



10CS55

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022
Computer Networks – I

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART – A

- 1 a. What is data communication? Explain the fundamental characteristics and components of a data communication system. (10 Marks)
b. With a neat diagram, explain the interaction between layers in the OSI model. (10 Marks)
- 2 a. Explain the causes of transmission impairment. (07 Marks)
b. With a block diagram, explain the PCM encoder. (07 Marks)
c. Explain the different serial data transmission modes. (06 Marks)
- 3 a. What is FDM? Explain its multiplexing and demultiplexing process. (07 Marks)
b. What is spread spectrum? Explain Frequency Hopping Spread Spectrum (FHSS). (07 Marks)
c. Compare and contrast circuit switched network and packet switched network. (06 Marks)
- 4 a. Explain the process of error detection and error correction in block coding. (08 Marks)
b. Write a note on Linear Block codes. (06 Marks)
c. Generate the CRC codeword for dataword = 1001 and divisor = 1011. (06 Marks)

PART – B

- 5 a. Explain the importance of framing and Piggybacking techniques. (06 Marks)
b. Explain the different frame types in HDLC. (06 Marks)
c. Explain stop-and-wait automatic repeat request protocol. (08 Marks)
- 6 a. With suitable example, explain the working of CDMA. (06 Marks)
b. Explain 802.3 MAC frame format. (06 Marks)
c. With a flow diagram, explain the working of CSMA/CD. (08 Marks)
- 7 a. Explain the addressing mechanism in IEEE 802.11. (06 Marks)
b. Write a short note on cellular telephony. (06 Marks)
c. Explain Piconet and Scatternet. (08 Marks)
- 8 a. Write a note on IPV6 addresses. (10 Marks)
b. Draw the IPV4 datagram format and explain in brief each field. (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.