



4. In \_\_\_\_\_ routing, a packet is divided into smaller units that are called flits (flow control bits) such that flits move in a pipeline fashion. [1]
5. In the \_\_\_\_\_ system, each processor has part of the shared memory attached. [1]
6. Recall the two fundamental communication models, shared data space and message passing. Compare the two by giving for each both the advantages and disadvantages. [4]
7. What is a race condition? Give an example. [Indicate any assumptions that you have made. [2]

8. Develop a parallel algorithm for the problem of Matrix Vector multiplication? [5]
- a. Is the algorithm efficient, why? What type of parallelism exists in this problem?
  - b. Is there any communication involved? If yes, what is the type of communication involved?
  - c. Running this code on a distributed memory computer, which type of network topology is efficient with respect to the optimization of communication involved?

9. How crucial is the mapping stage in a parallel algorithm design process? When do you say that the mapping is optimal? List out the guidelines that help in making good mapping decisions? [5]

10. What are the few most important lessons you learned till now in this course? In addition to listing the lessons, please write a sentence expanding on each.

11. A quote of Bhagawan which you like the most -