Task 1B

(a) In updating the network switch fabric, the following logic has been applied. Since there are 4 input and output ports, where for an input port, when a packet has arrived, the “in_port[i].flag” would be raised, and likewise for a packet has been passed to the output, the “out_port[i].flag” would be raised as well.

The switching algorithm targets specifically the arriving packets at the 4 input ports. Since a pseudo-random entry in the 40,000 entries cached in the routing table could arrive at the input port, each of these packets would be immediately stalled at queue matched to a output port.

For any of these intermediate queues, when the switch fabric has detected a non-empty queue, it would move the packet to its desirable port, only if the output does not already have a packet waiting to be sent on the output port.

As long as there are packets in the intermediate queue, packets are continued to put on the output port.

(b) The measured packet drop rate as indicated by the provided test harness is, 0.1%.