

SEMESTER V ELECTRONIC CIRCUITS- II

(COMMON FOR ECE & ETCE)

1. FEEDBACK AMPLIFIERS

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Types of feedback, Effect of feedback on noise, distortion, gain, input and output impedance of the amplifiers, Analysis of Voltage and Current feedback amplifiers.

2. OSCILLATORS

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Negative Resistance Oscillator, Barkhausen Criterion for oscillation in feedback oscillator, Mechanism for start of oscillation and stabilization of amplitude, Analysis of RC Oscillators using Cascade connection of Low pass and High pass filters, Wein Phase shift and twin-T network, Analysis of LC Oscillators, Colpitts, Hartley, Clapp, Franklin, Armstrong and Miller Oscillator, Frequency range of RC and LC Oscillator, Frequency range of RC and LC Oscillator, Quartz Crystal Construction Electrical equivalent circuit of Crystal, Crystal Oscillator circuits, use of Logic Gates as linear amplifiers, oscillator and clock generator circuits using logic gate amplifiers.

3. TUNED AMPLIFIERS

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Coil losses, unloaded and loaded Q of tank circuits, Analysis of single tuned amplifier, Double tuned, stagger-tuned amplifiers, instability of tuned amplifiers, stabilization techniques, Narrow band neutralization using coil, Broad banding using Hazeltine neutralization, Class C tuned amplifiers and their applications. Efficiency of Class C tuned Amplifier.

4. MULTIVIBRATOR CIRCUITS

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Collector coupled and Complementary collector coupled astable multivibrators, Emitter coupled astable multivibrator, monostable and bistable multivibrator using similar and complementary transistors, triggering methods, storage delay and calculation of switching times, speed up capacitors, Schmitt trigger circuits.

5. BLOCK OSCILLATORS AND TIME BASE GENERATORS

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Monostable and Astable Blocking Oscillators using Emitter based timing, frequency control using core saturation, push pull operation of astable blocking oscillator i.e., inverters, pulse transformers, RC and RL wave shaping circuits, UJT sawtooth generators, Linearization using constant current circuit, Bootstrap and Miller saw tooth generators, current time base generators.

TOTAL HOURS: 45

TEXT BOOKS:

1. David A. Bell, "Solid State Pulse Circuits ", Prentice Hall of India, 1992.
2. John D. Ryder, "Electronic Fundamental and Applications - Integrated and Discrete system ", Prentice Hall of India, 1999.

REFERENCE BOOKS

1. Millman J. and Taub H., "Pulse Digital and Switching waveform ", McGraw Hill International 1992.