

NAME OF THE FACULTY : MEENAKSHI

DISCIPLINE : ECE

SEMESTER : 3rd

SUBJECT : ELCCTRONIC DEVICES AND CIRCUITS

LESSON PLAN DURATION : 15 weeks

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

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

5 th	13	<ul style="list-style-type: none"> • Class Test • assignment 	Group-1	1	Plot the frequency response curve of Hartley and Colpitts Oscillator	
	14	Feedback in Amplifiers Basic principles and types of feedback		2		
				3		
	15	Derivation of expression for gain of an amplifier employing feedback	Group-2	1		Plot the frequency response curve of Hartley and Colpitts Oscillator
				2		
				3		
6 th	16	Effect of feedback (negative) on gain, stability, of an amplifier	Group-1	1	Plot the frequency response curve of phase shift and Wein bridge Oscillator	
				2		
				3		
	17	Effect of feedback (negative) on distortion and bandwidth of an amplifier	Group-2	1		Plot the frequency response curve of phase shift and Wein bridge Oscillator
				2		
				3		
7 th	19	Emitter follower amplifier and its application	Group-1	1	Use of IC 555 as monostable multi vibrator and observe the output for different values of RC	
				2		
				3		
	20	<ul style="list-style-type: none"> • Class Test • assignment 	Group-2	1		Use of IC 555 as monostable multi vibrator and observe the output for different values of RC
				2		
				3		
21	Sinusoidal Oscillators Use of positive feedback	Group-1	1			
			2			
			3			
22	Barkhausen criterion for oscillations	Group-1	1	Revision Experiment Performed		
			2			
			3			
	23	Different oscillator circuits-tuned collector, Hartley and Colpitts. Their working principles (no mathematical derivation but only simple numerical problems)	Group-2		1	Revision Experiment Performed
					2	
					3	
24	Different oscillator circuits-phase shift, Wien's bridge and crystal oscillator. Their working principles (no mathematical derivation but only simple numerical problems)	Group-2	1			
			2			
			3			
9 th	25	<ul style="list-style-type: none"> • Class Test • assignment 	Group-1	1	Use of IC 555 as astable multi vibrator and observe the output at different duty cycles	
				2		
				3		
	26	Tuned Voltage Amplifiers Series and parallel resonant circuits and bandwidth of resonant circuits	Group-2	1		Use of IC 555 as astable multi vibrator and observe the output at different duty cycles
				2		
				3		
27	Multi vibrator Circuits Working principle of transistor as switch	Group-2	1			
			2			
			3			
10 th	28	Concept of multi-vibrator: astable, and its applications	Group-1	1	Touse IC741 (op-amplifier) as Inverter, Adder, Subtraction, Integrator	
				2		
				3		
	29	Concept of multi-vibrator: monostable and its applications	Group-2	1		Touse IC741 (op-amplifier) as Inverter, Adder, Subtraction, Integrator
				2		
				3		
30	Concept of multi-vibrator: bistable and its applications	Group-2	1			
			2			
			3			

11 th	31	Block diagram of IC555 and its working and applications	Group-1	1	Revision Experiment Performed
	32	IC555 as monostable multi-vibrator		2	
				3	
	33	IC555 as astable multi-vibrator	Group-2	1	Revision Experiment Performed
				2	
				3	
12 th	34	IC555 as bistable multi-vibrator	Group-1	1	Revision Experiment Performed
	35	<ul style="list-style-type: none"> • Class Test • Assignment 		2	
				3	
	36	Operational Amplifiers Characteristics of an ideal operational amplifier and its block diagram	Group-2	1	Revision Experiment Performed
				2	
				3	
13 th	37	IC-741 and its pin configuration	Group-1	1	Revision Experiment Performed
	38	Definition of differential voltage gain, CMRR, PSRR, slew rate and input offset current		2	
				3	
	39	Operational amplifier as an inverter, scale changer and adder	Group-2	1	Revision Experiment Performed
				2	
				3	
14 th	40	Operational amplifier as a subtractor, differentiator and integrator	Group-1	1	Revision Experiment Performed
	41	<ul style="list-style-type: none"> • Class Test • Assignment 		2	
				3	
	42	Regulated DC Power Supplies Concept of DC power supply	Group-2	1	Revision Experiment Performed
				2	
				3	
15 th	43	Line and load regulation	Group-1	1	Test
	44	Concept of fixed voltage, IC regulators (like 7805, 7905), and variable voltage regulator like (IC 723)		2	
				3	
	45	<ul style="list-style-type: none"> • Class Test • Assignment 	Group-2	1	Test
				2	
				3	