**17EC2103– ANALYSIS OF ELECTRONIC CIRCUITS**

**UNIT I**

**RECTIFIERS:**Half Wave, Full Wave & Bridge Rectifiers, Analysis of FWR with filters(L,C,LC), Regulators

**UNIT II**

**TRANSISTOR BIASING AND STABILITY:** Operating Point, Bias Stability against variation in ICO, VBE& β stability factor, fixed bias, Collector to Base Bias, Self-Bias, Thermal runaway, Compensation Methods.

**SINGLE STAGE AMPLIFIERS:** BJT Amplifier, h-parameter model, analysis of common emitter, common collector and common base amplifier using exact model, Approximate model, Millers Theorem and its Dual, Design of RC Coupled amplifier using BJT.

**UNIT III**

**FET AMPLIFIERS:** FET Equivalent model, Analysis of Common Source, Common Drain Amplifiers, Design of FET Amplifier.

**UNIT IV**

**MULTISTAGE AMPLIFIERS:** Methods of Coupling, Analysis of Cascade Transistor Amplifier, Analysis of Two Stage RC Coupled Amplifier, High Input Impedance Circuits: Darlington Pair Amplifier, Cascode Amplifier and Bootstrap Emitter Follower, Analysis of Multistage Amplifier using FET.

**UNIT V**

**HIGH FREQUENCY ANALYSIS:** Transistor at High Frequency, Hybrid π CE Model, Determination of High Frequency Parameters and CE Short circuit Current Gain, Current Gain with Resistive Loads, Cutoff Frequencies, Frequency Response, parameters fT and fβ. Analysis of CS & CD amplifier at High Frequency.

**UNIT VI**

**FEEDBACK AMPLIFIER:** Feedback Concept, Types of Feedback, Feedback Topology, Characteristics, Analysis of Feedback Amplifiers, Performance Comparison.

**OSCILLATORS:** Oscillators Principles, Barkhausan Criteria, RC Phase shift and Wien Bridge Oscillator, Hartley and Colpitts Oscillators, Crystal Oscillator.

**TEXT BOOKS:**

 1. Mottershed, “Electronic devices and circuits”, PHI.

 2. Millman and Halkias, “Integrated Electronics”, McGraw- Hill Co.

**REFERENCES:**

1. Boylestad, Louis Nashelsky “Electronic devices and circuits” 9ed.., 2008PE.
2. David.A.Bell. “Electronic Devices and circuits”, PHI.