LESSON PLAN OF ELECTRONICS CIRCUITS & DEVICES

NAME OF THE FACULTY : - MEENAKSHI
DISCIPLINE : - ECE
SEMESTER : - THIRD
SUBJECT : - EDC
LESSON PLAN DURATION : - 15 weeks (from JULY 2019 to NOVEMBER 2019)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-**03**, PRACTICAL-**02**

WEEK	TOPIC		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment/test)	PRACTICAL DAY	TOPIC
1st	1st	**Multistage Amplifiers** Need for multistage amplifier	1st Group-1	**1.** Plot the frequency response of two stage RC coupled amplifier and calculate the bandwidth and compare it with single stage amplifier
	2nd	Gain of multistage amplifier		
	3rd	Different types of multistage amplifier like RC coupled and its frequency response and bandwidth	2nd Group-2	**1.** Plot the frequency response of two stage RC coupled amplifier and calculate the bandwidth and compare it with single stage amplifier
2nd	4th	Different types of multistage amplifier like transformer coupled and its frequency response and bandwidth	3rd Group-1	**2.** To measure the gain of push-pull amplifier at 1KHz
	5th	Different types of multistage amplifier like direct coupled and its frequency response and bandwidth		
	6th	• Class Test • assignment	4th Group-2	2. To measure the gain of push-pull amplifier at 1KHz
3rd	7th	**Large Signal Amplifier** Difference between voltage and power Amplifiers	5th Group-1	**3.** To measure the voltage gain of emitter follower circuit and plot its frequency response
	8th	Importance of impedance matching in amplifiers		
	9th	Class A, Class B amplifiers, collector efficiency and Distortion in class A,B	6thGroup-2	**3.** To measure the voltage gain of emitter follower circuit and plot its frequency response
4th	10th	Class AB, and Class C amplifiers, collector efficiency and Distortion in class C	7th Group-1	**Revision**
	11th	Single ended power amplifiers, Graphical method of calculation (without derivation) of output power; heat dissipation curve and importance of heat sinks.		
	12th	Push-pull amplifier, and complementary symmetry push-pull amplifier	8th Group-2	**Revision**

5th	13th	• **Class Test** • **assignment**	9th Group-1	**4.** Plot the frequency response curve of Hartley and Colpitts Oscillator
	14th	**Feedback in Amplifiers** Basic principles and types of feedback		
	15th	Derivation of expression for gain of an amplifier employing feedback	**10th Group-2**	4. Plot the frequency response curve of Hartley and Colpitts Oscillator
6th	16th	Effect of feedback (negative) on gain, stability, of an amplifier	11th Group-1	**5.** Plot the frequency response curve of phase shift and Wein bridge Oscillator
	17th	Effect of feedback (negative) on distortion and bandwidth of an amplifier		
	18th	RC coupled amplifier with emitter bypass capacitor	12th Group-2	**5.** Plot the frequency response curve of phase shift and Wein bridge Oscillator
7th	19th	Emitter follower amplifier and its application	13th Group-1	**6.** Use of IC 555 as monostable multivibrator and observe the output for different values of RC
	20th	• **Class Test** • **assignment**		
	21th	**Sinusoidal Oscillators** Use of positive feedback	14th Group-1	**6.** Use of IC 555 as monostable multivibrator and observe the output for different values of RC
8th	22th	Barkhausen criterion for oscillations	15th Group-1	**Revision**
	23th	Different oscillator circuits-tuned collector, Hartley and Colpitts. Their working principles (no mathematical derivation but only simple numerical problems)		
	24th	Different oscillator circuits-phase shift, Wien's bridge and crystal oscillator. Their working principles (no mathematical derivation but only simple numerical problems)	16th Group-2	**Revision**
9th	25th	• **Class Test** • **assignment**	17th Group-1	**7.** Use of IC 555 as astable multivibrator and observe the output at different duty cycles
	26th	**Tuned Voltage Amplifiers** Series and parallel resonant circuits and bandwidth of resonant circuits.		
	27th	**Multivibrator Circuits** Working principle of transistor as switch	18th Group-2	**7.** Use of IC 555 as astable multivibrator and observe the output at different duty cycles

10th	28th	Concept of multi-vibrator: astable, and its applications	19th Group-1	**8.** To use IC 741 (op-amplifier) as Inverter, Adder, Subtraction, Integrator,
	29th	Concept of multi-vibrator: monostable and its applications		
	30th	Concept of multi-vibrator: bistable and its applications	20th Group-2	**8.** To use IC 741 (op-amplifier) as Inverter, Adder, Subtractor, Integrator,
11th	31th	Block diagram of IC555 and its working and applications	21th Group-1	**Revision**
	32th	IC555 as monostable multi-vibrator		
	33th	IC555 as astable multi-vibrator	22th Group-2	**Revision**
12th	34th	IC555 as bistable multi-vibrator	23th Group-1	**Revision**
	35th	• **Class Test** • **assignment**		
	36th	**Operational Amplifiers** Characteristics of an ideal operational amplifier and its block diagram	24th Group-2	**Revision**
13th	37th	IC-741 and its pin configuration	25th Group-1	**Test**
	38th	Definition of differential voltage gain, CMRR, PSRR, slew rate and input offset current		
	39th	Operational amplifier as an inverter, scale changer and adder	26th Group-2	**Test**
14th	40th	Operational amplifier as a subtractor, differentiator and integrator	27th Group-1	**Revision**
	41th	• **Class Test** • **assignment**		
	42th	**Regulated DC Power Supplies** Concept of DC power supply	28th Group-2	**Revision**
15th	43th	Line and load regulation	29th Group-1	**Test**
	44th	Concept of fixed voltage, IC regulators (like 7805, 7905), and variable voltage regulator like (IC 723)		
	45th	• **assignment** • **Class Test**	30th Group-2	**Test**