USN | | | | | | | | | | |

10EC/TE71

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021

Computer Communication Networks

Time: 3 hrs. Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

1 a. Describe the ISO OSI reference model of a computer networks. Discuss the functions of each layer. **(10 Marks)**
b. Discuss dial-up MODEMS. **(06 Marks)**
c. Briefly explain services provided by telephone network. **(04 Marks)**

2 a. What is an ARQ? Describe in detail about Stop and Wait ARQ. **(08 Marks)**
b. With a neat diagram, explain HDLC frame format. **(08 Marks)**
c. Explain bit stuffing with an example. **(04 Marks)**

3 a. Compare pure ALOHA with slotted ALOHA. What are the reasons for poor channel utilization in ALOHA system. How the same is improved in CSMA? **(10 Marks)**
b. A pure ALOHA network transmits 200 bit from on a shared channel of 200 KBPS. What is the throughput if system produces (i) 500 frame/sec (ii) 250 frame/sec. **(04 Marks)**
c. Explain I-persistent and P-persistent schemes. **(06 Marks)**

4 a. Compare the data rates for Standard Ethernet, Fast Ethernet, Giga-bit Ethernet and Tea Giga-bit Ethernet. **(04 Marks)**
b. Explain 802.3 MAC frame format. **(08 Marks)**
c. Discuss IEEE 802.11 MAC Layer Wireless LAN in detail. **(08 Marks)**

PART – B

5 a. Explain the following connecting device:
(i) Repeater (ii) Bridge (iii) Router (iv) Gate way **(08 Marks)**
b. Explain Bus backbone and Star backbone networks. **(08 Marks)**
c. Explain VLAN. **(04 Marks)**

6 a. What is NAT? Explain how NAT help in address depletion. **(05 Marks)**
b. Explain structure, address space, uni-cast address of IPV6 address with an example. **(10 Marks)**
c. Explain classful addressing of IPV4 with examples. **(05 Marks)**

7 a. With a suitable diagram, explain distance vector routing. **(10 Marks)**
b. Discuss different forwarding techniques with a neat figure. **(08 Marks)**
c. What do you mean by uni-cast? **(02 Marks)**

8 a. Describe a TCP connection establishment using three way handshake. **(10 Marks)**
b. Explain TCP with a neat diagram. Write UDP frame format. **(10 Marks)**

* * * * *