**ID:\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DCAN202 Week 7 Tutorial – Data Communication and Networking**

**Q-1**

By using subnet calculator find network ID, host range, broadcast ID and what IP class for the following IP address below -

1. 192.168.11.0/24

2. 192.168.50.55/21

3. 202.10.13.0/24

4. 192.168.40.12/24

5. 10.5.52.0/28

Subnetting Calculator:

<https://www.calculator.net/ip-subnet-calculator.html>

<http://jodies.de/ipcalc>

Learn IP Subnetting from the video below:

<https://www.youtube.com/watch?v=POPoAjWFkGg>

Ans:

Subnetting Calculations

Subnetting Calculations

1. 192.168.11.0/24

Network ID: 192.168.11.0

Host Range: 192.168.11.1 – 192.168.11.254

Broadcast ID: 192.168.11.255

IP Class: Class C (Private)

2. 192.168.50.55/21

Network ID: 192.168.48.0

Host Range: 192.168.48.1 – 192.168.55.254

Broadcast ID: 192.168.55.255

IP Class: Class C (Private)

3. 202.10.13.0/24

Network ID: 202.10.13.0

Host Range: 202.10.13.1 – 202.10.13.254

Broadcast ID: 202.10.13.255

IP Class: Class C (Public)

4. 192.168.40.12/24

Network ID: 192.168.40.0

Host Range: 192.168.40.1 – 192.168.40.254

Broadcast ID: 192.168.40.255

IP Class: Class C (Private)

5. 10.5.52.0/28

Network ID: 10.5.52.0

Host Range: 10.5.52.1 – 10.5.52.14

Broadcast ID: 10.5.52.15

IP Class: Class A (Private)

**Q-2**

ABC Organisation wants to create 3 Networks for the following Team:

Customer Service Team: 120 People

Admin Team: 50 People

IT Team: 60

Use 192.168.10.0 IP range and create 3 networks so that minimum IP is wasted.

Ans:

Given IP Range: 192.168.10.0/24

Subnet Requirements:

Customer Service Team: 120 hosts

Admin Team: 50 hosts

IT Team: 60 hosts

Subnet Allocation Using VLSM:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Team | Subnet Mask | Network ID | Host Range | Broadcast ID | Usable Hosts |
| Customer Service | 255.255.255.128 (/25) | 192.168.10.0 | 192.168.10.1 – 192.168.10.126 | 192.168.10.127 | 126 |
| IT Team | 255.255.255.192 (/26) | 192.168.10.128 | 192.168.10.129 – 192.168.10.190 | 192.168.10.191 | 62 |
| Admin Team | 255.255.255.192 (/26) | 192.168.10.192 | 192.168.10.193 – 192.168.10.254 | 192.168.10.255 | 62 |