

BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

**SIVARAM VIHAR, GHATAKESWAR HILLS
MOHADA, BERHAMPUR (GM.)**



STUDENT'S ATTENDANCE REGISTER

Time	9:05	9:55	10:45	11:35	12:25
Day	9:55	10:45	11:35	12:25	1:15
MON	✓				
WED			✓		
THU	✓				
FRI		✓			
SAT	✓				

Year/ Session	13.02.2023 - 23.05.2023
Semester & Branch	4 th sem & E&TC
Subject with Code	Analog Electronics & Linear IC (TH-4)
Name of the Faculty Member	Manasi Padhy

B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic	
F E B R U A R Y	3rd	13/2/23	<p style="text-align: center;"><u>UNIT-1</u></p> <p style="text-align: center;"><u>DIODE, TRANSISTORS, AND CIRCUITS.</u></p> <p>1.1 Working Principle of diode, & its current eqⁿ, specification of PN Junction diode.</p>	
		15/2/23		
		16/2/23		
	4th	17/2/23	<p>1.2 Breakdown of diode (Avalanche & Zener breakdown) & Construction, working, characteristics.</p> <p>1.3 Classification of Rectifiers & working of diff. types of rectifiers, Halfwave rectifier, Fullwave Rectifier (CT & bridge type).</p> <p>1.4 Working Principle of n-p-n, p-n-p transistors, different types of transistor connection (CB, CE, CC) & input & O/P characteristics of transistor in diff. connection.</p> <p>1.5 Define alpha, BETA, GAMMA of</p>	
		20/2/23		
		21/2/23		
		22/2/23		
		23/2/23		
		24/2/23		
		25/2/23		
		27/2/23		
			28/2/23	

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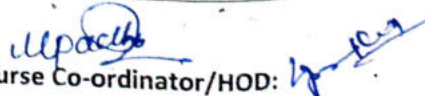
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Month	Week	Class Day	Theory/Practical Topic
M A R C H	1st	1/9/23	transistor in various mode. Establish the mathematical derivation them.
		2/9/23	2.6 Basic Concept of biasing. Type of biasing, h-paramt. model of BJT load line (AC & DC) & determine the Q-point.
	3/9/23	1.7 Types of coupling, working	
	4/9/23	Principle & use of R-C coupled Amplifier & frequency responses of R-C coupled Amplifier & draw the curve.	
	2nd	6/9/23	<p style="text-align: center;"><u>Unit-2</u></p> <p style="text-align: center;"><u>AUDIO POWER AMPLIFIERS</u></p> 2.1 classify power amplifier & differentiate bet ⁿ voltage & power Amplifier.
		9/9/23	2.2 Working principle of diff. types

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
M A R C H	3 rd	10/3/23	of power amplifiers (class-A, class-B, class-AB & class-C & class-D) 2-3 Construction & working of push pull amplifier. <u>Unit-3</u>
		11/3/23	
		13/3/23	
		14/3/23	
		15/3/23	
	4 th	16/3/23	3.1 FET & its classification & diff. bet ⁿ JFET & BJT.
		17/3/23	3.2 Construction, working principle & characteristics of JFET & explain JFET as an amplifier, paramts, of JFET & establish relation among JFET paramts.
		18/3/23	
		20/3/23	
		22/3/23	
23/3/23	3.3 Construction & working principle MOSFET & its classification & characteristics (Drain, & transfer).		
24/3/23	3.4 Explain the operation of CMOS, VMOS, & LDMOS.		
25/3/23			

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Month	Week	Class Day	Theory/Practical Topic
A P R I L	5 th	27/3/23	<p style="text-align: center;"><u>Unit-4</u></p> <p style="text-align: center;"><u>FEED-BACK AMPLIFIER & OSCILLATOR</u></p> <p>4.1 Define & classify feedback Amp. Principle of -ve feedback with the help of block diagrams, types of feedback. (-ve & +ve).</p>
		29/3/23	
	28 th	31/3/23	<p>4.2 Types of negative feedback - voltage shunt, voltage series, current shunt & current impedance, stability, noise, distortion; in amplifiers.</p>
		3/4/23	
	30 th	5/4/23	<p>4.3 Oscillator - block diagram of Sine wave oscillator, types & requirement of oscillation Barkhausen criterion.</p>
		6/4/23	
		8/4/23	
		10/4/23	

