LESSON PLAN

Name of the Institute :	**CV RAMAN POLYTECHNIC**
Department :	**ETC**
Semester/Division :	**4TH**
Subject Name with code :	**ANALOG ELECTRONICS AND LINEAR IC**
Total No. of Class (Required) :	**75**
Faculty Name :	**PRABHAKAR RATH**

Class Day	Theory/Practical Topics	
1.	Working principle, of Diode & its current equation, Specification and use of p-n junction diode.	
2.	Breakdown of diode (Avalanche & Zener Breakdown) and construction, working, characteristics	
3.	Classification of Rectifiers and working of different types of Rectifiers-Half-Wave Rectifier.	
4.	Full-wave Rectifier (Centre Tapped & BRIDGE type)	
5.	Working principle of p-n-p and n-p-n transistor, different types of transistor connection (CB, CE and CC).	
6.	Input and characteristics of transistor in different connections. Define ALPHA, BETA and GAMMA of transistors in various modes	
7.	Establish the mathematical relationship between them.	
8.	Basing concept of biasing, Types of Biasing, h- parameter model of BJT, load line (AC &DC) and determine the Q-point.	
9.	Types of coupling, working principle and use of R-C coupled Amplifier & Frequency Responses of R-C coupled Amplifier &draw the curve.	

	Amplifier.	
11.	REVISION	
12.	Working principle of different types of Power Amplifier (Class-A, CLASS-AB, CLASS-B Amplifier)	
13.	Working principle of different types of Power Amplifier (and CLASS-C & CLASS-D Amplifier).	
14.	Construction and working principle and advantages of Push Pull (Class-B) Amplifier.	
15.	FET & its classification	
16.	Differentiate between JFET & BJT.	
17.	QUIZE	
18.	Construction, working principle & characteristics of JFET	
19.	Explain JFET as an amplifier, parameters of JFET	
20.	Establish relation among JFET parameters.	
21.	Construction & Working principle MOSFET & its classification & characteristics (Drain & Transfer)	
22.	Explain the operation of CMOS, VMOS & LDMOS	

23.	Define & classify Feedback Amplifier	
24.	Types of feedback – negative & positive feedback.	
25.	Principle of negative feedback with the help of block diagram	
26.	Types of negative feedback – voltage shunt, voltage series, current shunt & current series and characteristics voltage gain, bandwidth, input impedance output impedance, stability, noise, distortion in amplifiers.	
27.	REVISION	
28.	ASSIGNMENT CHECK	

30.	Types Requirement of Oscillation – Barkhausen criterion.	
31.	RC oscillator – RC phase shift Oscillator: circuit operation, circuit diagram, equation or frequency of oscillation & frequency stability.	
32.	Crystal Oscillator: circuit operation, circuit diagram, equation or frequency of oscillation & frequency stability.	
33.	LC Oscillator: circuit operation, circuit diagram, equation or frequency of oscillation & frequency stability.	
34.	Colpitts Oscillator: circuit operation, circuit diagram, equation or frequency of oscillation & frequency stability.	
35.	Hartley Oscillator: circuit operation, circuit diagram, equation or frequency of oscillation & frequency stability.	
36.	Wein Bridge Oscillator: circuit operation, circuit diagram, equation for frequency of oscillation & frequency stability.	
37.	Define and classify Tuned amplifier	
38.	Explain parallel Resonant circuit	
39.	Explain Resonance Curve & sharpness of Resonance.	
40.	Working principle of single tuned Voltage & its limitation.	
41.	Working principle of Double tuned Amplifier & its limitation	
42.	Different type of Non –linear circuits	
43.	Clipper- diode series & shunt, positive and negative biased	

	Combinational clippers circuit & its application.	
45.	Different types of clamper circuit (positive & negative clampers) &its application.	
46.	REVISION	
47.	TEST	
48.	Working of Astable Multivibrator with circuit diagram.	
49.	Working of Monostable Multivibrator with circuit diagram.	
50.	Working of Bistable Multivibrator with circuit diagram.	
51.	Working use of Integrator and Differentiator circuit using R-C circuit (Linear), input /output waveforms & frequency response.	
52.	Differential amplifier & explain its configuration & significance.	
53.	Block diagram representation of a typical Op-Amp	
54.	Op-Amp equivalent circuits and draw the schematic symbol	
55.	Discuss the types of integrated circuits manufactures designations of ICs, Package types, pin identification and temperature and ordering information.	
56.	Define the following electrical characteristics input offset voltage , input offset current, CMMR ,Large signal voltage gain , Slew rate.	
57.	Draw the explain the Open Loop configuration (Inverting Amplifier)	
58.	Draw the explain the Open Loop configuration (Non- inverting Amplifier	
59.	Draw the circuit diagram of the voltage series feedback amplifier	
60.	Derive the close loop Voltage gain of feedback circuits input resistance , and output resistance, bandwidth and total output offset voltage with feedback.	
61.	QUIZE	
62.	REVISION	
63.	Concept of Zero-Crossing Detector using Op-Amp.	

65.	Block diagram and operation of IC 565 PLL & its applications	
66.	Working of current to voltage convertor using operational Amplifier.	
67.	Working of the Voltage to frequency Convertor using Operational Amplifier.	
68.	Working of the frequency to Voltage Conversion using Operational Amplifier.	
69.	Operation of power supply using 78XX and 79XX, LM 317 Series with their PIN configuration.	
70.	Functional block diagram & Working of IC regulator LM 317.	
71.	ASSIGNMENT CHECK	
72.	REVISION	
73.	REVISION	
74.	REVISION	
75.	TEST	

Sign. of Faculty

Sign. of H.O.D