

LESSON PLAN

ODD SEM (2021-2022)

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Department- Electronics & IT

Lesson Plan- 16 Weeks (11.10.2021- 25.01.2022)

Week	Date	B.Sc. (Hons.)-IT Sem- 1st Paper: BSIT-103 Subject: Fundamentals of EM wave Days: M-T-W(3 Days)	B.Sc. (Hons.)-IT Sem- 1st Paper: BSIT-104 Subject: Electronics Devices and Circuits Days: M-T-W (3 Days)	B.Sc. II H) -IT Sem-3rd Paper-BSIT-302 Subject: Transistor and Linear Integrated Circuits Days: T-F-S (3 Days)	B.Sc.-I Sem-1st Paper-I Subject: Electronics Devices and Circuits-I Days: T-F-S (3 Days)	B.Sc. -II (Hons.) Sem-3rd Paper: I Subject: Op-amp and Linear Integrated Circuits Days: T-F-S (3 Days)	
1	11.10.2021	Introduction to subject and university scheme	Introduction to subject and university scheme				
	12.10.2021	Review of Vector background and electric field	Introduction to semiconductor, Intrinsic and Extrinsic semiconductors				
	13.10.2021	Mathematical expression and significance of Gauss's Divergence Theorem	Energy Band diagram, P type and N type Semiconductor				
	14.10.2021			Introduction to subject and university scheme	Introduction to subject and university scheme	Introduction to subject and university scheme	
	15.10.2021	Dussehra					
	16.10.2021			Transistor hybrid model	Introduction to materials, energy band diagrams	Basics of Integrated Circuit	

						Technology an Types of ICS
	17.10.2021	SUNDAY				
2	18.10.2021	Mathematical expression and significance of Stokes Theorem	PN junction diode and its characteristics			
	19.10.2021	Questions related to both the theorems	Space charge capacitors and diffusion capacitors			
	20.10.2021	Maharishi Valmiki Jayanti				
	21.10.2021			h parameters with numerical	Intrinsic and Extrinsic Semiconductors	Monolithic fabrication technique
	22.10.2021			Analysis of transistor amplifier circuit using h-parameters	Energy band diagrams, drift and diffusion currents	Basics of Operational Amplifier, Op-Amp pin diagram
	23.10.2021			Emitter follower	Junction Diode and its Characteristics	Double ended differential amplifier
	24.10.2021	SUNDAY				
3	25.10.2021	Electric Flux	Zener Diode			
	26.10.2021	Gauss's law with numerical	Zener Diode as voltage regulator			
	27.10.2021	Concept of displacement current	Assignment-1			
	28.10.2021			Comparison of transistor configurations	Space charge capacitance and diffusion capacitance	Differential Gain, Common Mode Gain
	29.10.2021			Simplified common emitter hybrid model	Zener Diode and its Characteristics	CMRR, Slew rate, and other parameters

	30.10.2021			Revision	Voltage regulation using Zener diode	Ideal opamp, and its transfer characteristics
	31.10.2021	SUNDAY				
4	1.11.2021	Haryana Day				
	2.11.2021	Scalar and vector potential	Class Tets-1			
	3.11.2021	Assignment-1	Introduction to Rectifiers and its need			
	4.11.2021	Diwali				
	5.11.2021	Vishwakarma Day				
	6.11.2021			Assignment-1	Schottky diode	Feedback concept in amplifier
	7.11.2021	SUNDAY				
5	8.11.2021	Introduction to Electromagnetism, Maxwell's equation in Differential and Integral forms	HWR with different parameters			
	9.11.2021	Plane wave equations in Free space	Bridge FWR, with Parameters.			
	10.11.2021	Plane wave equations in Conducting media	Comparison and application of rectifiers			
	11.11.2021			Basics of Integrated Circuit Technology	Clipper circuits: Series and Shunt , Biased clippers Assignment-1	Inverting and non inverting configuration open and closed loop both
	12.11.2021			Monolithic fabrication technique	Clamping circuit: Positive and Negative Clampers	Assignment-1

	13.11.2021			Brief introduction to Different Fabrication Processes	Half Wave Rectifiers: Basic Concept , working	Summing and Difference Amplifier
	14.11.2021	SUNDAY				
6	15.11.2021	Plane wave equations in Non conducting media	Filters, L & C Filters			
	16.11.2021	Transverse nature of electromagnetic waves	Voltage Multiplier Circuits			
	17.11.2021	Skin effect	Shunt clipping circuits,			
	18.11.2021			Crystal growth	Calculation of various parameters of Half Wave Rectifier	Error Sources in op amp: off set voltage, bias current
	19.11.2021	Guru Nanak Dev Jayant				
	20.11.2021			Epitaxial growth	Full Wave Rectifiers: Basic Concept , working	Input bias current, summing amplifier as average amplifier and Divider
	21.11.2021	SUNDAY				
7	22.11.2021	Poynting vector	Series clipping circuits			
	23.11.2021	Poynting Theorem	Clamping circuits			
	24.11.2021	Class Test-1	Revision			
	25.11.2021			Oxidation	Calculation of various parameters of Full Wave Rectifier	Multiplier and Divisor using op amp
	26.11.2021			Masking and Etching	Bridge Rectifier	Effect of error sources on

