

3. If a collision is detected during transmission, transmit a brief jamming signal to assure that all stations know that there has been a collision and then cease transmission.
4. After transmitting the jamming signal, wait a random amount of time, then attempt to transmit again (repeat from step 1).

Figure 14.1 illustrates the technique for a baseband bus. At time  $t_0$ , station A begins transmitting a packet addressed to D. At  $t_1$ , both B and C are ready to transmit. B senses a transmission and so defers. C, however, is still unaware of A's transmission (because the leading edge of A's transmission has not yet arrived

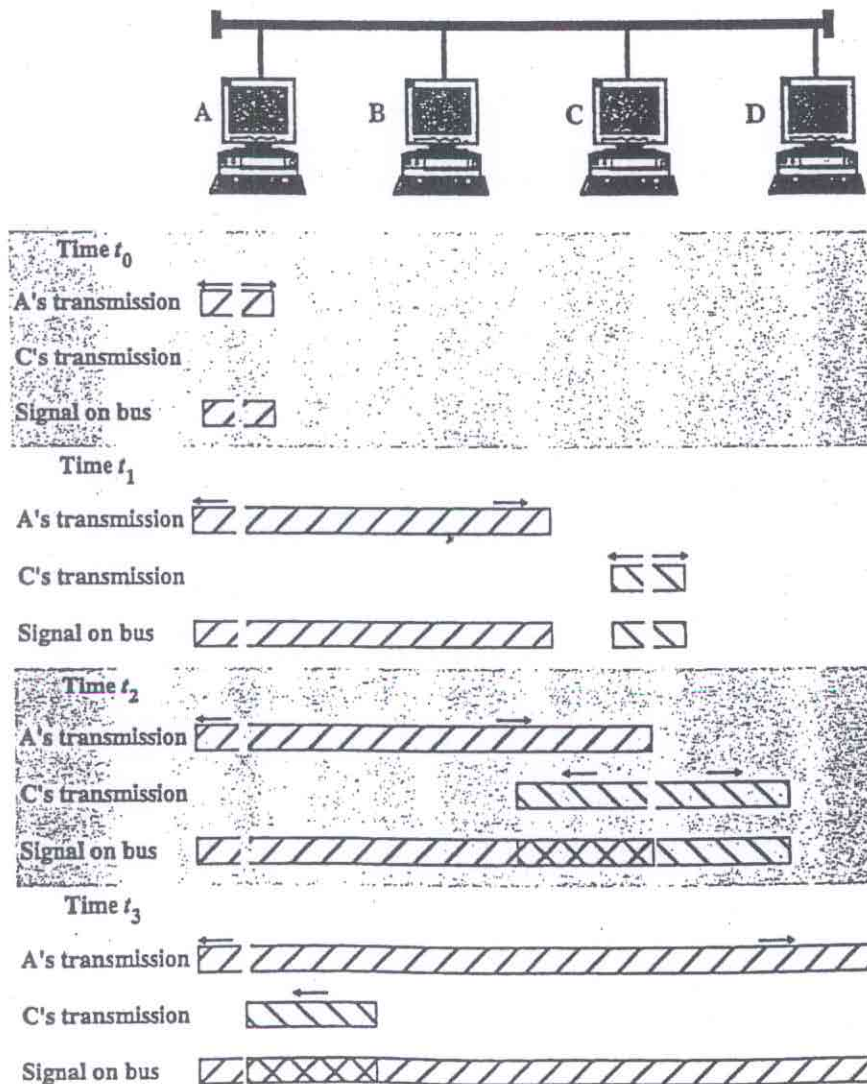


Figure 14.1 CSMA/CD Operation

# ETHERNET SPECIFICATION: Data Link Layer

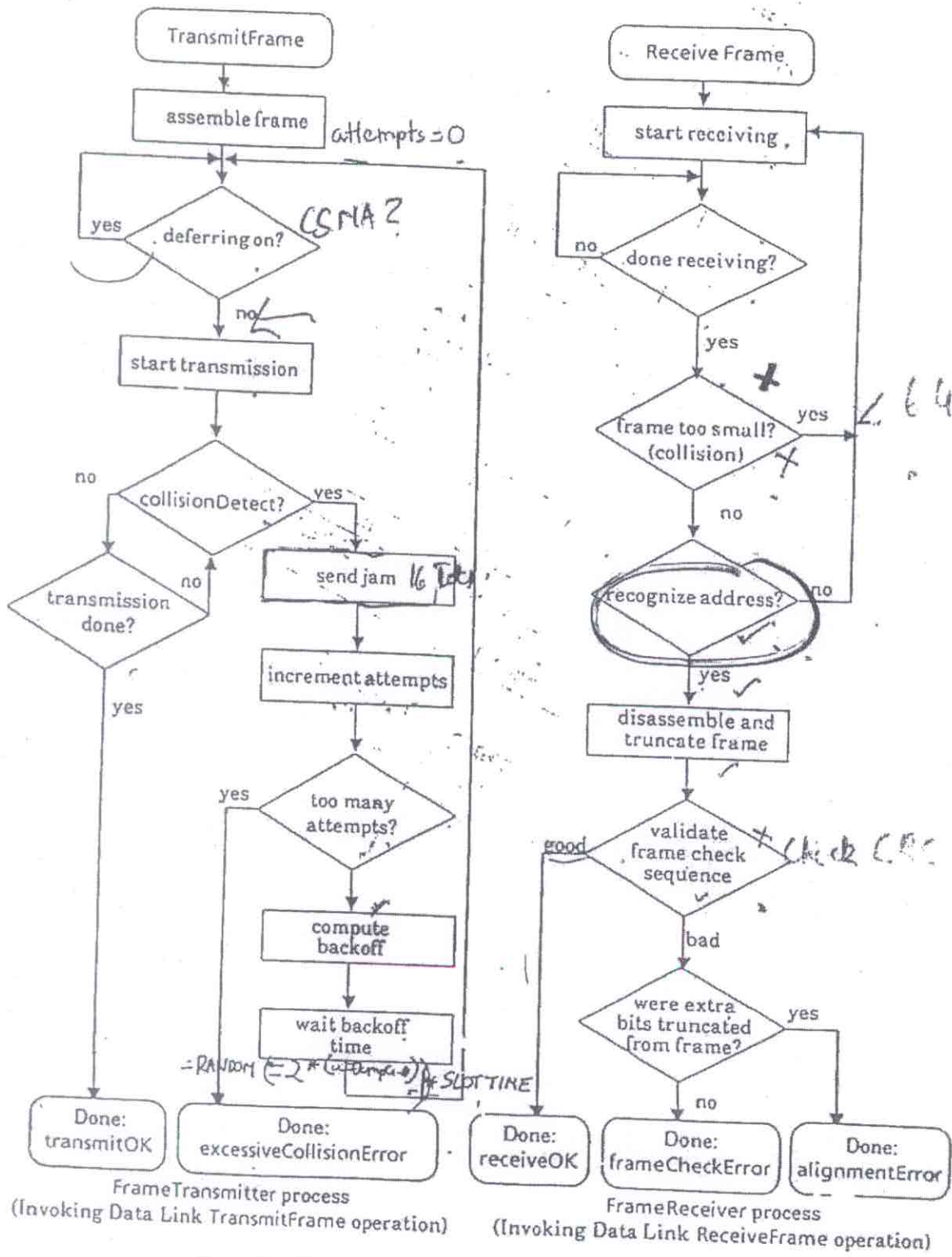
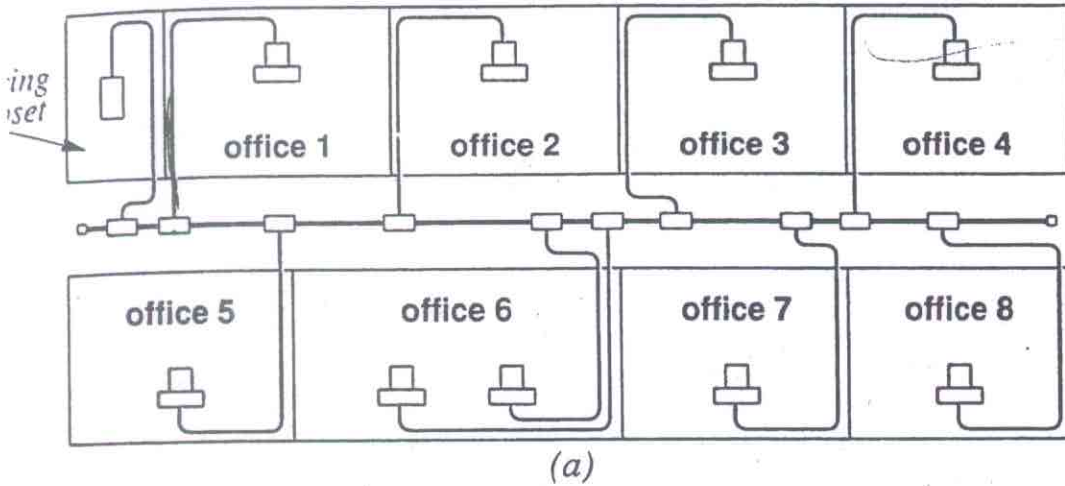


