

AMET-7: ELECTRONIC DEVICES & CIRCUIT

1. MULTI STAGE TRANSISTOR AMPLIFIERS

Introduction, Multi-Stage Transistor Amplifier, Gain Decibel, Frequency Response, Band Width, R-C (Resistance-Capacitance) Coupled Transistor Amplifier), Frequency Response, Transformer Coupled Transistor Amplifiers, Direct Coupled Amplifiers, Comparison Of Different Types Of Multi-Stage Amplifiers,

2. TRANSISTOR POWER AMPLIFIERS

Introduction, voltage and power amplifiers, comparison of voltage and power amplifiers, process of power amplification, single-ended transistor power amplifier, performance of power amplifiers, classification of power amplifiers, calculations for maximum collector efficiency of a class-a power amplifier, transistor temperature control by heat sinks, collector dissipation curve and its importance, stages of a practical power amplifier, driver stage, complementary-symmetry push-pull amplifier, harmonic distortion in power amplifiers, distortion in push-pull amplifiers

3. FEEDBACK AMPLIFIERS

Introduction, Feedback, Principle Of Negative Feedback In Amplifiers, Gain Of Amplifier With Negative Feedback, Transistor Amplifier Circuit With Negative Voltage Feedback, Feedback Circuit, Negative Feedback Circuits, Transistor Amplifier Circuits With Negative Current Feedback, Circuit Analysis

4. SINUSOIDAL OSCILLATORS

Introduction, sinusoidal oscillator, types of electrical oscillations, transistor oscillator, different types of transistor oscillators, principle of phase shift oscillators, r.c phase shift oscillator, wein bridge oscillator, piezoelectric effect and crystals, characteristics of crystal, transistor crystal oscillator

5. TUNED AMPLIFIERS (RF AMPLIFIERS)

Introduction, classification of tuned amplifiers, merits and limitations of tuned amplifiers, narrow band tuned amplifier, tunability Single tuned capacitance coupled amplifier, tuned power amplifier, tuned class c amplifiers,

6. SWITCHING AND WAVE – SHAPING

Introduction, switching circuit, switch, electronic switch, comparison between electronic and other switches, analysis of switching action of a transistor, multivibrators and their working principle, types of multivibrators, bistable multivibrator, differentiating circuit, wave-shaping by differentiating circuit, integrating circuit, wave-shaping by integrating circuit, voltage multipliers, voltage doubler, voltage tripler, voltage quadrupler, necessity of voltage multipliers, clamping circuits, wave-shaping by various clipping/clamping circuits

7. SPECIAL POWER SUPPLIES

Introduction, transistorized inverter, constant voltage transformer (cvt), construction of cvt, comparison between cvt and stabilizer, comparison among three types of ups systems, three-

terminal ic voltage regulators

8. OPERATIONAL AMPLIFIERS

Introduction, operational amplifiers, ideal opamps with feedback (virtual ground), properties of practical op-amps, op-amps as voltage amplifiers, the voltage follower, differential amplifier, op-amp differentiator, practical operational amplifiers

