

**B.Tech III Year I Semester**

**JNTUA COLLEGE OF ENGINEERING (AUTONOMOUS) PULIVENDULA**

**19AEC56- DIGITAL COMMUNICATIONS LAB**

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**Course Objectives:** The objectives of the course are to make the students learn about

- To gain an understanding of analog to digital conversion techniques.
- To understand digital modulation, Source coding and Channel coding techniques.
- To analyze different digital communications techniques using MAT Lab tools.

**Minimum of Twelve experiments to be conducted (Part A -Eight & Part B - Four)**

**PART-A: HARDWARE EXPERIMENTS**

1. Sampling Theorem – verification.
2. Time division multiplexing.
3. Pulse code modulation.
4. Differential pulse code modulation.
5. Delta modulation.
6. Amplitude shift keying modulation and demodulation.
7. Frequency shift keying modulation and demodulation.
8. Phase shift keying modulation and demodulation.
9. Differential phase shift keying.
10. QPSK modulation and demodulation.
11. Linear Block Code – Encoder and Decoder.
12. Binary Cyclic Code – Encoder and Decoder.
13. Convolution Code – Encoder and Decoder.

**PART-B: SOFTWARE EXPERIMENTS**

1. Sampling Theorem – verification.
2. Pulse code modulation.
3. Differential pulse code modulation.
4. Delta modulation.
5. Frequency shift keying.
6. Phase shift keying.
7. Differential phase shift keying.
8. QPSK modulation and demodulation

**Course Outcomes:**

At the end of this Course the student will be able to

- Explain and demonstrate the conversion of analog to digital signals. **L3**
- Grasp the significance of digital modulation, Source coding and Channel coding techniques. **L1**
- Analyze different digital communications techniques using MATLAB tools. **L4**



