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. In the queue simulation, why is the value \( x^{11} \) not added to the queue just before time 400 ns? What line of the VHDL implementation is responsible for this?

2. In the packet FIFO, what is the largest possible number of packets that the producer can send to the FIFO (successfully) before the consumer raises its \( \text{ok2send} \) signal for the first time? What is the smallest number of packets that could make the FIFO too full to accept another packet?
3. Consider the first diagram in section 12.3 of the text, showing an example configuration of a priority queue. Show what happens when the pair with smallest key is deleted from this priority queue. Show the configuration both before and after the compare-and-swap is performed.