COMPUTER SCIENCE TRIPOS Part II – 2020 – Paper 9

13 Principles of Communications (jac22)

(*a*) In general, weighted fair queueing can be used to provide resource guarantees to packet flows in networks. Explain the problem with using a simple priority queue to do the same. Define weighted fair queueing.   [5 marks]

(*b*) The Data Centre environment often allows us to make some simplifying assumptions about traffic that mean we can employ a priority queueing system in switches, combined with some traffic regulation in end systems. *QJump* is one approach to this – describe the assumptions that allow this, and the mechanisms QJump uses to offer delay bounding for high priority traffic without resource starvation for bulk traffic flows.   [15 marks]