Jaypee Institute of Information Technology, Noida

Department of Electronics and communication Engineering

Digital Systems Lab: Lab Experiments

1. **Write Matlab programs for the verification of truth tables of basic logic gates and their realization using universal logic gates.[CO1]**
2. **Write Matlab programs for half adder, half subtractor, full adder, and full subtractor. [CO1]**
3. **Write Matlab programs for the design of 2-to-4 decoder and 3-to-8 decoder. [CO1]**
4. **Write Matlab programs for the design of 2-to-1, 4-to-1, and 8-to-1multiplexers. [CO1]**
5. **Realization of SR Latch using MATLAB-Simulink. [CO2]**
6. **Realization of D Flip-Flop using MATLAB-Simulink. [CO2]**
7. **Realization of JK Flip-Flop using MATLAB-Simulink. [CO2]**
8. **Write Matlab programs for the generation of elementary continuous time signals and discrete time signals.[CO3]**
9. **Write Matlab program to study the sampling and reconstruction process. [CO3]**
10. **Write Matlab program to study the quantization process of sinusoid signals. [CO3]**
11. **Write Matlab programs to study the binary phase shift keying and frequency shift keying modulation process.[CO4]**
12. **Write Matlab programs to compute Discrete Fourier Transform (DFT) and Inverse Discrete Fourier Transform (IDFT) for the spectral analysis of signals. [CO3]**
13. **Write Matlab code for 8:3 encoder and priority encoder. [CO1]**
14. **Write Matlab code for Binary to Gray and Gray to Binary Code Converter. [CO1]**

Virtual Lab Experiments:-

1. **Design and simulation of Decoders, Encoders, Multiplexer and Demultiplexer.[CO1]**

   Link: http://cse15-iiith.vlabs.ac.in/exp2/Experiment.html?domain=Computer%20Science&lab=DLD%20Lab

   http://vlabs.iitkgp.ernet.in/dec/exp5/index.html#

2. **Analysis and synthesis of logic functions using Multiplexers.[CO1]**

   Link: http://vlabs.iitkgp.ernet.in/dec/exp4/index.html#