SET B

Class: V Sem/B.Tech-IT
Duration: 100 minutes/2 Periods

Date: 23.8.17
Max Marks: 50 Marks

PART B (Answer any 5)

5*4=20 Marks

1. List the advantages of Layered Architecture and match the following into one or more layers of (
   * Communication directly with the user's application program
   * Error correction and transmission
   * Mechanical, Electrical and functional interface
   * Responsibility of carrying frames between adjacent nodes
2. What are the factors that determine whether a communication system is a LAN or WAN?
3. How layer two device switches different from layer one device hub? Discuss its advantages and
4. Give the ranges of different classes in Classful addressing.
5. What is VLSM? Mention the advantages of it.
6. What is maximum number of subnets in Class A and Class B where subnet mask is 255.255.192.
7. Find the class of the following IP addresses.
   a. 11110111.11110011.10000111.11011101
   b. 10101111.11000000.11110000.00011101
   c. 11011111.10110000.00011111.01011101
   d. 11101111.11110111.11000111.00011101

PART C

2*15=30 Marks

8a. Define topology. Explain the various network topologies with merits and demerits with a neat sketch

[or]

b. Explain the functionalities of each layer in OSI model.

9.a. An organization is granted the block 172.0.0.0/16. The administrator wants to create 500 fixed length subnets.
   (i) Find the subnet mask.
   (ii) Find the number of addresses in each subnet.
   (iii) Find the first and last addresses in subnet 1.
   (iv) Find the first and last addresses in subnet 500.

[or]

9.b. An organization is granted the block 130.56.0.0/16. The administrator wants to create 1024 subnets
   (i) Find the subnet mask.
   (ii) Find the number of addresses in each subnet.
   (iii) Find the first and last addresses in subnet 1.
   (iv) Find the first and last addresses in subnet 1024