Figure 6-3: Control Flow Summary -- Client Layer Processes

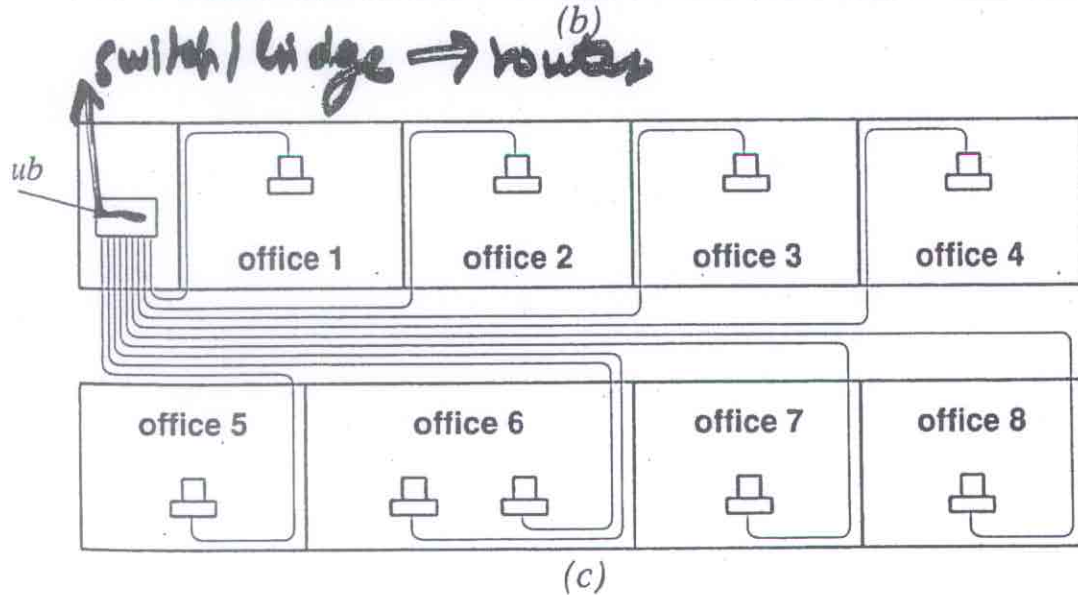
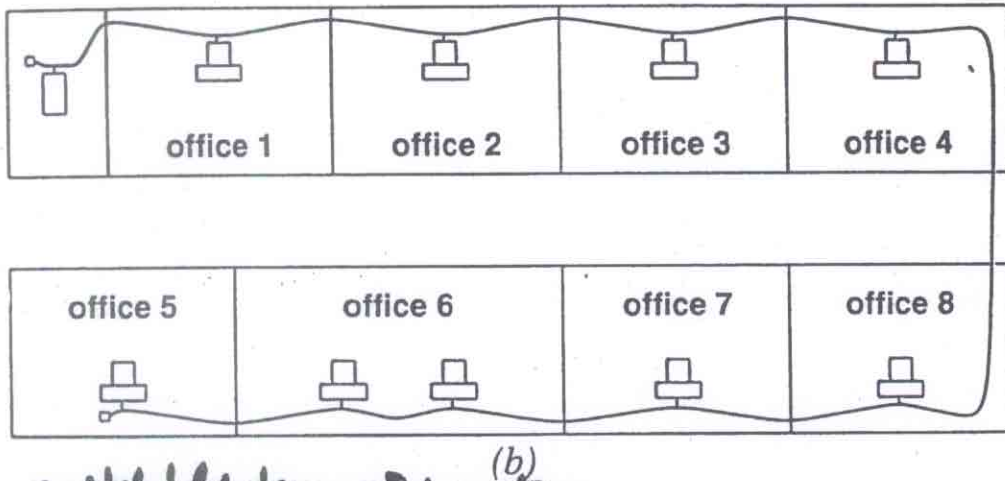
SLOT TIME = 51.2 usec

59

allent  
6, 2



10 base 5  
THICKNET



switch / bridge → router

Figure 9.7 Illustration of computers in eight offices wired with (a) thick, (b) thin, and (c) 10Base-T (twisted pair) Ethernet. Wires can run above the ceiling or under a raised floor. A wiring closet may contain a hub or equipment used for network monitoring, control, or debugging.

