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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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