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10EC/TE71

**Seventh Semester B.E. Degree Examination, July/August 2022**  
**Computer Communication Networks**

Time: 3 hrs.

Max. Marks:100

**Note:** Answer any FIVE full questions, selecting atleast TWO questions from each part.

**PART – A**

- 1 a. Match the following function to the appropriate layers in the OSI Model :
  - i) Dividing the transmitted bit stream into frames. (05 Marks)
  - ii) Reliable process to process message delivery. (05 Marks)
  - iii) Determining the route to be used through the subnet. (10 Marks)
  - iv) Format and code conversion services.
  - v) Accessing the World Wide Web.
- b. Describe the four levels of addressing used in TCP/IP with example. (05 Marks)
- c. What is ADSL? Describe its Modulation and Implementation Techniques. (10 Marks)
- 2 a. Explain the Go – back – N protocol with necessary figures. (10 Marks)
- b. Perform bit stuffing and destuffing on the given bit stream 0111110111110000. Assume the flag as 01111110. (05 Marks)
- c. Assume that, in a Stop – And – Wait ARQ system, the Band width of the line 2Mbps and 1 bit takes 20ms to make a round trip. What is the Bandwidth delay product? If the system data frames are 1000 bits in length, what is the utilization percentage of the link? (05 Marks)
- 3 a. What are three types of frames in HDLC? Explain each field of them briefly. (10 Marks)
- b. Discuss the concept of : i) 1 – persistence CSMA ii) Non persistence CSMA. (06 Marks)
- c. A network using CSMA/CD has a bandwidth of 10Mbps. If the maximum propagation type is 25.6 $\mu$ s. What is the minimum size of the frame? (04 Marks)
- 4 a. Discuss the Controlled Access methods. (06 Marks)
- b. Give the format for the IEEE 802.3 frame for Ethernet. (06 Marks)
- c. Explain the following with respect to Fast Ethernet :
  - i) Implementation
  - ii) 100 BASE – FX. (08 Marks)

**PART – B**

- 5 a. Explain the following connecting device : i) Active Hub ii) Repeater iii) Bridge iv) Router v) Gateway. (10 Marks)
- b. What are Transparent Bridge? With diagram, explain three criteria of transparent bridge. (10 Marks)
- 6 a. Explain in detail IPV<sub>4</sub> datagram format. (10 Marks)
- b. List and explain three transition strategies to Move from IPV<sub>4</sub> to IPV<sub>6</sub>. (06 Marks)
- c. Compare and contrast the fields in the main headers of IPV<sub>4</sub> and IPV<sub>6</sub>. (04 Marks)
- 7 a. What is the difference between a Direct and Indirect delivery? (04 Marks)
- b. List and explain three Forwarding Techniques. (08 Marks)
- c. Explain Dynamic Routing table. (08 Marks)
- 8 a. Describe TCP Connection and explain a TCP connection establishment using three way Hand Shaking. (10 Marks)
- b. Write short notes on : i) UDP ii) DNS. (10 Marks)

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