### Cisco 1 IPv4 Assignment 9

### Given – 25.25.69.255 /19

1. Write the mask in dotted decimal format. (2 marks)  
   255.255.224.0
2. What is the network address? (3 marks)  
   25.25.69.0
3. How many host bits are there? (1 mark)  
   13
4. How many total addresses are there? (2 marks)  
   8192
5. How many host addresses are created? (2 marks)  
   8190
6. What is the range of host addresses? (3 marks)  
   25.25.69.1 – 25.25.224.253
7. What is the broadcast address for this network? (2 marks)  
   25.25.224.254

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### Given 14.5.0.0 /14

1. Is this a valid host address? (yes/no) (2 marks)  
     
   no
2. Explain. (6 marks)  
   the host addresses starts from 1 as this address prefix is 14 , its in the 2nd octate. To be a host it should be 14.5.1.0

### Given 172.38.0.0 /16

To control broadcasts, you need to create 63 new subnetworks.

1. How many host bits do you borrow? (2 marks)  
   16
2. What is the new mask? (4 marks)  
   255.255.0.0
3. List the first 10 subnetworks you created. Include the mask in dotted decimal. (10 marks)  
     
   172.38.1.0/16 – 255.255.0.0  
   172. 38.2.0/16- 255.255.0.0  
   172. 38.3.0/16- 255.255.0.0  
   172. 38.4.0/16- 255.255.0.0  
   172. 38.5.0/16- 255.255.0.0  
   172. 38.6.0/16- 255.255.0.0  
   172. 38.7.0/16- 255.255.0.0  
   172. 38.8.0/16- 255.255.0.0

172. 38.9.0/16- 255.255.0.0

172. 38.10.0/16- 255.255.0.0

1. List the range of hosts for Subnet 2. (This is the 3rd subnet.) (4 marks)  
   172.38.3.1 – 172.38.3.254
2. List the broadcast address for subnet 5. (This is the 6th subnet.) (2 marks)

172.38.6.255

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### Given 205.80.90.0 /24. You are subnetting to create the necessary broadcast domains for the following organizational groups:

Management 15 users  
Production 56 users  
Sales 8 users  
Shipping 4 users  
ISP connection 2 host addresses

1. How many host bits must be left to accommodate the users in the above subnets? (5 marks)
2. How many bits remain for subnetting in each of the above subnets? (5 marks)
3. List the new masks for each subnet? (5 marks)
4. List the subnet addresses with the CIDR notation mask for each of the subnets. (10 marks)
5. List the range of hosts and the broad cast address for subnet 0 (the 1st subnet). (2 marks)
6. List the range of hosts and the broad cast address for the WAN subnet. (2 marks)
7. Do you have any space left in the /24? If so list the range of IP addresses that are available for future use. (2 marks)

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 74