Lab 9

Q1.

Looks for longest match, so 10.1.5.65 is 00001010 00000001 00000101 01000001

the longest match would be 10.1.5.64 because it binary is closet 00001010 00000001 00000101 01000000

Q2.

131.23.151.76 🡪 binary 🡪 10000011 00010111 10010111 01001100

Check the four outputs for the longest match. It ends up being output 1 which is 10000011 00010110 00000000 00000000 matches the first 15 bits

Q3

Get range of prefixes in binary, then see where the IP addresses fall into

192.24.0.0/18 🡪 192.24.0.0 to 192.24.63.255

192.24.12.0/22 🡪 192.24.12.0 192.24.15.255

1. 192.24.6.0 🡪 11000000 00011000 00000110 00000000 🡪 D
2. 192.24.14.32 🡪 11000000 00011000 00001110 00100000 🡪 B
3. 192.24.54.0 🡪 11000000 00011000 00110110 00000000 🡪 D

Q4

Application layer 🡪 Provides network services to user

Transport layer 🡪 Handles end to end communication

Internet layer 🡪 Responsible for IP addresses, routing, and transmitting data between nodes

Network Access layer 🡪 Physical hardware and media access

Q5

Traceroute is a network diagnostic tool. It sends packets with TTL to each node in a route. Each node decreases the TTL by an amount.

This is useful because you can see where the TTL is being slowed down or dropping out

Q6

You can use multi-threading. Assign each connection a separate thread.