

## System Level Design - First MID - April 2025

Name:

**CSE**

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When answering the questions below, make sure to show all of your work. Pay attention to the point values on each question. State your assumptions, and explain your answers thoroughly. Remember that an explanation is expected with every answer except the multiple choice and true/false questions when the answer is true. Use blank paper if you do not have enough room.  
Time: 09:00 to 12:00 | Total Marks: 75

1. What is an operating system? 2
  
2. What is an interpreter? 3
  
3. What is the difference between system programming and application programming? 2
  
4. What is Terminal? 3
  
5. Write the syntax of a system call in C. 5

6. Compare and contrast the use of C++ and Rust in system-level programming, focusing on the trade-offs between object-oriented design, memory safety, and performance. **5**

7. What is the difference between process and thread? **2**

8. What is an orphan process? **3**