/11
2.	HX effectiveness for previous problem	0/11
1.	P-v and T-s diagrams	2/11

PROBLEM 2)

	TOTAL	8/8
4.	Final results	1/8
3.	Propulsion efficiency (before and after)	1/8
	P5	
	Cp & Cv variable	
	Use efficiencies to get states	
	Use wc_act = wt_act	
2.	State calculations	4/8
1.	P-v and T-s diagrams	2/8

FINAL GRADE: 68