						inverting configuration
	27.11.2021			Diffusion of Impurities	Filter circuits: L, C(Calculation of ripple factor)	Effect of error sources on non-inverting configuration
	28.11.2021	SUNDAY				
8	29.11.2021	Introduction to A.C. Circuit analysis	Introduction to Junction Transistors			
	30.11.2021	Capacitance and Resistance (CR) circuit	Working of Transistors			
	1.12.2021	Numerical Practice	Potential curves in unbiased and biased transistors			
	2.12.2021			Metallization	LC Filter, Calculation of Ripple Factor	Integrating and differentiating circuit using op. amp
	3.12.2021			Classification of ICs (SSI, MSI, LSI and VLSI)	TEST-1	Active filters: Ist order LPF
	4.12.2021			TEST-1	Voltage Multiplier Circuit	Active filters: Ist order HPF
	5.12.2021	SUNDAY				
9	6.12.2021	Inductance and Resistance (LR) circuit	Transistor current components			
	7.12.2021	Numerical Practice	Early effect			
	8.12.2021	Inductance and Capacitance (LC) circuit				
	9.12.2021			Transistors for Monolithic	Introduction to Transistors and its basics	Active filters: Ist order Band Pass Filter

				Circuits (NPN & PNP)		
	10.12.2021			Monolithic Diodes	Potential curves in unbiased and biased transistor	Numericals
	11.12.2021			Integrated Resistors	Transistor Current Components	Crystal Growth CZ Method
	12.12.2021	SUNDAY				
10	13.12.2021	Numerical practice	Static characteristics of CB			
	14.12.2021	Capacitance, Inductance and Resistance (LCR) circuit	Static characteristics of CE configuration (Active Saturation and cutoff regions)			
	15.12.2021	Numerical Practice	Transistor as an amplifier			
	16.12.2021			Integrated Capacitor	Early effect, Transistor as an Amplifier,	Epitaxial Growth
	17.12.2021			Integrated Inductors	Static Characteristics of CE configuration active, cut off and regions.	Oxidation
	18.12.2021			Construction of JFET	Static Characteristics of CC configuration saturation region	Masking and Etching
		19.12.2021	SUNDAY			
11	20.12.2021	Series resonance circuit	Assignment-2			
	21.12.2021	Parallel resonance circuit	Introduction to Junction field effect transistors (JEET)			

	22.12.2021	Quality Factor	Qualitative description of JEET			
	23.12.2021			MOSFET fabrication (Qualitatively)	Static Characteristics of CB configuration active, cut off and saturation regions.	Diffusion of Impurities, Metallization
	24.12.2021			Monolithic Circuit Layout	Transistor current gains (Alpha, Beta, and Gama) and Comparison of three configurations	Assignment -2
	25.12.2021	Christmas Day				
	26.12.2021	SUNDAY				
12	27.12.2021	Review of Fundamentals of EM waves	Drain and transfer characteristics of JEET			
	28.12.2021	EM spectrum	MOSFET-Depletion Construction and working			
	29.12.2021	Reflection	Drain and transfer characteristics			
	30.12.2021			Revision	Ebers-moll model of transistor	NPN and PNP transistor Fabrication
	31.12.2021			Assignment-2	Assignment-2	Monolithic diodes, Integrated Resistors
	1.01.2022			DC Coupled Amplifier	Hybrid-Model of transistor	Principle of Voltage Regulation
	2.01.2022	SUNDAY				
13	3.01.2022	Refraction	Revision			
	4.01.2022	Diffraction, Polarization	Doubt Session			

	5.01.2022	Assignment-2	Class Test-2			
	6.01.2022			Double ended differential Amplifier	Emitter follower calculation of transistor amplifier parameters using h-model	Zener Diode as Voltage Regulation
	7.01.2022			Differential gain	Calculations of transistor amplifier parameters using h-Model	BJT Shunt and Seires regulation
	8.01.2022			Common-mode gain, CMRR	Calculations of transistor amplifier parameters using h-Model	Power supply regulation using op amp
	9.01.2022	SUNDAY				
14	10.01.2022	Fundamentals of Transmission lines	Small signal low frequency FET model			
	11.01.2022	Characteristics impedance	CS low frequency model			
	12.01.2022	Losses in Transmission line	CS low frequency model			
	13.01.2022			Ideal operational amplifier	Millers Theorem	Load regulation concept
	14.01.2022			Basic Concept of Feedback in Op amp	Dual of Millers Theorem	Short Circuit Protection Circuit
	15.01.2022			Inverting Non inverting configuration	Revision	Current regulation using op amp
	16.01.2022	SUNDAY				
15	17.01.2022	Quarter and half wavelength lines	CD low frequency model.			

	18.01.2022	Reactance properties of transmission lines	CD low frequency model.			
	19.01.2022	Revision	Sessional Exam			
	20.01.2022			Buffer, Summing amplifier,	Sessional Exam	Three Terminal IC Regulator 78xx, 79xx
	21.01.2022			Difference amplifier	Revision	Boosted Power Supply
	22.01.2022			Sessional Exam	Revision	Sessional Exam
	23.01.2022	SUNDAY				
16	24.01.2022	Sessional Exam	Sessional Test solution discussion			
	25.01.2022					