Roll No. | | | | | | | | | | |

B.E / B.Tech (FT) END SEMESTER EXAMINATIONS – April / May 2019

Computer Science and Engineering
Fifth Semester
CS8501- Data Communication and Computer Networks
(Regulation 2012)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Write short notes on FTP protocol.
2. What is transmission delay?
3. Suppose host A wants to send a large file to host B. The path from host A to host B has three links, of rates R_1=500 kbps, R_2=2 Mbps, and R_3=1 Mbps. Assuming no other traffic in the network, what is the throughput for the file transfer?
4. Show the segment structure of UDP protocol.
5. Define- tunneling.
6. What protocol is used for the implementation of ping and traceroute utilities.
7. What are the functionalities of the layer 2 switch.?
8. What is ARP?
9. What is the need of spread spectrum. List out the spread spectrum techniques.
10. Write short notes on –BGP.

Part – B (5 x 16 = 80 marks)

11. a) Explain all possible E-mail protocols with their functionalities and features.

12. a) Explain the TCP congestion control and flow control mechanisms with FSM .

(OR)

b) Discuss the evolution from stop-and-wait protocol, Go-Back-N protocol till the Selective Repeat protocol.

13. a) i. A newly started IT industry got an IP address range 192.168.252/22 from its nearby ISP. It plans to setup same configured subnets for 8 divisions. Find the range of IP addresses, subnet addresses and subnet mask for each of the eight divisions. (10)
ii. Explain – DHCP protocol. (6)

(OR)

b) i. How to set up a private network with NAT protocol.? (8)
ii. Consider sending a 6000 byte datagram into a link that has an MTU of 800 bytes. Suppose a original datagram is stamped with an identification number of 422. How many fragments are generated? Describe their full characteristics. Point out the possible places of reassembly after fragmentation. (10)

14. a) Explain in detail - IEEE 802.11 frame format and the MAC protocol used in it.

(OR)

b) Discuss the frame format of Ethernet and the MAC protocol used in Ethernet.

15. a) i. Apply all possible encoding techniques over the digital data 0 0 0 0 1 1 1 0 1 1. (10)

ii. Explain in detail about the different transmission media used in computer networks (6)

(OR)

b) Discuss about all possible multiplexing techniques for both analog and digital signal.