**SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY**

### ICHCHANATH, PIPLOD, SURAT-395007



**LABORATORY MANUAL**

# ELECTRONICS ENGINEERING DEPARTMENT EC: 303: DIGITAL COMMUNICATION

**B.TECH III-SEMESTER V**

NAME: SUTHAR HARSH MUKESHBHAI

ROLL NO: U19EC046

BATCH:

A-2

**SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY**

**ICHCHANATH, PIPLOD, SURAT-395007**

**ELECTRONICS ENGINEERING DEPARTMENT**

**CERTIFICATE**

This is to certify that Mr. SUTHAR HARSH MUKESHBHAI Roll no. U19EC046 has satisfactorily completed the lab exercises for EC: 303: DIGITAL COMMUNICATION of B.TECH III- SEMESTER V in the academic Year 2020-2021

SUBJECT CO-ORDINATOR

DATE:

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| **Sr. No.** | **Practical Name** | **Date** |
| 1. | To study and simulate Sampling theorem. Also observe  the effect of over and under-  sampling. | 02/08/2021 |
| 2. | Using Matlab Find:  1. Entropy of symbols given probability of each symbol  2. Convert an image to greyscale image and find the entropy of the image | 09/08/2021 |
| 3. | To determine Channel Capacity and Mutual Information for a Binary Symmetric  Channel. | 16/08/2021 |
| 4. | Write Matlab code to implement the Huffman coding, find average codeword length  and efficiency | 23/08/2021 |
| 5. | To study and simulate Shanon-fano coding as a source coding  technique. | 06/09/2021 |
| 6. | To study and simulate Hamming and Convolutional code as a channel coding  technique. | 13/09/2021 |
| 7. | To study and simulate Linear Block Code. | 11-10-2021 |
| 8. | To Study and simulate various Line Coding Techniques | 18-10-2021 |
| 9. | To study and simulate ASK, FSK and PSK. | 25-10-2021 |
| 10. | To study and simulate Quadrature Phase Shift Keying (QPSK). | 08-11-2021 |
| 11. | 1. To study and simulate Quadrature Amplitude Modulation and Demodulation and also plot its Constellation and Eye diagram 2. To compare and plot BER performance of 16\_QAM modulation for AWGN channels. | 15-11-2021 |
| 12. | To study the effect of ISI and implement Raised Cosine Filter. | 15-11-2021 |