

CBCS SCHEME



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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)

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.