Computer Networks Laboratory

Lab Quiz # 1 (IP Addressing and Subnetting) Summer 2022

Name: ID: Sec:

Q.1 Suppose you are a network administrator and you will design your network with a new address scheme. For this design, you need **100 usable IP** address for each subnet network. You chose a Class-C address like **192.168.6.0/24**. Now, Find the details address of **Subnet # 1.** **[5 x 2 = 10]**
[** Find Subnet Mask, Network Address, Broadcast Address, 1st IP Address and Last IP Address]

Sub. Mask: 255.255.255.128

Net. Address: 192.168.6.128/25

Bro. Address: 192.168.6.255 /25

1st IP: 192.168.6.129

Last IP: 192.168.6.254

Q.2 Answer the following questions: **[5 x 2 = 10]**

1. What is the **last valid host** on the sub-network 171.20.26.0/23?
2. What is the **broadcast address** of the network 193.168.191.240/30?
3. What is the **first valid host** on the sub-network that the node 172.16.191.40/21 belongs to?
4. How many **subnets** and **hosts per subnet** can you get from the network 172.26.0.0/25?
5. You are designing a subnet mask for the 172.21.0.0 network. You want 700 subnets with up to 40 hosts on each subnet. What **subnet mask** should you use?

Ans:

1. 172.20.27.254
2. 192.168.191.243
3. 172.16.184.1
4. Subnets $\Rightarrow 2^9$; Hosts $\Rightarrow 2^7 - 2 = 126$
5. /26 = 255.255.255.192

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Computer Networks Laboratory

Lab Quiz # 1 (IP Addressing and Subnetting) Summer 2022

Name: ID: Sec:

Q.1 Suppose you are a network administrator and you will design your network with a new address scheme. For this design, you need **50 usable IP** address for each subnet network. You chose a Class-C address like **192.168.3.0/24**. Now, Find the details address of **Subnet # 2.** **[5 x 2 = 10]**
[** Find Subnet Mask, Network Address, Broadcast Address, 1st IP Address and Last IP Address]

Sub. Mask: 255.255.255.192

Net. Add: 192.168.3.128 /26

Broad. Add: 192.168.3.191/26

1st IP: 192.168.3.129

Last IP: 192.168.3.190

Q.2 Answer the following questions: **[5 x 2 = 10]**

1. What is the **last valid host** on the sub-network 171.20.26.0/23?
2. What is the **broadcast address** of the network 193.168.191.240/30?
3. What is the **first valid host** on the sub-network that the node 172.16.191.40/21 belongs to?
4. How many **subnets** and **hosts per subnet** can you get from the network 172.26.0.0/25?
5. You are designing a subnet mask for the 172.21.0.0 network. You want 700 subnets with up to 40 hosts on each subnet. What **subnet mask** should you use?

Ans:

1. 172.20.27.254

2. 192.168.191.243

3. 172.16.184.1

4. Subnet $\Rightarrow 2^9$; Host $\Rightarrow 2^7 - 2 = 126$

5. /26 = 255.255.255.192

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Lab Quiz # 1 (IP Addressing and Subnetting) Summer 2022

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Q.1 Suppose you are a network administrator and you will design your network with a new address scheme. For this design, you need **15 usable IP** address for each subnet network. You chose a Class-C address like **192.168.2.0/24**. Now, Find the details address of **Subnet # 6.** **[5 x 2 = 10]**
[** Find Subnet Mask, Network Address, Broadcast Address, 1st IP Address and Last IP Address]

Subnet Mask: 255.255.255.224

Net. Add: 192.168.2.192 /27

Bro. Add: 192.168.2.223 /27

1st IP: 192.168.2.193

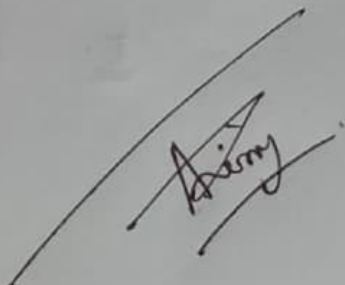
Last IP: 192.168.2.222

Q.2 Answer the following questions: **[5 x 2 = 10]**

1. What is the **last valid host** on the sub-network 171.20.26.0/23?
2. What is the **broadcast address** of the network 193.168.191.240/30?
3. What is the **first valid host** on the sub-network that the node 172.16.191.40/21 belongs to?
4. How many **subnets** and **hosts per subnet** can you get from the network 172.26.0.0/25?
5. You are designing a subnet mask for the 172.21.0.0 network. You want 700 subnets with up to 40 hosts on each subnet. What **subnet mask** should you use?

