2.16

- Partitioning the mesh into two equal parts of p/2 processors each would leave √p communication links between the partitions. The bisection width is √p.
- The network has a bus underlying infrastructure so by configuring the network appropriately, the diameter is O(1). That can be debated because of the need for re-configuration and the fact that other parts of the network may be cut, leaving more than 1 link for processors to communicate.
- There are p processors, 6 switching nodes per processor, so 6p switching nodes in total.
- Number of communication links is 2(p-√p). It would be 2p with wrap-around so we remove 2√p for the wrap-around links.
- Advantages and disadvantages: We discussed them during the exercise session.

2.17

- Partitioning the mesh into two equal parts of p/2 processors each would leave at least √p links between the partitions. This is similar to the ordinary 2-D mesh. The bisection width is √p.
- For the diameter we consider the processors at the two extremities of the mesh. As for the 2-D mesh we traverse a full row and a full column, i.e., two binary trees here. The binary tree has height log√p, we go up and down the tree for each of the dimension: 2log√p+2log√p=2logp.
- Number of switches: Each row and column has √p-1 switches. There are √p rows and √p columns. Total is 2√p(√p-1) switches.