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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)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.