

National University of Singapore
School of Computing

CS2105

Tutorial 5

Question paper

1. **[KR, Chapter 4, R13]** What is the 32-bit binary equivalent of the IP address 202.3.14.25?

2. Write down the first and last IP addresses of the subnet associated with the following IP address:
 - a) 244.233.234.12/4
 - b) 10.45.123.34/19

3. Combine the following three blocks of IP addresses into a single block:
 - a) 16.27.24.0/26
 - b) 16.27.24.64/26
 - c) 16.27.24.128/25

4. **[Modified from KR, Chapter 4, P16]**
 - a) Consider a subnet with network prefix 192.168.56.128/26. Give an example IP address (of form xxx.xxx.xxx.xxx) that belongs to this network.

 - b) Suppose an ISP owns the block of addresses of the form 192.168.56.128/26. Suppose it wants to create four subnets from this block, with each block having the same number of IP addresses. What are the network prefixes (of form a.b.c.d/x) for the four subnets?

Network Prefix	Binary Expression

5. [KR, Chapter 4, P7] Consider a datagram network using 8-bit addresses. Suppose a router has the following forwarding table:

Prefix Match	Interface
11	0
101	1
100	2
otherwise	3

For each of the four interfaces, give the associated range of destination host addresses and the number of addresses in the range.

Prefix Match	Interface	IP Range	No. of IP
11	0		
101	1		
100	2		
otherwise	3		

6. What is private IP address? Does LumiNUS use private or public IP? When your laptop is connected to NUS network, does it receive a private or public IP?