1. Yes. It’s the transport protocol’s job to ensure that data is reliably delivered.
2. Uploading to the bus would take significantly less time than a standard 56 kbps dialup connection.
3. Yes. The dig command will query the site. If it was just recently accessed, it will be cached, and it will have a return time of 0 seconds.
4. The TCPClient won’t have a proper connection to send the data to, so it will eventually fail. The UDPClient will simply send the data even though it won’t be received. If you run different ports, they will never connect.
5. A. There would be 20 because 110 – 90 = 20.

B. The acknowledgement number would be 90 because that’s the first sequence number.

1. Simply invert the numbers to find 1s complement. The sum of the numbers is: 00101110. This in 1s complement would be 11010001.
2. The name is a datagram. The difference in the two is that a router will forward packets based on IP address, whereas a link-layer switch forwards packets based on MAC address.
3. -----
4. Link layer uses parity check, checksum, and cyclic redundancy check.
5. If we take a two-dimensional matrix:

0000

1111

0101

1010

We can then say that there’s an error in row 3 column 3 that throws off the parity:

0000

1111

0111

1010

If we say that row 3, column 2 & 3 is wrong:

0000

1111

0011

1010

Then we can say that the parity in the rows is correct, but the columns are not.