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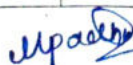
Month	Week	Class Day	Theory/Practical Topic
A P R I L			<u>Unit-5</u> <u>TUNED AMPLIFIER AND WAVE SHAPING</u> <u>CIRCUIT</u>
		11/4/23	5.1 Define & classify tuned amplifiers
		12/4/23	explain parallel resonant circuit resonance curve & sharpness of resonance.
		13/4/23	5.2 Working Principle of single tuned voltage & double tuned amplifier & its limitation.
	4th	15/4/23	
	17/4/23	5.3 Different types of non-linear circuits - clipper, diode series, & shunt, positive & negative biased & unbiased & combinational clipper circuit & its application.	
	19/4/23		
		20/4/23	5.4 Different types of clamper circuit

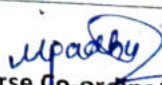

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Month	Week	Class Day	Theory/Practical Topic
			(positive & negative clampers) & its application.
	4th	21/4/23	5.5 Working of Astable, Monostable & bistable Multivibrator, with circuit diagram.
	5th	21/4/23	5.6 Working & use of integrator & differentiator circuit using R-C circuit (Linear), input/ output wave-forms & frequency response.


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Month	Week	Class Day	Theory/Practical Topic
	5th		<u>Unit-6</u> <u>OPERATIONAL AMPLIFIER CIRCUITS</u> <u>AND FEEDBACK CONFIGURATION</u>
		26/4/23	6.1 Differential amplifier & explain its configuration & significance.
		27/4/23	6.2 Block diagram representation of typical OP-AMP, its equivalent circuits & draw the schematic symbol.
		28/4/23 29/4/23	6.3 Discuss the types of integrated circuits manufacturer designations of ICs, package types, Pin identification and temperature & ordering information.
M A Y	1st	1/5/23	6.4 Define the following electrical characteristics input offset voltage

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Month	Week	Class Day	Theory/Practical Topic
M A Y			input offset current CMMR, large signal voltage gain, slew rate.
		3/5/23 4/5/23	6.5 Draw & explain the open loop configuration (inverting, non-inverting Amplifier).
	and	8/5/23 8/17/23	6.6 Draw the circuit diagram of the voltage series feedback amplifier & derive the closed loop voltage gain, gain of feedback circuits input resistance & output resistance bandwidth & total output offset voltage with feedback.
		10/5/23 11/5/23	6.7 Draw the circuit diagram of the voltage shunt feedback amplifier & derive the closed loop, voltage gain, gain of feedback

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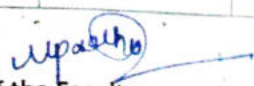
Month	Week	Class Day	Theory/Practical Topic
M A Y	2nd		circuits & input resistance & output resistance, bandwidth, total OP offset voltage with feedback.
			<u>Unit-7</u> <u>APPLICATION OF OPERATIONAL</u> <u>AMPLIFIER, TIMER CIRCUITS</u> <u>& Ics VOLTAGE REGULATOR</u>
	3rd	12/5/23 13/5/23	7.1 Discuss the summing scaling & avg. of inverting & non-inverting amplifiers.
		15/5/23	7.2 DC & AC Amplifiers using OP-AMP. 7.3 Integrator & differentiator using OP-AMP.
		17/5/23	7.4 Active filter & describe the filter design of first order lowpass Butterworth.

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Month	Week	Class Day	Theory/Practical Topic
	389	18/5/23	7.5 Concept of Zero-crossing Detector using OP-AMP.
		20/5/23	7.6 Block diagram & operation of IC 555 timer & IC 565 PLL & its applications
		21/5/23	7.7 Working of current to voltage converter using operational amplifier.
		22/5/23	7.8 Working of the voltage to frequency converter using operational amplifier.
		22/5/23	7.9 Working of the frequency to voltage conversion using operational amplifier.


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Month	Week	Class Day	Theory/Practical Topic
	4 th	23/5/23	7.10 operation of power supply using 78xx & 79xx, LM317 series with their PIN configuration 7.11 Functional block diagram & working of IC regulator LM783 & LM317.

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