

Code No: 114CR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year II Semester Examinations, July/August - 2021

DATA COMMUNICATION

(Information Technology)

Time: 3 hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) Distinguish between serial and parallel data transmissions.
- b) Determine the minimum bandwidth, baud and bandwidth efficiency for a bit rate of 9600 bps with 8-PSK and 16-PSK. [7+8]
2. What is digital line encoding? What are factors that must be considered while selecting a line encoding format? [15]
- 3.a) Describe the operation of electronic telephones with necessary block diagram.
- b) What are the transmission parameters of a private line circuit? Describe them in detail. [7+8]
4. Determine BCS for the data polynomial $g(x) = x^7 + x^4 + x^2 + 1$ and CRC generating polynomial $p(x) = x^5 + x^4 + x + 1$? [15]
- 5.a) What is modem? Draw its block diagram and explain each block in detail.
- b) What is the use of scrambler and descrambler circuits? Explain. [8+7]
6. Explain the principle of QPSK with necessary waveform and constellation diagram. [15]
7. Describe various methods of maintaining frame synchronization in TDM. [15]
- 8.a) What are types of voice frequency circuit arrangements? Describe the four wire configurations in detail.
- b) Describe the basic principles of paging systems. [8+7]

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