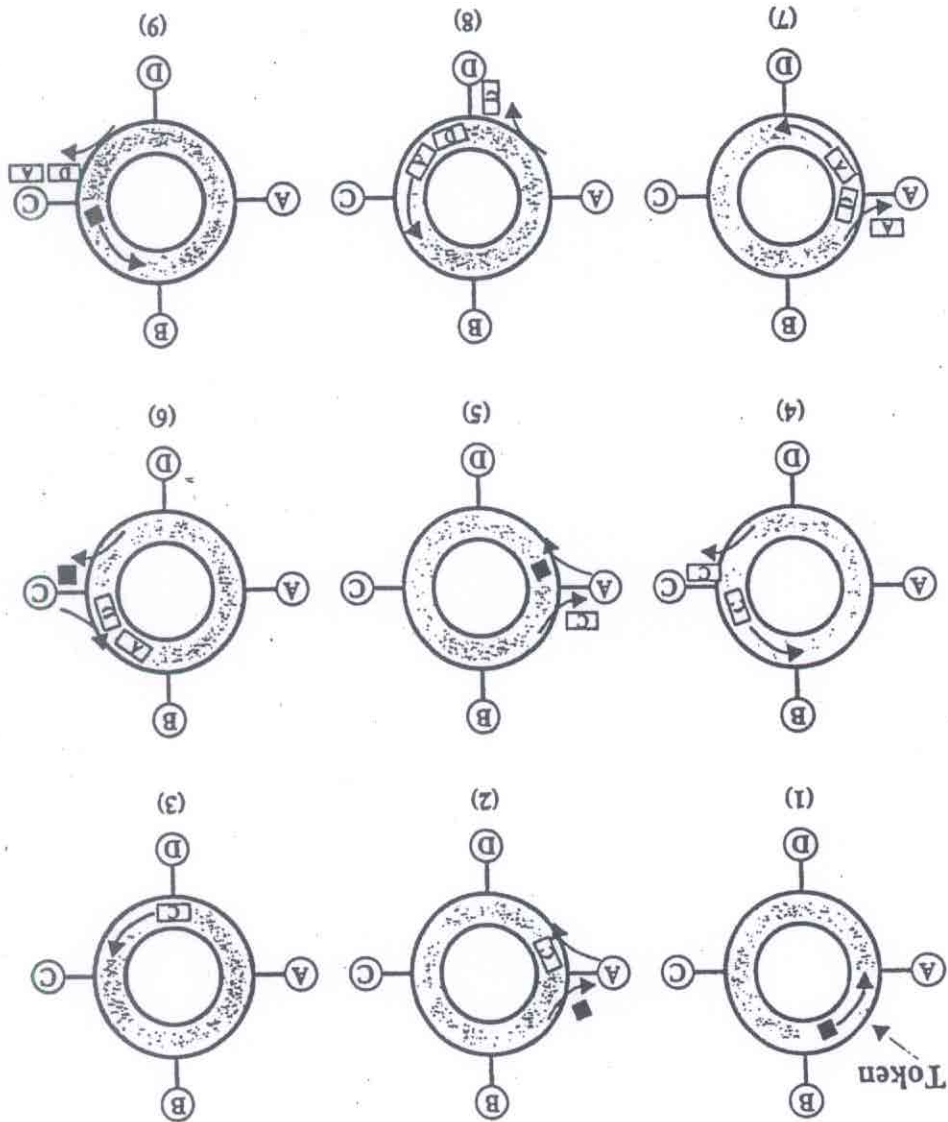


Figure 14.5 Token Ring Operation

The principal disadvantage of token ring is the requirement for token maintenance. Loss of the token prevents further utilization of the ring. Duplication of the token can also disrupt ring operation. One station must be selected as a monitor to ensure that exactly one token is on the ring and to reinsert a free token if necessary.

MAC Frame

Figure 14.6 depicts the frame format for the 802.5 protocol. It consists of the following fields: