Answer each of the following questions in your own words and in complete sentences. The goal of the assignment is for you to demonstrate your understanding of the basics of parallel processing and to demonstrate your ability to express your knowledge in a clear and concise form. The goal is NOT to write as few words as possible. The answer should take the form of a very short essay and should stand alone – without the question. Answers MUST be typewritten. Each answer should be at least 250 words and must be written with correct grammar and spelling.

1. In today’s computing industry, computers continue to operate faster and have larger memories for holding data and code. In addition, programmers continue to develop more efficient strategies for processing and storing information. In light of this, why does the industry continue to pursue parallel processing hardware and software development?

2. Most parallel algorithms are based on the divide-and-conquer strategy, in some form or another. Some algorithms divide data, others divide code. Explain each of these versions of divide-and-conquer in a parallel environment and describe a specific example of each.

3. Minimizing the actual run time of a program to solve a problem is often the goal of an algorithm. However, actual run time of a program is a poor way to compare algorithms due to the variations in hardware. How do we compare sequential and parallel algorithms with respect to “run time”?