CS447-003 - Networks and Data Communications
Possible Quiz Questions (Quiz #10)
For April 12, 2024

The following is a list of possible questions for our quiz on April 12nd. 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: Fill (complete) (some) of the rows in the following table (only one or two rows will be asked):

CIDR Block PreFix	# Equivalent Class-C	# of Host Addresses
/27		
/26		
/25		
/24		
/17		
/16		
/15		
/14		

#2: What does "BGP" stand for? What is the protocol for?

#3: What is "AS Number"?

#4: Show the contents in a "BGP UPDATE" message.

#5: What information does "Next Hop" field in each BGP UPDATE carries (explain why it is necessary in "BGP UPDATE")?

#6: What information does "Membership" field in each BGP UPDATE carries (explain why it is necessary in "BGP UPDATE")?

#7: What information does "AS PATH" field in each BGP UPDATE carries (explain why it is necessary in "BGP UPDATE")?

#8: Show the structure of the BGP routing table.

#9: What does "Next Hop" in the BGP table mean?

#10: What does "AS-PATH" in the BGP table mean?

#11: If more than one AS-PATH exits to reach a destination domain in the BGP routing table, how does BGP pick one?

#12: What is "default gateway"?

#13: The tier-1 ISPs are difference from any other ISPs (those in tier-2 and tier-3). How (what is the most essential difference)?

#14: What is the relationship between "ISP" and "AS"?

#15: What are "IXPs (Internet eXchange Points)"? What is their primary purpose(s)?

#16: What are the known problems in the inter-domain routing using BGP?

#17: For densely-connected networks (each node is connected to a large number of other nodes in a network), which of Dijkstra or Bellman-Ford shortest-path algorithm will result in a better convergence time? Why?