

II B.Tech II Sem

15AEC16-ELECTRONIC CIRCUIT ANALYSIS AND DESIGN LAB

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List of Experiments (12 experiments to be done):**Objectives**

- Help students make transition from analysis of electronic circuits to design of electronic circuits.
- To understand the Analysis of transistor at high frequencies.
- To understand the concept of designing of tuned amplifier.
- The student will construct and analyze voltage regulator circuits.
- To understand the circuit configuration and the principle operation of converters, including diode rectifiers, controlled AC-DC converters and DC choppers

Outcomes:

- The ability to analyze and design single and multistage amplifiers at low, mid and high frequencies.
- Designing and analyzing the transistor at high frequencies.
- Determine the efficiencies of power amplifiers.
- Determine Frequency response and design of tuned amplifiers.
- Able to analyze all the circuits using simulation software and Hardware.

I) Design and Simulation in Simulation Laboratory using Any Simulation Software.**(Minimum of 6 Experiments):**

1. Common Emitter Amplifier
2. Common Source Amplifier
3. A Two Stage RC Coupled Amplifier.
4. Current shunt and Voltage Series Feedback Amplifier
5. Cascade Amplifier
6. Wien Bridge Oscillator using Transistors
7. RC Phase Shift Oscillator using Transistors
8. Class A Power Amplifier (Transformer less)
9. Class B Complementary Symmetry Amplifier
10. High Frequency Common base (BJT) / Common gate (JFET) Amplifier.

II) Testing in the Hardware Laboratory (6 Experiments)

Any Three circuits simulated in Simulation laboratory

Any Three of the following

1. Class A Power Amplifier (with transformer load)
2. Class C Power Amplifier
3. Single Tuned Voltage Amplifier
4. Hartley & Colpitt's Oscillators.
5. Darlington Pair.
6. MOSFET Amplifier

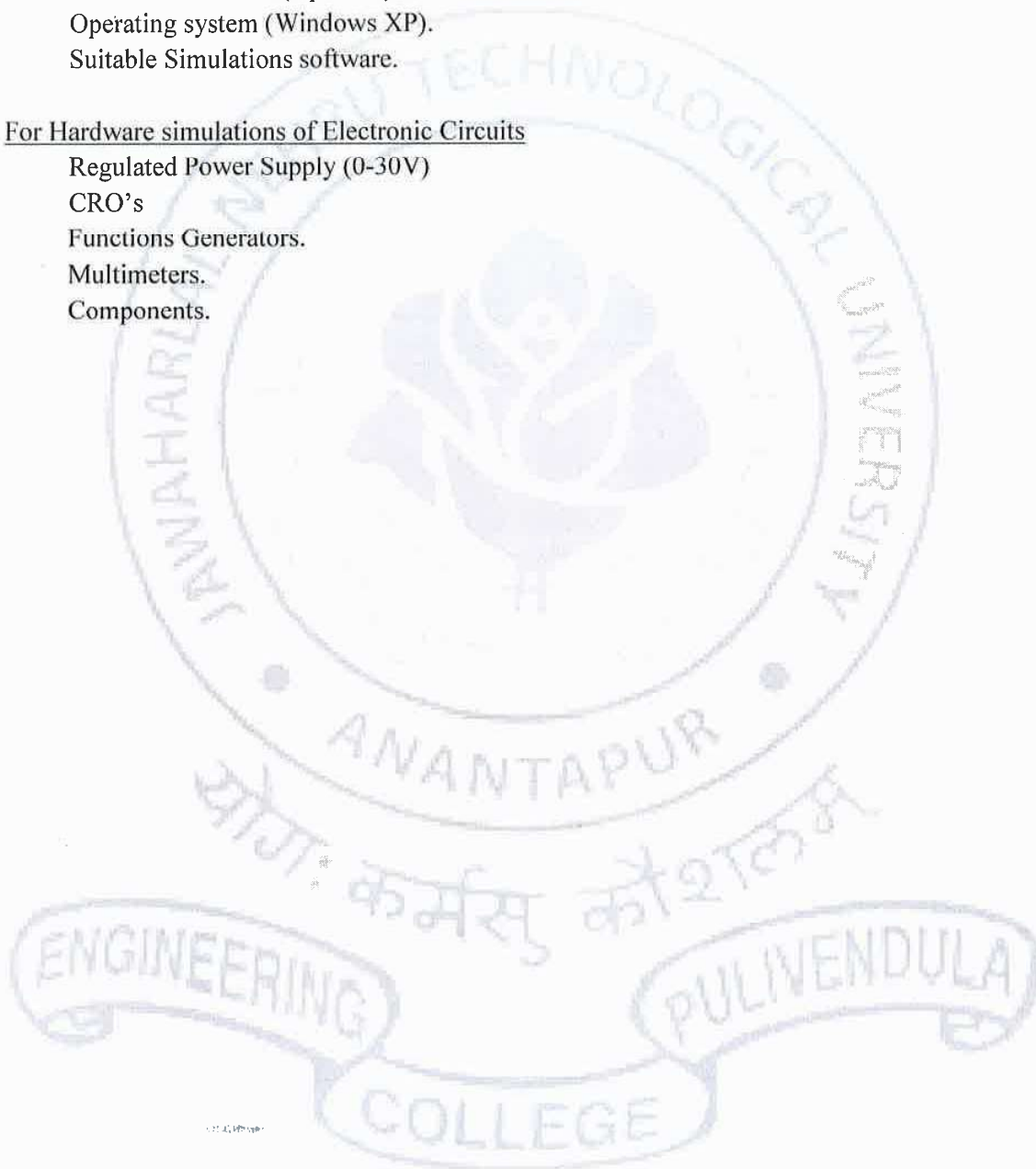
III) Equipment required for Laboratories:

For software simulation of Electronic circuits

- Computer Systems with latest specifications.
- Connected in LAN (Optional).
- Operating system (Windows XP).
- Suitable Simulations software.

For Hardware simulations of Electronic Circuits

- Regulated Power Supply (0-30V)
- CRO's
- Functions Generators.
- Multimeters.
- Components.



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