

University Of Mumbai			
Class: S.E.	Branch: Computer Engineering	Semester:III	
Subject: Electronics Devises and Linear Circuits(Abbreviated as EDLC)			
Periods per week(each 60 min)	Lecture	04	
	Practical	02	
	Tutorial	--	
Evaluation System		Hours	Marks
	Theory	03	100
	Practical and oral	02	25
	Oral	--	--
	Term work	--	25
	Total	05	150

Module	Contents	Hours
1	Bipolar Junction Transistor:- BJT modeling, the hybrid equivalent model, Graphical determination of the H parameter, Negative feedback.	07
2	Field Effect Transistor:- Construction of JFETs ,Transistors characteristics ,FET small signal Model ,JFET configurations(Fixed bias ,self bias ,voltage divider ,source follower and common gate), Common Source Amplifier.	08
3	Operational Amplifier:-Introduction, block diagram representation, Analysis of equivalent circuit, the ideal op_amp, open loop op-amp configuration.	08
4	Practical op-amp – Input offset voltage, input bias current, Input offset current, Total output offset voltage, Thermal Drift, Effect of variation in power supply voltage on offset voltage ,Common mode rejection ration.	09
5	General Linear application, Comparators and Converters:- AC-DC amplifier, Summing amplifier ,Instruction amplifier, the integrator, summing amplifier, Instrumentation amplifier, the integrator ,the differentiator, zero crossing detector ,Schmitt trigger ,Analog to digital and Digital to analog converter	09
6	Timer & Voltage regulator :- The IC 55 timer ,monostable and astable multivibrator ,PLL,voltage regulator(fixed,adjustable,switching regulator)	07

TERM WORK

List of Experiments:-

- Study of characteristics of FET
- Study of RC coupled amplifier involving negative feedback
- Study of JFET amplifier
- Study of variable voltage power supply using operational amplifier
- Study of inverting amplifier.
- Study of Non- inverting amplifier.
- Study of Inverting adder and subtractor.
- Study of Non-Inverting and inverting comparator.
- Study of Schmitt trigger.
- Study of square wave generator
- Study of triangular wave generator
- Study of IC555 as Astable multivibrator/monostable multivibrator

Note:-

- As per the pattern of university question paper, the question no.1 which is compulsory question 20 marks should cover all contains of syllabus
- Term work of 25 marks to be allotted as 15 marks for practical performance and attendance in theory lectures and 10 marks for unit test.

Reference Books:-

1. Electronics Devices and circuits by Robert L. Boylestad,Louis Nashellesky,PHI Publication
2. Electronics Devices and circuits by S Salivahanan, N. sureshkumar,A. vallavaraj ,TATA McGraw Hill publication.
3. Circuits, devices and Systems by Ralph J. Smith, Richard C. Dorf, Wiley India pvt. Ltd.
4. Electronics Laboratory Prime – a design Approach by S. poorna Chandra's Chand Publication
5. Sergio Franco,' design with op-amp and analog integrated circuits,' Tata McGraw Hill series
6. Op-amp and linear integrated circuits by Ramakant A. Gayakwad ,PHI Publication.
7. 'Semiconductor Data Manual', BPB Publications.
8. 'Data Book volume I and II', Elektor Publication.
9. "TTL/CMOS Data book',Semiconductor,Texas Instruments.