GVP COLLEGE OF ENGINEERING FOR WOMEN: VISAKHAPATNAM

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

**LESSON PLAN**

NAME OF FACULTY : Mr . N V MAHESWARA RAO YEAR/BRANCH/SEM: II YEAR / ECE/ II

NAME OF SUBJECT : ELECTRONIC CIRCUIT ANALYSIS ACADEMIC YEAR : 2017– 2018.

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| UNIT | NAME OF THE TOPIC | PERIODS REQUIRED |
|  | **High Frequency Transistor and FET Circuits** | **10** |
| **UNIT- I** | Transistor at High Frequencies: Hybrid- π Common Emitter transistor model | 1 |
| Hybrid π conductance’s, Hybrid π capacitances | 2 |
| Validity of hybrid π model, Determination of high-frequency parameters in terms of low- frequency parameters | 1 |
| CE short circuit Current gain | 1 |
| CE short circuit Current gain with resistive load | 1 |
| Cut-off frequencies, Frequency response and Gain Bandwidth product | 1 |
| **FET:** Common Source amplifier at Higher Frequencies | 1 |
| Common Drain Amplifier at High frequencies | 1 |
| Problems | 1 |
|  | **Multistage Amplifier** | **11** |
| UNIT- II | Classification of Amplifiers, Methods of coupling | 1 |
| Cascaded Transistor Amplifier and its analysis | 1 |
| Analysis of Two Stage RC Coupled amplifier | 1 |
| High input Resistance Transistor Circuits and their analysis – Darlington pair Amplifier | 2 |
| Cascode amplifier | 1 |
| Boot-Strap emitter follower | 1 |
| Analysis of Multi stage amplifiers using FET | 1 |
| Differential amplifier using BJT | 2 |
|  | Problems | 1 |
| UNIT | **Feedback Amplifiers** | 10 |
| UNIT- III | Feedback principle and concept | 1 |
| Types of feedback, Classification of Amplifiers, feedback topologies | 1 |
| Characteristics of negative feedback amplifiers | 1 |
| Generalized Analysis of feedback amplifiers | 2 |
| Performance comparison of feedback amplifiers | 1 |
| Method of Analysis of Feedback Amplifiers | 3 |
| Problems | 1 |
|  | **Oscillators** | **11** |
| UNIT-IV | Oscillator principle,Condition for oscillations, Types of oscillators | 1 |
| RC-phase shift oscillator with BJT and their analysis | 1 |
| Wein bridge oscillator with BJT and their analysis | 1 |
| RC-phase shift and Wein bridge oscillator with FET and their analysis | 2 |
| Generalized analysis of LC oscillators | 1 |
| Hartley oscillator with BJT and FET and their analysis | 1 |
| Colpitts oscillator with BJT and FET and their analysis | 1 |
| Crystal oscillator | 1 |
| Frequency and amplitude stability of oscillators | 1 |
| Problems | 1 |
|  | **Power Amplifiers** | **12** |
| UNIT- V | Classification of Amplifiers | 1 |
| Class A power Amplifiers and their analysis | 2 |
| Harmonic Distortions | 2 |
| Class B push pull amplifiers and their analysis | 1 |
| Complementary Symmetry push pull amplifier | 1 |
| Class AB power amplifier and Class C power amplifier | 2 |
| Thermal stability and Heat sink | 1 |
| Advanced power amplifiers, Distortion in amplifiers | 1 |
| Problems | 1 |
|  | **Tuned Amplifiers** | **9** |
| UNIT- VI | Introduction and Q-Factor | 1 |
| Small Signal Tuned Amplifier – Capacitance coupled single tuned amplifier | 1 |
| Double Tuned Amplifiers | 2 |
| Effect of Cascading Single tuned amplifiers on Band width | 1 |
| Effect of Cascading Double tuned amplifiers on Band width | 1 |
| Staggered tuned amplifiers | 1 |
| Stability of tuned amplifiers | 1 |
| Wideband amplifiers | 1 |
| **Total classes required** | | **63** |