

Code No: S9526**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, November/December - 2017****DATA COMMUNICATION SYSTEMS****(Information Technology)****Time: 3 hours****Max. Marks: 75****Answer any five questions****All questions carry equal marks**

- 1.a) Define information capacity, bit rate and Baud rate.
b) What is the need for layered architecture? Explain the features of various protocols used in TCP/IP reference model. [7+8]
- 2.a) Explain with suitable equation propagation of light through an optical fiber cable.
b) Write a short note on light sources and light detectors. [8+7]
- 3.a) Explain the time division multiplexing and frequency division multiplexing in detail.
b) What is the need of Companding? Differentiate between linear and non linear PCM codes. [7+8]
4. Discuss in detail about:
a) Terrestrial propagation of waves
b) Microwave link
c) Skip Distance. [5+5+5]
- 5.a) Explain basic telephones call procedures, call progress tones and signals.
b) Draw the block diagram of local subscriber loop and explain its working. [7+8]
- 6.a) Describe the working of analogue cellular telephone and digital cellular telephone systems with neat diagram.
b) Discuss various data communication codes and data formats used in cellular telephone systems. [8+7]
- 7.a) Discuss in detail about error detection and error correction codes used in data communication.
b) Describe the working of Voice Band data communication modem with help of neat diagrams and mention its specifications. [7+8]
8. Giving one example for each type, discuss how bit oriented and character oriented protocols functions. [15]