Please print out this form (two-sided, if you can) and write your answers *legibly* in the spaces provided. If you can't write legibly, type.

1. Consider a packet switch with four inputs and outputs. Input 1 has two packets for output 2 and one for output 3. Input 2 has packets for outputs 1, 3 and 4. Input 3 has packets for output 1, 2 and 4 and input 4 has two packets for output 2 and two packets for output 3. Can these packets all be transferred through the crossbar in 3 steps? In 4 steps? Explain

2. Construct a bipartite graph that corresponds to the scheduling problem in question 1.

3. Consider the bipartite graph shown below and the matching. Construct a tree with six edges that can be used to extend the matching, to match another vertex of maximum degree. Which edges are in the final matching?

g — f — h — d — i
a   c — b   j — k