CN LAB Assignment -1   
Batch -66A

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1. Design the following topology in packet tracer using Static, RIP, OSPF routing (separately).

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2. Fill up the following table 1, 2, 3.

**Table 1: Subnet Information**

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| --- | --- | --- | --- | --- |
| **Subnet Number** | **Subnet Address and Subnet Mask** | **First Host Address** | **Last Host Address** | **Gateway Address** |
| **1** | **170.0.0.0/24**  **255.255.255.0** | **170.0.0.1/24** | **170.0.0.254/24** | **170.0.0.1/24** |
| **2** | **170.0.1.0/25**  **255.255.255.128** | **170.0.1.1/25** | **170.0.1.126/25** | **170.0.1.1/25** |
| **3** | **170.0.1.128/27**  **255.255.255.224** | **170.0.1.129/27** | **170.0.1.158/27** | **170.0.1.129/27** |
| **4** | **170.0.1.160/28**  **255.255.255.240** | **170.0.1.161/28** | **170.0.1.174/28** | **170.0.1.161/28** |
| **5** | **170.0.1.176/30**  **255.255.255.252** | **170.0.1.177/30** | **170.0.1.178/30** | **N/A** |
| **6** | **170.0.1.180/30**  **255.255.255.252** | **170.0.1.181/30** | **170.0.1.182/30** | **N/A** |
| **7** | **170.0.1.184/30**  **255.255.255.252** | **170.0.1.185/30** | **170.0.1.186/30** | **N/A** |
| **8** | **170.0.1.188/30** | **170.0.1.189/30** | **170.0.1.190/30** | **N/A** |

**Table 2: Addressing Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Device** | **Interface** | **IP address** | **Subnet Mask** |
| **R1** | **FastEthernet 0/0** | **170.0.1.161/28** | **255.255.255.240** |
| **Serial 2/0** | **170.0.1.177/30** | **255.255.255.252** |
| **Serial 3/0** | **170.0.1.185/30** | **255.255.255.252** |
| **R2** | **FastEthernet 0/0** | **170.0.1.129/27** | **255.255.255.224** |
| **Serial 2/0** | **170.0.1.178/30** | **255.255.255.252** |
| **Serial 3/0** | **170.0.1.189/30** | **255.255.255.252** |
| **R3** | **FastEthernet 0/0** | **170.0.0.1/24** | **255.255.255.0** |
| **Serial 2/0** | **170.0.1.182/30** | **255.255.255.252** |
| **Serial 3/0** | **170.0.1.190/30** | **255.255.255.252** |
| **R4** | **FastEthernet 0/0** | **170.0.1.1/25** | **255.255.255.128** |
| **Serial 2/0** | **170.0.1.181/30** | **255.255.255.252** |
| **Serial 3/0** | **170.0.1.186/30** | **255.255.255.252** |

**Table 3: Static Routing Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Router** | **Unknown Network Address** | **Mask Address** | **Next Hop** |
| **R1** |  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| **R2** |  |  |  |
|  |  |  |
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|  |  |  |
|  |  |  |
| **R3** |  |  |  |
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|  |  |  |
| R4 |  |  |  |
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**Table 4: RIP Routing Table**

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| --- | --- |
| **Router** | **Neighbor Network Address** |
| **R1** | **170.0.1.160** |
| **170.0.1.176** |
| **170.0.1.184** |
|  |
|  |
| **R2** | **170.0.1.128** |
| **170.0.1.176** |
| **170.0.1.188** |
|  |
|  |
| **R3** | **170.0.0.0** |
| **170.0.1.180** |
| **170.0.1.188** |
|  |
|  |
| R4 | **170.0.1.0** |
| **170.0.1.180** |
| **170.0.1.184** |
|  |
|  |

**Table 5: OSPF Routing Table**

|  |  |  |
| --- | --- | --- |
| **Router** | **Neighbor Network Address** | **Wildcard Mask** |
| **R1** | **170.0.1.160** | **0.0.0.15** |
| **170.0.1.176** | **0.0.0.3** |
| **170.0.1.184** | **0.0.0.3** |
|  |  |
|  |  |
| **R2** | **170.0.1.128** | **0.0.0.31** |
| **170.0.1.176** | **0.0.0.3** |
| **170.0.1.188** | **0.0.0.3** |
|  |  |
|  |  |
| **R3** | **170.0.0.0** | **0.0.0.255** |
| **170.0.1.180** | **0.0.0.3** |
| **170.0.1.188** | **0.0.0.3** |
|  |  |
|  |  |
| R4 | **170.0.1.0** | **0.0.0.127** |
| **170.0.1.180** | **0.0.0.3** |
| **170.0.1.184** | **0.0.0.3** |
|  |  |
|  |  |

**4. Address space according to your Student ID.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Your ID** | **A No. of Hosts** | **B No. of Hosts** | **C No. of Hosts** | **D No. of Hosts** | **Address Space** |
| CSE 054 06806 | 1000 | 2000 | 3000 | 1000 | 172.0.0.0/16 |
| CSE 062 07343 | 100 | 200 | 300 | 200 | 172.0.128.0/17 |
| CSE 064 07522 | 500 | 1000 | 600 | 500 | 172.0.192.0/18 |
| CSE 066 07652 | 10 | 20 | 200 | 100 | 170.0.0.0/8 |
| CSE 066 07653 | 500 | 1000 | 600 | 50 | 10.224.0.0/11 |
| CSE 066 07654 | 50 | 100 | 700 | 50 | 10.240.0.0/12 |
| CSE 066 07655 | 30 | 500 | 4000 | 30 | 120.0.0.0/8 |
| CSE 066 07656 | 2000 | 200 | 20 | 20 | 5.0.0.0/8 |
| CSE 066 07658 | 3000 | 300 | 30 | 30 | 10.128.0.0/9 |
| CSE 066 07659 | 5 | 10 | 150 | 150 | 192.0.0.0/10 |
| CSE 066 07660 | 35 | 150 | 250 | 35 | 192.192.0.0/10 |
| CSE 066 07661 | 2000 | 3000 | 4000 | 2000 | 10.0.0.0/8 |
| CSE 066 07662 | 1000 | 100 | 10 | 10 | 10.0.0.0/8 |
| CSE 066 07664 | 1000 | 2000 | 5 | 5 | 165.16.0.0/16 |
| CSE 066 07665 | 5 | 16 | 8 | 16 | 15.0.0.0/8 |
| CSE 066 07666 | 150 | 25 | 756 | 15 | 16.128.0.0/9 |
| CSE 066 07667 | 700 | 800 | 900 | 800 | 16.192.0.0/10 |
| CSE 066 07671 | 2000 | 2000 | 4000 | 1000 | 10.128.0.0/9 |
| CSE 066 07672 | 512 | 10 | 1000 | 500 | 10.224.0.0/11 |
| CSE 066 07673 | 323 | 123 | 423 | 300 | 170.0.0.0/8 |
| CSE 066 07674 | 15 | 515 | 5000 | 15 | 3.0.0.0/8 |
| CSE 066 07675 | 5 | 10 | 30 | 10 | 192.160.15.0/24 |
| CSE 066 07677 | 100 | 10 | 25 | 10 | 192.160.254.0/23 |
| CSE 066 07678 | 1500 | 1800 | 800 | 800 | 4.0.0.0/9 |
| CSE 066 07679 | 1800 | 2000 | 10 | 800 | 5.0.0.0/8 |
| CSE 066 07680 | 1000 | 2000 | 3000 | 100 | 172.0.0.0/16 |
| CSE 066 07681 | 5 | 50 | 1000 | 1000 | 165.16.0.0/16 |
| CSE 066 07806 | 1500 | 250 | 756 | 15 | 16.128.0.0/9 |
| CSE 066 07807 | 2000 | 3000 | 60 | 2000 | 10.0.0.0/8 |
| If ID not in the list | 2000 | 3000 | 60 | 2000 | 10.0.0.0/8 |