

Indian Institute of Technology Bombay

Department of Electrical Engineering

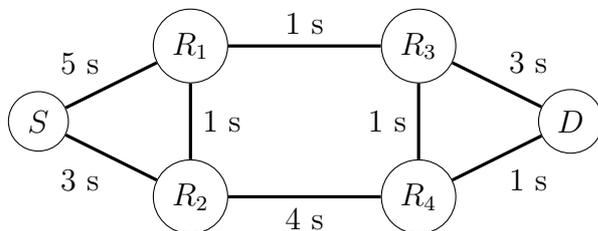
Handout 2

EE 706 Communication Networks

Quiz 2 : 10 points

January 14, 2010

- Using a two-node network consisting of a source S and a destination D with a noisy channel between them, explain how ARQ enables reliable communication. [2 points]
- A single parity check is an error detection code which appends a single parity bit to an information bit string. The parity bit is set to 1 if the number of ones in the information bit string is odd and is set to 0 otherwise. Let the information bit string be 0000. If a single parity check bit is added to it and the resulting bit string is sent over a noisy channel, list all possible received bit strings which are declared error free at the destination. [2 points]
- Consider the six-node communication network shown in the below figure.
 - List all routes from node S to node D . [2 points]
 - The number alongside a link indicates the packet delay incurred on that link in seconds. Taking the routing cost of a route to be the sum of the delays of the links which constitute the route, write down the minimum-delay routing tables for the nodes S , R_1 , R_2 and R_3 in the format shown in the table below. [4 points]



Routing table for S		
Reachable Node	Next Hop	Routing Cost