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Q1:-

a) The family member is required to provide the letter to delegate itself, the address of the destination house and the name of the recipient. The delegate notes down the recipient's name on the letter. The letter is then placed in an envelope and the address of the destination house is written on top of the envelope by the delegate. The letter is handed to the planet's mail service by delegate. On the receiving end, the delegate receives the letter from the mail service, takes the letter out of the envelope and takes note of the recipient name written at the top of the letter. The delegate then gives the letter to the family member with this name.

b) No, the mail service only examines the letter envelope without opening and checking the letter.

Q2:- Source Port number is 4 and destination port is x for the segments travelling from host B to host A.

Q3:- For each connection, a separate "connection socket" is created by the web server. Each connection socket is identified by (source IP address, source port number, destination IP address, destination port number.) When host C receives an IP datagram, it examines these four fields in datagram to determine which socket it should pass the payload of the TCP segment. Hence the requests from A and B pass through different sockets. The identifier for both of these sockets has 80 for the destination port

however the identifiers for these sockets has ~~so for the destination~~ different values for source IP addresses. Unlike UDP, when the transport layer passes a TCP segment's payload to the application process, it does not specify the source IP address, as this is implicitly specified by the socket identifier.

Q4:-

a) 20 bytes. Bytes 90-109 are in the first segment.

b) 90. TCP uses cummulative acknowledgements, so even if it buffers the second segment, the ack is still for the first segment.

Q5:-

R/2 Transmission rate.

The bottleneck bandwidth R is divided between two as both are starting at the same time so R/2.