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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 codeward 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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