National University of Computer and Emerging Sciences, Lahore Campus

Course:	**Computer Networks**	**Course Code:**	**CS307**
Program:	**BS(Computer Science)**	**Semester:**	**Fall 2019**
Duration:		**Total Marks:**	**10**
Date:	**02 Dec, 2019**	**Assignment:**	**3**
Section:	**E**	**Page(s):**	**2**

Name_____ Roll No._____

Due Date: 4th December 2019.

Time: Latest by 3:45PM during lecture.

Please note the following:

1. No exceptions to the above date and time will be allowed.

2. All solutions must be hand-written.

3. Take a print out of this document and write your solution in the given space.

Use the following text for completion of this assignment: Computer Networking - A Top-Down Approach 6th Edition by Kurose & Ross.

Solve these problems are given from the back of Chapter 4.

P13. Consider a router that interconnects three subnets: Subnet 1, Subnet 2, and Subnet 3. Suppose all of the interfaces in each of these three subnets are required to have the prefix 223.1.17/24. Also suppose that Subnet 1 is required to support at least 60 interfaces, Subnet 2 is to support at least 90 interfaces, and Subnet 3 is to support at least 12 interfaces. Provide three network addresses (of the form a.b.c.d/x) that satisfy these constraints.

[3 points]

Solution:

P14. In Section 4.2.2 an example forwarding table (using longest prefix matching) is given. Rewrite this forwarding table using the a.b.c.d/x notation instead of the binary string notation.

[4 points]

Solution:

Destination Address	**Link Interface**

P16. Consider a subnet with prefix 128.119.40.128/26. Give an example of one IP address (of form xxx.xxx.xxx.xxx) that can be assigned to this network. Suppose an ISP owns the block of addresses of the form 128.119.40.64/26. Suppose it wants to create four subnets from this block, with each block having the same number of IP addresses. What are the prefixes (of form a.b.c.d/x) for the four subnets?

[3 points]

Solution: