WEEK 10 PRACTICAL WORKSHEET

**NAME: CLASS DAY & TIME:**

Note: While following the steps in Week 10 Practical instruction PDF, type your answers to the questions in this worksheet. After finish, submit the worksheet by following the requirement given on page 1 of Week 10 Practical instruction PDF.

Lab – Convert IPv4 Addresses between Dotted Decimal and Binary

**Part 2, step 1:**

|  |  |
| --- | --- |
| Decimal | Binary |
| 168 | 10101000 |
| 10 | 1010 |
| 255 | 11111111 |

**Part 2, Step 2:**

|  |  |
| --- | --- |
| Decimal | Binary |
| 172.16.18.183 | 10101100.00010000.00010010.10110111 |
| 10.86.252.17 | 00001010.01010110.11111100.00010001 |
| 255.255.192.0 | 11111111.11111111.11000000.00000000 |

**Part 3:**

|  |  |
| --- | --- |
| Binary | Decimal |
| 11000000.10101000.01100100.00011000 | 192.168.100.24 |
| 11100000.00000001.00000011.11111110 | 224.1.3.254 |
| 11111111.11111111.11111111.11110000 | 255.255.255.240 |

**Lab - Identifying IPv4 Addresses**

Part 1. Use Bitwise ANDing Operation to Determine Network Addresses

|  |  |  |  |
| --- | --- | --- | --- |
| a | Description | Decimal | Binary |
|  | IP Address | 172.16.145.29 | 10101100.00010000.10010001.00011101 |
|  | Subnet Mask | 255.255.0.0 | 11111111.11111111.00000000.00000000 |
|  | Network Address | 172.16.0.0 | 10101100.00010000.00000000.00000000 |

|  |  |  |  |
| --- | --- | --- | --- |
| b | Description | Decimal | Binary |
|  | IP Address | 192.168.10.10 | 11000000.10101000.00001010.00001010 |
|  | Subnet Mask | 255.255.255.0 | 11111111.11111111.11111111.00000000 |
|  | Network Address | 192.168.10.0 | 11000000.10101000.00001010.00000000 |

|  |  |  |  |
| --- | --- | --- | --- |
| c | Description | Decimal | Binary |
|  | IP Address | 192.168.68.210 | 11000000.10101000.01000100.11010010 |
|  | Subnet Mask | 255.255.255.128 | 11111111.11111111.11111111.10000000 |
|  | Network Address | 192.168.68.128 | 11000000.10101000.01000100.10000000 |

|  |  |  |  |
| --- | --- | --- | --- |
| d | Description | Decimal | Binary |
|  | IP Address | 172.16.188.15 | 10101100.00010000.10111100.00001111 |
|  | Subnet Mask | 255.255.240.0 | 11111111.11111111.11110000.00000000 |
|  | Network Address | 172.16.176.0 | 10101100.00010000.10110000.00000000 |

Part 2. Identify Network, Broadcast and Usable Host Addresses

|  |  |  |
| --- | --- | --- |
| **a** |  | Given: |
|  | IP Address | 192.168.10.10 |
|  | Subnet Mask | /24 |
|  | Find: |  |
|  | Subnet mask in **dotted decimal** format | 255.255.255.0 |
|  | Network Address | 192.168.10.0 |
|  | First usable host address | 192.168.10.1 |
|  | Last usable host address | 192.168.10.254 |
|  | Broadcast address | 192.168.10.255 |

|  |  |  |
| --- | --- | --- |
| b | Given: | |
|  | IP Address | 10.101.99.17 |
|  | Subnet Mask | /23 |
|  | Find: | |
|  | Subnet mask in **dotted decimal** format | 255.255.254.0 |
|  | Network Address | 10.101.98.0 |
|  | First usable host address | 10.101.98.1 |
|  | Last usable host address | 10.101.99.254 |
|  | Broadcast address | 10.101.99.255 |

|  |  |  |
| --- | --- | --- |
| c | Given: | |
|  | IP Address | 209.165.200.227 |
|  | Subnet Mask | /27 |
|  | Find: | |
|  | Subnet mask in **dotted decimal** format | 255.255.255.224 |
|  | Network Address | 209.165.200.224 |
|  | First usable host address | 209.165.200.225 |
|  | Last usable host address | 209.165.200.254 |
|  | Broadcast address | 209.165.200.255 |

Part 3. Apply Network Address Calculations

**Step 1**

a. 1) 192.168.1.16

a. 2) 192.168.1.32

a. 3) No

a. 4) 192.168.1.30

b. 1) 10.0.0.0

b. 2) 10.0.0.0

b. 3) Yes

b. 4) 10.1.255.254

**Step 2**

a. 1) 172.16.128.0

a. 2) 172.16.128.1

b. 1) 192.168.184.224

b. 2) 192.168.184.225