Handout #6

Homework # 6 Due: December 1

Interconnect Networks

 \mathbf{Q} 1: Describe all the network transactions required to maintain consistency for a Read Miss in Write Mode event. The transactions should be listed in order. Provide a brief description of the overall activity.

 \mathbf{Q} 2: Describe all the network transactions required to maintain consistency for a Write Miss Not in Write Mode event. The transactions should be listed in order. Provide a brief description of the overall activity.

Q 3: Illustrate how a 3x3 mesh can be embedded within an n=4 hypercube. Please be sure to label the mesh and hypercube nodes.

Q 4: (a) What is the average distance for a 2D torus if there are N nodes? What is the bisection bandwidth if each link has a bandwidth of b?

(b) Repeat the above two questions for a 2D mesh.

(Note: use the formulas for average distance given in class, some versions of the textbook are known to provide incorrect information.)

 \mathbf{Q} 5: Briefly describe why dimension order routing prevents routing deadlock.

Q 6: Culler 10.23