Subject Code : RCCSAP3

CC - IV - ELECTRONIC CIRCUITS AND THEIR APPLICATIONS

UNIT - I: AMPLIFIERS - I

Small signal amplifiers - Graphical analysis and load line concepts - Selection of operating point and biasing – RC coupled amplifier - Feedback amplifier - The feedback concept - Gain with feedback - General characteristics of negative feedback amplifiers - Bias types of feedback and their effect of gain – Multistage feedback amplifiers

UNIT - II: AMPLIFIERS II

Power amplifier - power BJT - Thermal resistance - Maximum power hyperbola - Thermal runaway - Class A, Class B, Class AB and Class C amplifiers - Basic operational amplifier- Differential amplifier

UNIT - III : OSCILLATORS

Basic principles of oscillators - Multivibrators - Function generators - Sinusoidal, Square, Rectangular, Triangular, Ramp and Pulse wave forms generation - Hartley, colpitt and crystal oscillators - Derivation for frequency of oscillations - Applications of sine and square wave oscillators - Multivibrators using transistor / IC operational amplifier – The wave forms at the base and the collector Expression for the periods of oscillations - Miller and Boot Strap time base generators - Blocking oscillators - Schmitt trigger circuits and their use

UNIT - IV : HIGH FREQUENCY DEVICES

Electromagnetic theory - Field vectors - Micro wave generators - Klystron and Magnetron oscillators - Principles of RADAR

UNIT - V: INTEGRATED CIRCUITS

Monolithic integrated circuit technology - The planar processes- Bipolar transistor fabrication - Fabrication of FETs - CMOS technology - Monolithic diodes- The Op-Amp - Op-Amp parameters – Comparator – Inverting, non inverting, summing and subtracting amplifiers – Integrator - Differentiator

BOOKS FOR STUDY AND REFERENCE

1. Microelectronics - Jacob Millman and Grabel – McGraw Hill II edu. – 1987
2. Integrated Electronics – Jacob Millman and Halkias- McGraw Hill – TMH
3. Electronic Circuits, Linear and Digital – Bapat - Tata McGraw Hill, 1991