**Govt. Polytechnic, Nilokheri Haryana**

**Electrical Engineering Department**

**Lesson plan**

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| **Name of Faculty** | **Sh. RAHUL SINGLA** |
| **Discipline** | **Electrical Engineering** |
| **Semester** | **3rd** |
| **Subject** | **Electronics-II** |
| **Lesson Plan Duration** | **From September 2020 to December 2020** |
| **Work load (Theory + Practical) Per Week** | **[03 + 02 ]** |

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| **Week** | **Day** | **Theory Topic/ Assignment/ Test** | **No.** | **Practical** |
| **1st** | **1** | **Unit:1 Transistor Audio Power Amplifier** | **1** | **To study the effect of coupling capacitor on lower cut off frequency and upper cut off frequency by plotting frequency response curve of a two stage RC coupled amplifier** |
| **2** | **Difference between voltage and power amplifier** |
| **3** | **Terms in Power Amplifier, collector efficiency, distortion and dissipation capability** |
| **2nd** | **1** | **Classification of power amplifier class A, B and C** | **2** |
| **2** | **Class A single-ended power amplifier, its working and collector efficiency Impedance matching in a power amplifier using transformer** |
| **To measure (a) optimum load (b) output power (c) signal handling capacity of a push-pull amplifier** |
| **3** | **Heat sinks in power amplifiers, Push-pull amplifier: circuit details working and advantages** |
| **3rd** | **1** | **Principles of the working of complementary symmetry push-pull amplifier** | **3** | **To measure (a) voltage gain (b) input and output impedance for an emitter follower circuit** |
| **2** | **Revision/Assignment of 1st unit** |
| **3** | **Class test of 1st unit** |
| **4th** | **1** | **Unit-2 Introduction to tuned voltage amplifier** | **4** | **Practical Quiz No.2/ Revision and file checking** |
| **2** | **Series and parallel resonance, Single and double tuned voltage amplifiers** |
| **3** | **Frequency response of tuned voltage amplifiers,Applications of tuned voltage amplifiers** |
| **5th** | **1** | **Revision/Assignment of 2nd unit** | **5** | **To measure frequency generation in (a) Hartley (b) R-C Phase Shift oscillator** |
| **2** | **Class test of 2nd unit** |
| **3** | **Unit3: Feedback in Amplifiers positive and negative feedback and their need** |
| **6th** | **1** | **Voltage gain of an amplifier with negative feedback A = A/1+βA** | **6** | **Practical Quiz No.3/ Revision and file checking** |
| **2** | **Effect of negative feedback on voltage gain, stability, distortion, band width** |
| **3** | **Output and input impedance of an amplifier** |
| **7th** | **1** | **Typical feedback circuits** | **7** | **To observe the differentiated and integrated square wave on a CRO for different values of R-C time constant** |
| **2** | **Effect of removing the emitter by-pass capacitor on a CE transistor amplifier** |
| **3** | **Emitter follower and its applications** |
| **8th** | **1** | **Revision/Assignment of 3rd unit** | **8** | **Clipping of both portion of sine-wave using: diode and dc source/**  **Zener diodes** |
| **2** | **Unit4: Sinusoidal oscillators amplifier positive feedback** |
| **3** | **Difference between an oscillator and an alternator** |
| **9th** | **1** | **Essentials of an oscillator, Circuit details and working of LC oscillators** | **9** | **Clamping a sine-wave to: Negative dc voltage Positive dc voltage** |
| **2** | **Tuned Collector, Hartley** |
| **3** | **and Colpitt’s oscillators, R-C oscillator circuits** |
| **10th** | **1** | **phase shift and Wein bridge oscillator circuits** | **10** | **Practical Quiz No.3/ Revision and file checking** |
| **2** | **Introduction to piezoelectric crystal and crystal oscillator circuit** |
| **3** | **Revision/Assignment of 4th unit** |
| **11th** | **1** | **Wave-Shaping and Switching Circuits** | **11** | **To generate square-wave using an astable multivibrator and to observe the wave form on a CRO** |
| **2** | **Concept of Wave-shaping circuits** |
| **3** | **R-C differentiating and integrating circuits** |
| **12th** | **1** | **Diode clipping circuits, Diode clamping circuits** | **12** | **To observe triggering and working of a bistable multivibrator circuit and observe its output wave form on a CRO** |
| **2** | **Applications of wave-shaping circuits, Transistor as a switch** |
| **3** | **Collector coupled astable, monostable, Bistable multivibrator circuits** |
| **13th** | **1** | **Working and applications of transistor inverter circuit using power transistors** | **13** | **Practical Quiz No.3/ Revision and file checking** |
| **2** | **Revision/Assignment of 5th unit** |
| **3** | **Unit6: Working Principles of different types of power supplies viz. CVTs** |
| **14** | **1** | **IC voltage regulators(78xx,79xx)** | **14** | **Op-Amp (IC 741) as inverting and non-inverting amplifier, adder**  **Comparator, integrator and differ -entiator verify using p-spice** |
| **2** | **Revision/Assignment of 6th unit** |
| **3** | **Unit7: Operational Amplifier, differential amplifier** |
| **15th** | **1** | **Emitter coupled differential amplifier Offset even voltages and currents** | **15** | **To study the pin configuration and working of IC 555 and its use as mono stable and astable multi -vibrator** |
| **2** | **Integrator and differentiator, Summer, Subtractor** |
| **3** | **Familiarization with specifications and pin configuration of IC 741. Block diagram and operation of 555 IC timer** |
|  | **1** | **HSBTE old paper solution & Revision** |  | **Internal Practical/viva-voice evaluation** |
| **2** | **HSBTE old paper solution & Revision** |
| **3** | **HSBTE old paper solution & Revision** |