

PDEA'S

MamasahebMohol College, PaudRoad, Pune – 38

Electronics Department

F.Y.B.Sc. Electronics of B.Sc. (Computer Science) CBCS 2019-20

Course Name: SEMESTER I, PAPER I- ELC 111: Semiconductor Devices and Basic Electronic System (2 Credits, 36 lectures)

After completion of this course the students will be able to

Course Outcome #	Course Outcome
CO 111.1	to study about semiconductor devices and their working
CO 111.2	to Learn about Transistor construction and working
CO 111.3	to study about types of Mosfet and their applications
CO 111.4	to study about Rectifiers, Power supply and SMPS
CO 111.5	to learn about oscillators and multivibrators
CO 111.6	To study about data converters, types and parameters

Sr.No.	Chapter	Course Specific Outcomes	Teaching Methodology	Reference
1	Semiconductor diodes Number (6 L) Introduction to semiconductors, P AND N type semiconductors .formation of PN Junction. Forward and Reverse characteristic. intro to Zener diode, LED, Photo diode their construction and working principle	The students will be able to • Know types of diodes and their construction. • Study characteristics of diode • To know about different diodes and their working principle	Lecture method, Problem solving sessions, Peer Learning	1.Electronic Devices and Circuits I-T.L Floyd 2.principles of analog Electronics- A.P.Malvino

2	Bipolar Junction transistor (7L) BJT symb,types,construction.workingof BJT configurations. Input and output characteristics of different configurations. Definition of α , β and γ ,Concept of biasing, transistor as an amplifier ,transistor as a switch.	Students will be able to • Learn to draw symbol and construction of BJT • Study of characteristic of transistor • Learn working of transistor as an amplifier	Lecture method problem solving sessions Peer learning	1.Electronic Devices and Circuits I-T.L Floyd 2.principles of analog Electronics- A.P.Malvino
3	MOSFET(5L).Mosfet types, working principle, characteristics, application of MOSFET as a switch	Students will be able to • draw symbol of MOSFET • .Learn types of Mosfet and its working • .learn characteristic of Mosfet • .learn application of Mosfet as aswitch	Lecture method problem solving sessions Peer learning	1.Electronic Devices and Circuits I-T.L Floyd 2.principles of analog Electronics- A.P.Malvino
4	Power supply (6 L) Block diagram of regulated power supply,rectifiers,zener diode as a regulator,SMPS,block diagram and explanation of UPS	Students will be able to • draw Block diagram of regulated power supply. • Different types of rectifier circuits • Learn working of zener as a regulator. • Learn about SMPS and UPS	Lecture method , Use of ICT, Animations	1.Electronic Devices and Circuits I-T.L Floyd 2.principles of analog Electronics- A.P.Malvino

5.	Oscillators(6L) barkhausen criteria,Wein bridge oscillator,IC 555 Astable multivibrator used as square wave generator/clock	Students will be able to - study about different oscillator circuits. - Block diagram of IC 555 - IC 555 As a square wave generator	Lecture method , problem solving sessions , Peer learning	1.Electronic Devices and Circuits I-T.L Floyd 2.principles of analog Electronics- A.P.Malvino
6	Data converters(6L).need of Digital To analog,converter,parameters,weighted resistive network,R-2R LADDER,need of ADC converter,parameters ,types of ADC	Students will be able to - Study need of a converter - Parameters of ADC - Study about weighted resistive network and R-2R LADDER - Learn different types of ADC such as flash ADC etc.	Lecture method , Use of ICT, Animations	1.Electronic Devices and Circuits I-T.L Floyd 2.principles of analog Electronics- A.P.Malvino

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Dr. S.S.Rane

Head of Electronics Department