

CS490-004 Network Programming

Possible Quiz Questions (Quiz #2)

on September 1st, 2026

The following is a list of possible questions for our quiz on September 1st. Some of the questions will not be asked in the quiz. All the questions that will appear in the quiz will appear exactly as shown below (however, numeric parameters may be changed). The quiz is closed textbook, closed notes and closed neighbors. Note that the questions, which did not appear in this quiz, still may appear in the exams. You will find a solution for these questions during lectures.

- #1:** Show the network programming structure that assumes application processes (application programs), a network protocol suite, and network hardware).
- #2:** In the network programming structure, which layer(s) of network application processes (application programs), a network protocol suite, and network hardware does (do) physically transmit network traffic for network application processes (name all that apply)?
- #3:** What does a network protocol suite performs?
- #4:** What are “protocols”? What are “interfaces”?
- #5:** What is “OSI seven-layer model”? Show the seven layers in the OSI seven-layer model (make sure to identify the name each of the seven layers).
- #6:** Mention **three** primary services (functions) the application layer offers in the OSI seven-layer model offers.
- #7:** Mention **two** major services (functions) the presentation and the session layers in the OSI seven-layer model offers.
- #8:** Mention **four** major services (functions) the transport layer in the OSI seven-layer model offers.
- #9:** Mention **four** major services (functions) the network layer in the OSI seven-layer model offers.
- #10:** Mention **three** major services (functions) the data-link and the physical layer in the OSI seven-layer model offers.
- #11:** Show the four layers in the Internet protocol layers (as overlaps on top of the ISO seven-layer model).
- #12:** What is “connection-oriented communication mode”? What are its primary advantages?

- #13:** What are the primary disadvantages of “connection-less communication mode”?
- #14:** Is it possible for a client host to establish more than one connection with a server process at a server host? If no, explain why not. If yes, explain how.
- #15:** Which network protocol layer (as an OSI layer) does “TCP/UDP ports” belong to? Which network protocol layer (as an OSI layer) does “IP addresses” belong to?
- #16:** Show (visualize) how TCP/UDP ports and IP addresses are used to identify each destination server (or client) process.
- #17:** What is “the client-server communication model”?
- #18:** What is “the peer-to-peer communication model”?
- #19:** Show how “the client-server communication model” is typically implemented using “socket APIs”.
- #20:** Show how “the peer-to-peer communication model” is typically implemented using “socket APIs”.
- #21:** What is “unicast data transmissions”? What are its primary weaknesses?
- #22:** What is “multicast data transmissions”? Explain how “multicast data transmissions” solves the major weaknesses of “multicast data transmissions”.