COMPUTER SCIENCE TRIPOS Part II – 2018 – Paper 8

10   Principles of Communications (JAC)

(a) There are two main ways in which traffic sources can be controlled: open-loop and closed-loop. Describe the overall operation and use of these two kinds of network system: What are the key components of an open-loop controlled protocol? What are the key components of a closed-loop, or feedback controlled system? What kinds of applications are suited to each class of control loop?

[10 marks]

(b) Two important approaches to fairness are max-min, and proportional. Describe what properties each of these offer, how they differ in how they can be used, and what happens in each case when demand exceeds supply of network capacity.

[10 marks]