Ans:

1. 172.20.27.254
2. 192.168.191.243
3. 172.16.184.1
4. subnets $\Rightarrow 2^9$; Hosts $\Rightarrow 2^7 - 2 = 126$
5. /26 = 255.255.255.192



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Name: ID: Sec:

Q.1 Suppose you are a network administrator and you will design your network with a new address scheme. For this design, you need **20 usable IP** address for each subnet network. You chose a Class-C address like **192.168.5.0/24**. Now, Find the details address of **Subnet # 5.** **[5 x 2 = 10]**
[** Find Subnet Mask, Network Address, Broadcast Address, 1st IP Address and Last IP Address]

Sub. Mask: 255.255.255.224

Net. Address: 192.168. 5. 160/27

Brod. Address: 192.168.5.191/27

1st IP: 192.168.5.161

Last IP: 192.168.5.190

Q.2 Answer the following questions: **[5 x 2 = 10]**

1. What is the **last valid host** on the sub-network 171.20.26.0/23?
2. What is the **broadcast address** of the network 193.168.191.240/30?
3. What is the **first valid host** on the sub-network that the node 172.16.191.40/21 belongs to?
4. How many **subnets** and **hosts per subnet** can you get from the network 172.26.0.0/25?
5. You are designing a subnet mask for the 172.21.0.0 network. You want 700 subnets with up to 40 hosts on each subnet. What **subnet mask** should you use?

Ans:

1. 172.20.27.254

2. 192.168.191.243

3. 172.16.184.1

4. Subnet $\Rightarrow 2^9$; Hosts $\Rightarrow 2^7 - 2 = 126$

5. 126 $\Rightarrow$ 255.255.255.192

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Lab Quiz # 1 (IP Addressing and Subnetting) Summer 2022

Name: ID: Sec:

Q.1 Suppose you are a network administrator and you will design your network with a new address scheme. For this design, you need **31 usable IP** address for each subnet network. You chose a Class-C address like **192.168.4.0/24**. Now, Find the details address of **Subnet # 3.** **[5 x 2 = 10]**
[** Find Subnet Mask, Network Address, Broadcast Address, 1st IP Address and Last IP Address]

Sub. Mask: 255.255.255.192

Net. Address: 192.168.4.192/26

Bro. Address: 192.168.4.255

1st IP: 192.168.4.193

Last IP: 192.168.4.254

Q.2 Answer the following questions: **[5 x 2 = 10]**

1. What is the **last valid host** on the sub-network 171.20.26.0/23?
2. What is the **broadcast address** of the network 193.168.191.240/30?
3. What is the **first valid host** on the sub-network that the node 172.16.191.40/21 belongs to?
4. How many **subnets** and **hosts per subnet** can you get from the network 172.26.0.0/25?
5. You are designing a subnet mask for the 172.21.0.0 network. You want 700 subnets with up to 40 hosts on each subnet. What **subnet mask** should you use?

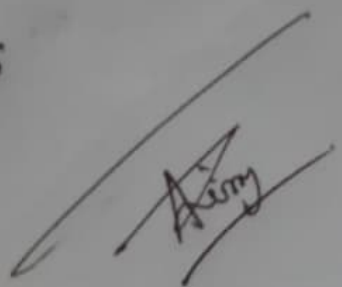
Ans: 1. 172.20.27.254

2. 192.168.191.243

3. 172.16.184.1

4. Subnets $\Rightarrow 2^9$; Hosts $\Rightarrow 2^7 - 2 = 126$

5. /26 = 255.255.255.192



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Lab Quiz # 1 (IP Addressing and Subnetting) Summer 2022

Name: ID: Sec:

Q.1 Suppose you are a network administrator and you will design your network with a new address scheme. For this design, you need **10 usable IP** address for each subnet network. You chose a Class-C address like **192.168.1.0/24**. Now, Find the details address of **Subnet # 10.** **[5 x 2 = 10]**
[** Find Subnet Mask, Network Address, Broadcast Address, 1st IP Address and Last IP Address]

Subnet Mask: 255.255.255.240

Network Address: 192.168.1.160/28

Broadcast Address: 192.168.1.175/28

1st IP: 192.168.1.161

Last IP: 192.168.1.174

Q.2 Answer the following questions: **[5 x 2 = 10]**

1. What is the **last valid host** on the sub-network 172.20.26.0/23?
2. What is the **broadcast address** of the network 192.168.191.240/30?
3. What is the **first valid host** on the sub-network that the node 172.16.191.40/21 belongs to?
4. How many **subnets** and **hosts per subnet** can you get from the network 172.26.0.0/25?
5. You are designing a subnet mask for the 172.21.0.0 network. You want 700 subnets with up to 40 hosts on each subnet. What **subnet mask** should you use?

Ans:

1. Last IP: 172.20.27.254
2. Bro. Address: 192.168.191.243
3. 1st IP: 172.16.184.1
4. Total Subnets $\Rightarrow 2^9$; Hosts $\Rightarrow 2^7 - 2 = 126$
5. /26 = 255.255.255.192

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