

2000 Paper 8 Question 3

Digital Communication II

What information does a host require to transmit an IP datagram to a given destination IP address? [3 marks]

Describe how the host determines this information. How does this change in the presence of subnets? [3 marks]

Routing protocols can be classified as either *link-state* or *vector distance*.

(a) Briefly describe the operation of each of these schemes. [4 marks]

(b) In which case does the overall state converge more rapidly after a change? Justify your answer. [2 marks]

(c) Which scheme is more scalable? Justify your answer. [2 marks]

Sketch a design for a transport protocol providing reliable data transmission over IP multicast. What are the main issues here? Which changes within the network could lead to a more efficient implementation? [6 marks]