

CS490-004 Network Programming

Possible Quiz Questions (Quiz #3)

on September 8th, 2026

The following is a list of possible questions for our quiz on September 8th. 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:** What is “the client-server communication model”?
- #2:** What is “the peer-to-peer communication model”?
- #3:** Show (visualize) how TCP/UDP ports and IP addresses are used to identify each destination server (or client) process.
- #4:** Show how “the client-server communication model” is typically implemented using “socket APIs”.
- #5:** Show how “the peer-to-peer communication model” is typically implemented using “socket APIs”.
- #6:** What is “unicast data transmissions”? What are its primary weaknesses?
- #7:** What is “multicast data transmissions”? Explain how “multicast data transmissions” solves the major weaknesses of “multicast data transmissions”.
- #8:** What is “tunneling” (as a technical definition)?
- #9:** What are the two major benefits in using tunneling?
- #10:** How packets in each layer in the “internet four-layer protocol architecture” are constructed without tunneling (answer this question by showing a figure)?
- #11:** What is “packet encapsulation”?
- #12:** Show an example of “layer-1 tunneling” (answer this question by showing a figure).
- #13:** What are the issue(s) in LANs (local area networks) does “Soft-LAN” solves?
- #14:** What are the services broadcasting in a LAN offer to each host computer that is physically attached to a LAN segment?

- #15:** Why is it hard for any host computers over the Internet to be connected to a remote LAN?
- #16:** Describe how “Soft-LAN” works (describe it using a figure – make sure to identify the necessary components)
- #17:** Show how Soft-LAN applies “tunneling” in packet levels.
- #18:** Which protocol layer is Soft-LAN implemented?
- #19:** Describe how “virtual-LAN” works (describe it using a figure – make sure to identify the necessary components)
- #20:** Show how Soft-LAN applies “tunneling” in packet levels.
- #21:** Explain the difference between “Soft-LAN” and “virtual LAN”.
- #22:** What are “VPN routers” perform?
- #23:** Mention at least three examples of “tunneling” standards that are for “extending the scopes of the existing networking”.
- #24:** Mention at least three examples of “tunneling” standards that are for “emulating transmissions services not available in an existing networking protocol”.
- #25:** ~~What is (are) the primary motivation(s) in VPN?~~
- #26:** What is “Mbone”? How does “MBone” work?
- #27:** What is “VLAN”? Is “VLAN” a tunneling? If yes, how? If not, why not?
- #28:** What is “Virtual LAN hub”? How does it differ from “VLAN”?