53 (CS 815) TDIM

2013

(December)

TCP/IP DESIGN AND IMPLEMENTATION

Paper : CS 815

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any 10** questions **out of 11** questions.*

1. How does each layer hide their header information of the datagram packets ? Briefly explain how the header information hide in each layer of the TCP/IP model with the diagram. If the protocol data unit has name in any of the layer mention it. 6+4=10

2. What are the actions that IP routing functions ? Explain how does a router and a host operates during the ICMP router discovery process ? 3+7=10

3. Given a range of IP address 192.168.20 0/24. If you have to create four subnets, starting from subnet #0, #1, #2 and #3. Calculate the following information for subnet #2. 10

a. Find the network route address

b. Find the broadcast address

c. Find the starting and ending

host addresses

d. Find how many addresses

are there

e. Show the subnet mask.

f. Show a possible default gateway for the subnetwork. Make assumption if applicable.

[Hint : 192 = 11000000, 168 = 10101000, 20 = 10100]

4. When you connect to a host using ftp. for example #ftp intranet cit.ac.in. What are the operations that has to be performed during the process, explain briefly with diagram. 6+4=10

5. What is TCP Half Close and Half Open ? Explain how connection is established and terminated in TCP/IP protocol. 4+6=10

6. What is IP ? Explain the IPv4 Header format with diagram. 2+8=10

7. Explain the BOOTP Packet format and mention all the BOOTP request and reply operation. 10

8. What is BGP ? Explain the BGP protocol and the applications of BGP protocol with example. 2+8=10

9. Short answer questions : 2×5=10

   a. Store and forward is a property for what ?

   b. Network byte ordering is a type of _____ ?

   c. Using RARP what information we may get ?

   d. What will be the header length if we add a 4 byte security field in the option field of IPv4 header ?

   e. What is the maximum length of IP datagram packet may have ?

10. Write short notes on : ***(any two)*** 5×2=10

a. ARP

b. IP Table

c. Little Endian Machines

11. What is UDP ? Explain UDP protocol with example application. 2+8=10
