

R07

Code No: S0524

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, March - 2017

DATA COMMUNICATION SYSTEMS

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

- 1.a) Describe the serial and parallel data transmission modes. [8+8]
- b) List and compare the basic data communications network topologies. [8+8]
- 2.a) Explain in detail the single-mode and multi-mode step-index optical fiber.
- b) Explain the characteristics and compare various types of metallic transmission lines. [10+6]
- 3.a) Explain the T1 digital carrier system with neat diagram.
- b) A PCM-TDM system multiplexers 24 voice band channels. Each sample is encoded into seven bits and a framing bit is added to each frame. The sampling rate is 8KHz. Determine the line speed in kbps. [8+8]
- 4.a) Describe the terrestrial propagation of Electromagnetic waves.
- b) Explain the optical properties of radio waves. [8+8]
- 5.a) What are the essential components of a standard telephone set? Explain.
- b) Describe the transmission characteristics of a local subscriber loop and also explain the loading coils and bridge taps. [8+8]
- 6.a) What is the importance of frequency reuse in cellular telephone systems.
- b) Explain the personal communications satellite system. [8+8]
- 7.a) Discuss the voice band Modem and its classifications with block diagram.
- b) Explain the different types of character codes used in Data communication system. [8+8]
8. Bring out the added capabilities in HDLC with respect to SLDC with both frames. [16]

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