WEEK2 ASSIGNMENTS

1. Assume a layered networking architecture. The packet structure in this architecture, as seen at the at the lowest (physical ) layer, is as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| AICTE Header | WBUT Header | INSTITUTE Header | Student data |

Sketch the layered protocol model that applies to the given architecture(i.e. packet) by labeling each layer in the figure below with the appropriate layer name. Your choices are AICTE,WBUT,INSTITUTE and Student data.  
-----------------------------------layer  
-----------------------------------layer  
------------------------------------layer  
-----------------------------------Layer

1. compare mesh and star topology.
2. Why is coaxial cable superior to twisted pair cable?
3. For following situation state which type of network architecture is appropriate.  
    1. No of users 50  
    2. data and resources need to be restricted  
    3. No. network administrator required  
    4. All users with equal priority.
4. Discuss the advantage of fiber optic cable.
5. FDM, Twisted pair Cables. Traditional Ethernet.
6. What is the purpose of subletting? Find the netid and the hostid of the following IP addresses.  
    1. 19.34.21.5  
    2. 220.34.8.9
7. An ISP is granted a block of addresses starting with 190.100.0.0/16. The ISP needs to distribute these address to three groups of customers as follows:  
    a) The 1st group has 64 customers: each need 256 addresses.  
    B) The 2nd group has 128 customers; each needs 128 addresses.  
    C) The 3rd group has 128 customers; each needs 64 addresses.  
   Design the sub blocks and give the slash notation for each sunblock.
8. An IP network 192.168.130.0 is using the subnet mask 255.255.2555.224. Determine the number of subnet , number of host in each subnet and from what subnet the following hosts belong to:  
    192.168.130.10 192.168.130.93  
    192.168.130.222 192.168.130.250
9. Difference between IP address and MAC address.
10. State the advantage of IPV6 over IPv4.
11. A network is with subnet mask of 255.255.255.254 . Determine maximum number of Hosts in the networks. What is the broadcast address of the network?
12. What do you mean by a Private address? What is NAT?
13. What is CIDR notation ? What is its significant in case of classless addressing?
14. An organization is granted the block 211.17.189.124. the administrator wants to create 32 subnets.  
     i. find the subnet mask  
     ii. Find the number of addresses in each subnet  
     iii. Find the first and last address in the first subnet  
     iv. Find the first and last address in the last subnet.
15. Compare TCP with UDP.