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.
    ii)   Reliable process to process message delivery.
    iii)   Determining the route to be used through the subnet.
    iv)   Format and code conversion services.
    v)   Accessing the World Wide Web.   **(05 Marks)**
   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_4 datagram format.   **(10 Marks)**
   b. List and explain three transition strategies to Move from IPV_4 to IPV_6.   **(06 Marks)**
   c. Compare and contrast the fields in the main headers of IPV_4 and IPV_6.   **(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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