Lesson Plan

Name of Faculty Deepak Garg

Discipline ECE

Semester 3rd

Subject EDC

Lesson Plan Duration 15 weeks (Sept. 2020 to Dec. 2020)

Work Load (Lecture/Practical) per week ( in hours) Lectures 05 Practicals 01

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| --- | --- | --- | --- |
| Week | Day | Topic | Practical( Discussion) |
| 1 | 1 | Need for multistage amplifier | Plot the frequency response of of two stage RC coupled amplifier and calculate the bandwidth and compare it with single Stage amplifier |
| 2 | Gain of multistage amplifier |
| 3 | Different types of multistage amplifier like RC coupled |
| 4 | transformer coupled, and their frequency response and bandwidth |
| 5 | direct coupled and their frequency response and bandwidth |
| 2 | 1 | Revision | To measure the gain of  push-pull amplifier at 1KHz |
| 2 | Difference between voltage and power amplifiers |
| 3 | Class A, Class B, |
| 4 | Class AB , Class C amplifiers |
| 5 | collector efficiency and Distortion in class A,B,C |
| 3 | 1 | Revision | To measure the voltage gain of emitter follower circuit and plot its frequency response |
| 2 | Single ended power amplifiers |
| 3 | Graphical method of calculation (without derivation) of out put power; |
| 4 | heat dissipation curve |
| 5 | importance of heat sinks |
| 4 | 1 | Revision | Viva voce |
| 2 | Push-pull amplifier |
| 3 | Complementary symmetry push-pull amplifier |
| 4 | Basic principles |
| 5 | types of feedback |
| 5 | 1 | Revision | Plot the frequency response curve of Hartley and Colpitt’s Oscillator |
| 2 | Derivation of expression for gain of an amplifier employing feedback |
| 3 | Effect of negative feedback |
| 4 | Effect of feedback (negative) on gain, stability |
| 5 | Effect of feedback (negative) on distortion and bandwidth |
| 6 | 1 | Test |  |
| 2 | Test |
| 3 | Test |
| 4 | Test |
| 5 | Test |
| 7 | 1 | Use of positive feedback | Plot the frequency response curve of phase shift and Wein bridge Oscillator |
| 2 | Barkhausen criterion for oscillations |
| 3 | Different oscillator circuits-tuned collector, Hartley |
| 4 | Colpitts, phase shift, |
| 5 | Wien’s bridge oscillator |
| 8 | 1 | Revision | Use of IC 555 as monostable multivibrator and observe the output for different values of |
| 2 | crystal oscillator and their working principles |
| 3 | Series and parallel resonant circuits |
| 4 | bandwidth of resonant circuits |
| 5 | Single and double tuned voltage amplifiers |
| 9 | 1 | Revision | Use of IC 555 as astable multivibrator and observe the output at different duty cycles |
| 2 | frequency response characteristics |
| 3 | Working principle of transistor as switch |
| 4 | Concept of multi-vibrator: |
| 5 | astable, monostable, bistable and their applications |
| 10 | 1 | Test |  |
| 2 | Test |
| 3 | Test |
| 4 | Test |
| 5 | Test |
| 11 | 1 | Test Discussion | Viva Voce |
| 2 | Block diagram of IC555 and its working |
| 3 | IC555 applications |
| 4 | IC555 as monostable and |
| 5 | astable multi-vibrator |
| 12 | 1 | Revision | To realize positive and negative fixed voltage DC power supply using 3 terminal voltage regulator IC 7805, 7812, 7905 |
| 2 | bistable multivibrator |
| 3 | Characteristics of an ideal operational amplifier and its block diagram |
| 4 | IC-741 and its pin configuration |
| 5 | Definition of differential voltage gain, |
| 13 | 1 | CMRR, PSRR | To use IC 741 as inverter, adder, subtractor, integrator |
| 2 | slew rate and input offset current |
| 3 | Operational amplifier as an inverter, scale changer |
| 4 | adder, subtractor |
| 5 | differentiator, and integrator |
| 14 | 1 | Concept of DC power supply | Class Project  Fabricate any simple operational amplifier circuit (inverter, adder, subtractor) and test it. |
| 2 | Line and load regulation |
| 3 | Concept of fixed voltage |
| 4 | regulators (like 7805, 7905) |
| 5 | voltage regulator like (IC 723) |
| 15 | 1 | Test |  |
| 2 | Test |
| 3 | Test |
| 4 | Test |
| 5 | Test |