Lesson Plan(Analog Electronics- 2nd Semester Computer Engg. Department)

Name of Faculty : Monika
Semester : 2nd
Subject : Analog Electronics
Lesson Plan : 15 Weeks

Week	Theory		Pratical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1	1st Day	Semiconductors and Diodes: Electrons- free and valence. Conductors, Insulators, and Semiconductors- definition & energy band diagrams. Properties of semiconductors.	1st	Familiarity with working knowledge of the following Instruments. (a) CRO (b) Multimeter (c) Function generator (d) Regulated power supply (e) Active passive components (f) Bread Board
	2nd Day	Meaning of Hole current, electron-hole pairs, recombination, doping, acceptor and donor impurities. Intrinsic and Extrinsic, N and P type semiconductors.		Familiarity with working knowledge of the following Instruments. (a) CRO (b) Multimeter (c) Function generator (d) Regulated power supply (e) Active passive components (f) Bread Board
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2	3rd Day	Diode- formation, depletion region, VI Characteristics, ratings, types and applications.	2nd	Study of V-I Characteristics of a Diode.
	4th Day	Zener diode- reverse bias characteristics, voltage regulation, shunt voltage regulator, and applications.		Study of V-I Characteristics of a Diode.
				Study of V-I Characteristics of a Diode.
3	5th Day	Varistor and Thermistor working and applications.	3rd	1.Study and draw the characteristics of half wave and full wave rectifiers. 2.Study and draw the characteristics of rectifier filter circuit.
	6th Day	**Revision of Unit-1 & Assignment-1**		1.Study and draw the characteristics of half wave and full wave rectifiers. 2.Study and draw the characteristics of rectifier filter circuit.
				1.Study and draw the characteristics of half wave and full wave rectifiers. 2.Study and draw the characteristics of rectifier filter circuit.
4	7th Day	**Sessional Exam-1st(Tentative)**	4th	Study of Clipping & Clamping circuit.
	8th Day	Transistors and MOSFETs: Transistors- definition, terminals, types, symbols, formation of NPN and PNP, ratings		Study of Clipping & Clamping circuit.
				Study of Clipping & Clamping circuit.
5	9th Day	Transistor biasing- definition, importance, list types, stabilisation, thermal runaway, heat sink, and voltage divider method.	5th	1. Study zener diode characteristics. 2.Study zener diode as voltage regulator.
	10th Day	List configurations and applications. Alpha and Beta- definitions, relation. CE input and output characteristics- cut off, saturation, and active regions. Transistor as a switch. List applications.		1. Study zener diode characteristics. 2.Study zener diode as voltage regulator.
				1. Study zener diode characteristics. 2.Study zener diode as voltage regulator.
6	11th Day	FET- definition, types. MOSFET- definition, types, symbols. N type enhancement mode- construction, working, characteristics, switch.	6th	Study the characteristics of transistor in Common Base configuration.
	12th Day	List applications and ratings. Differentiate BJT and MOSFET.		Study the characteristics of transistor in Common Base configuration.
				Study the characteristics of transistor in Common Base configuration.
7	13th Day	Rectifiers, filters and regulators: Regulated power supply- block diagram and applications.	7th	Plot and study the input and output characteristics of BJT in common emitter configuration.
	14th Day	Rectifiers- definition, half wave, centre tapped and bridge full wave rectifier, efficiency, ripple factor, PIV, ratings.		Plot and study the input and output characteristics of BJT in common emitter configuration.
				Plot and study the input and output characteristics of BJT in common emitter configuration.
8	15th Day	Filters- definition, necessity, C and PI filters, Regulator-definition, working of 7805, operating voltages- 7809, 7812, 7905, 7912.	8th	Graphical determination of small signal hybrid parameter of BJT.
	16th Day	**Revision of Unit-2 & 3 & Assignment-2**		Graphical determination of small signal hybrid parameter of BJT.
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Govt. Polytechnic college,shergarh

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9	17th Day	**Sessional Exam-2nd(Tentative)**	9th	Study and draw the characteristics of FET in common source configuration
	18th Day	Amplifiers and Oscillators: Amplifier- definition, faithful amplification, classification based on configuration, power, and frequency.		Study and draw the characteristics of FET in common source configuration
				Study and draw the characteristics of FET in common source configuration
10	19th Day	Transistor CE amplifier with biasing. Working of class A, B, C and Push pull amplifier.	10th	Study characteristics of SCR.
	20th Day	**Two stage RC coupled amplifier working, gain in dB, frequency**		Study characteristics of SCR.
				Study characteristics of SCR.
11	21st Day	Feed back- definition, types, advantages and disadvantages, applications.	11th	Study of characteristics of DIAC.
	22nd Day	Oscillators- definition, classification, LC tank circuit, criteria.		Study of characteristics of DIAC.
				Study of characteristics of DIAC.
12	23rd Day	RC phase shift and crystal oscillator- working, applications. CRT- construction, working and applications.	12th	Plot V-I characteristic of TRIAC.
	24th Day	OP-AMP and Timers: OPAMP– definition, block diagram, operation, characteristics, applications, μA 741 pin diagram.		Plot V-I characteristic of TRIAC.
				Plot V-I characteristic of TRIAC.
13	25th Day	Definitions of virtual ground, CMRR and Slew rate.	13th	Study and draw the characteristics of FET in common drain configuration.
	26th Day	OPAMP applications– inverting, integrator, differentiator, summer, voltage follower, and comparator.		Study and draw the characteristics of FET in common drain configuration.
				Study and draw the characteristics of FET in common drain configuration.
14	27th Day	Filters- definition, Working- low pass, high pass passive and active filters, applications.	14th	Study the Series and Shunt Voltage Regulator.
	28th Day	Timers–block diagram, pin diagram of 555, duty cycle, time constant, applications. Multi-vibrators- Astable and monostable using 555.		Study the Series and Shunt Voltage Regulator.
				Study the Series and Shunt Voltage Regulator.
15	29th Day	**Revision of Unit-4 & 5 & Assignment-3**	15th	Study of frequency response of active filters HP, LP & BP.
	30th Day	**Sessional Exam-3rd (Tentative)**		Study of frequency response of active filters HP, LP & BP.
				Study of frequency response of active filters HP, LP & BP.