CBCS SCHEME

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

17CS46

Fourth Semester B.E. Degree Examination, July/August 2021
Data Communication

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions.

1 a. What is data communication? Explain four fundamental characteristics. **(05 Marks)**
b. With a neat diagram, explain the four basic topologies. **(10 Marks)**
c. Write a short note on Wide Area Network. **(05 Marks)**

2 a. Explain circuit switched network and packet switched network with neat diagram. **(10 Marks)**
b. With a diagram explain the layers in the TCP/IP protocol suite in brief. **(10 Marks)**

3 a. Explain Pulse Code Modulation in brief by highlighting the components of PCM encoder with supporting diagram. **(10 Marks)**
b. Explain different data transmission modes with the diagram. **(10 Marks)**

4 a. List different categories of multiplexing and explain FDM and TDM with supporting diagrams. **(10 Marks)**
b. Explain the following:
(i) Frequency Hopping Spread Spectrum
(ii) Direct Sequence Spread Spectrum **(10 Marks)**

5 a. Explain in brief process of error detection in block coding. **(10 Marks)**
b. Write a short note on checksum with appropriate sketches. **(06 Marks)**
c. Define: (i) Hamming distance (ii) Burst error **(04 Marks)**

6 a. Distinguish between connectionless and connection oriented with respect to a DLC protocol. **(06 Marks)**
b. Explain simple protocol. **(06 Marks)**
c. Explain transition phases in a PPP connection. **(08 Marks)**

7 a. Distinguish between pure ALOHA and slotted ALOHA. **(05 Marks)**
b. Calculate the throughput S for a pure ALOHA network if the offered traffic 'G' is 0.75. **(03 Marks)**
c. Explain 1-persistent, non-persistent and p-persistent CSMA with flow diagrams. **(12 Marks)**

8 a. Explain three controlled access methods. **(12 Marks)**
b. What is channelization? Explain frequency division multiple access. **(08 Marks)**

9 a. Distinguish between fixed WiMAX and mobile WiMAX. **(08 Marks)**
b. Explain the three categories of satellites. **(12 Marks)**

10 a. Explain IPv6 datagram. **(10 Marks)**
b. Explain the three strategies which are devised for transition from IPv4 to IPv6. **(10 Marks)**

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