

LINEAR AND DIGITAL IC APPLICATIONS LAB

Course Code: 15EC1112

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Course Outcomes:

At the end of the course the student will be able to

CO 1 Design of Linear and Non Linear Applications using IC 741

CO 2 Design Astable Multivibrator, Monostable Multivibrator using timer ICs.

CO 3 Design of 4-bit D/A converter & A/D converter.

CO 4 Study of combinational and Sequential Circuits using Logic Gates.

CO 5 Design of Counter, Registers using Flip-Flops

Note: Any TEN of the above experiments are to be conducted.

LIST OF EXPERIMENTS:

1. Integrator, differentiator using IC 741 (Design an Integrator and Differentiator using IC 741 at a given frequency and obtain its Output Response when input is a Square Wave, Sine Wave).
2. Function Generator using IC 741 (Design an Oscillator using IC 741 which generates Square Wave and Triangular Wave at a given Frequency).
3. Astable and Monostable multivibrator using 555 Timer (Design a Square Wave Generator using 555 Timer and Design a Monostable Multivibrator using 555 Timer at a given Pulse width)
4. 4-bit D/A converter (Design a 4 bit D/A Converter and plot its analog output versus Digital Input)
5. 4-bit A/D converter (Design a 4 bit A/D Converter and verify its Conversion)

6. Comparators using Op-Amp(Design a Inverting and Non-Inverting Comparator with and without Reference Voltage)
7. Study of Logic Gates using Discrete Components (Verify the Truth Tables of Basic Gates and Universal Gates and design of logic Function using Basic Gates)
8. Study of Combinational Circuits(Verify the truth Tables of Adder, Subtractor Circuits and design a Ripple Carry Adder/Subtractor Circuits)
9. Study of Flip-Flops (Verify the Truth Tables of SR ,JK,T,D Flip-Flops)
10. 4 Bit Asynchronous Counter(Design a 4 Bit Counter using JK Flip-Flops)
11. Serial In Parallel Out Shift Register(Design a 4 Bit Serial In Parallel Out Shift Register using D Flip-flop)
12. Schmitt Trigger using Op-Amp (Design of Schmitt trigger as Sine to square Wave Converter using 741 at a given Upper and Lower Triggering Points)
13. Band Pass and Band stop filters using IC 741(Design a Band Pass and Band stop filters using IC 741 at given cut off Frequencies and obtain its frequency Response)