National University of Computer and Emerging Sciences, Lahore Campus

Course:	Computer Networks	Course Code:	CS307
Program:	BS(Computer Science)	Semester:	Fall 2019
Duration:	20 Minutes	Total Marks:	10
Date:	27 Nov, 2019	Quiz:	4
Section:	E	Page(s):	2

MAX 20

Name Huzaifa Hussnain Roll No. L16-4345

12/12

1. **For each of the following IP address ranges, specify the network address, broadcast address, and maximum number of host IPs available. (Show all your work).** $2^{10}-2$

192.168.100.0/24
100.10.8.0/22
202.1.0.0/16
101.51.192.0/18

Rough

128 64 32 16 8 4 2 1

① 192.168.100.0/24

- Network address = 192.168.100.0
- Broadcast address = 192.168.100.255
- Max. host IPs = 254

② 100.10.8.0/22

- Network address = 100.10.8.0
- Broadcast address = 100.10.11.255
- Max. host IP's = 1022

③ 202.1.0.0/16

- Network address = 100.10.8.0
- Broadcast address = 100.10.8.255
- Max. host IP's = 65,534

④ 101.51.192.0/18

- Network address = 101.51.192.0
- Broadcast address = 101.51.255.255
- Max. host IP's = 16,382

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Name Meezab Ahmed Roll No. 161-4347

11.5/12

1. **For each of the following IP address ranges, specify the network address, broadcast address, and maximum number of host IPs available. (Show all your work).**

192.168.100.0/24
100.10.8.0/22
202.1.0.0/16
101.51.192.0/18

	Network Addresses	Broadcast Adresses	Max host IPs.
i)	192.168.100.0 ⇒ 192.168.100.00000000	192.168.100.255 ⇒ 192.168.100.11111111	$2^8 - 2 = 256 - 2 = 254$
ii)	100.10.8.0 ⇒ 100.10.0000 8 1000 00000000	100.10.11.255 ⇒ 100.10.0000 1011 11111111	$2^{10} - 2 = 1020$
iii)	202.1.0.0 ⇒ 202.1.0000 0000.00000000	202.1.255.255 ⇒ 202.1.11111111.11111111	$2^{16} - 2 = 65534$
iv)	101.51.192.0 ⇒ 101.51.11000000.00000000	101.51.191.255 ⇒ 101.51.10111111.11111111	$2^{14} - 2 = 16382$

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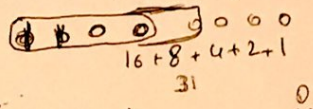
Name Hadeed Imran Roll No. 016-4221.

4/12

1. For each of the following IP address ranges, specify the network address, broadcast address, and maximum number of host IPs available. (Show all your work).

192.168.100.0/24
100.10.8.0/22
202.1.0.0/16
101.51.192.0/18



Sol:

1) 192.168.100.0/24 → Networks

Network address = 192.168.100.0
broadcast address = 192.168.100.~~192~~ 191
Maximum no of hosts IPs available = 2~~99~~ - 2 = ~~297~~ 254

2) 100.10.8.0/22

Network address = 100.10.8.0
broadcast address = 100.10.8.~~255~~ 176
Maximum no of hosts IP's available = 171 - 2 = 175.

3) 202.1.0.0/16

N.A = 202.1.0.0
Broadcast Address = 202.1.128.0
Host IP's = 129 - 2 = 127

4) 101.51.192.0/18

NA = 101.51.192.0
BA = 101.51.192.130
IP's = 129