



ESTD : 2007



# Sri Indu Institute of Engineering and Technology (Autonomous)

(Formerly RVR Institute of Engineering & Technology )

**An Autonomous Institution Under UGC**

NAAC Accredited. Recognized Under 2(f) of UGC Act 1956

EAMCET CODE: INDI

Approved by AICTE, New Delhi, & Affiliated to JNTUH, Hyderabad.

JNTUH CODE: X3

## COURSE FILE

ON

## ELECTRONIC DEVICES & CIRCUITS

**Course Code – EC201ES**

**I-B. Tech Semester-II**

**A.Y. 2022-2023**

**Prepared by**

**Mrs. P.SUMANA**

**Asst. Professor**

Head of the Department  
Department of H&S  
SRI INDU INSTITUTE OF ENGG & TECH  
Sheriguda(VIII) Ibrahimpatnam (M) R.R. Dist-501 510

PRINCIPAL  
Sri Indu Institute of Engineering & Tech.  
Sheriguda(VIII), Ibrahimpatnam  
R.R. Dist. Telangana-501 510.



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## INSTITUTE VISION & MISSION

### Vision:

To become a premier institute of academic excellence by providing the world class education that transforms individuals into high intellectuals, by evolving them as empathetic and responsible citizens through continuous improvement.

### Mission:

- **IM1:** To offer outcome-based education and enhancement of technical and practical skills.
- **IM2:** To Continuous assess of teaching-learning process through institute-industry collaboration.
- **IM3:** To be a center of excellence for innovative and emerging fields in technology development with state-of-art facilities to faculty and students' fraternity.
- **IM4:** To Create an enterprising environment to ensure culture, ethics and social responsibility among the stakeholders.

Head of the Department  
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**SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY  
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**Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist.,  
Telangana – 501510**

**PROGRAM OUTCOMES**

**PO1: ENGINEERING KNOWLEDGE:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2: PROBLEM ANALYSIS:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3: DESIGN/DEVELOPMENT OF SOLUTIONS:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4: CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5: MODERN TOOL USAGE:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

**PO6: THE ENGINEER AND SOCIETY:** Apply reasoning informed by the contextual knowledge to associate, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO7: ENVIRONMENT AND SUSTAINABILITY:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8: ETHICS:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9: INDIVIDUAL AND TEAM WORK:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10: COMMUNICATION:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.

**PO11: PROJECT MANAGEMENT AND FINANCE:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12: LIFE-LONG LEARNING:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

  
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**SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
**B.Tech. in COMPUTER SCIENCE AND ENGINEERING (Data Science)**  
**COURSE STRUCTURE, I YEAR SYLLABUS (BR22 Regulations)**  
**Applicable from Academic Year: 2022-23 Batch**

**I Year I Semester**

S. No.	Course Code	Course Title	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	CH103BS	Engineering Chemistry	3	1	0	4
3.	CS103ES	Programming for Problem Solving	3	0	0	3
4.	EE101ES	Basic Electrical Engineering	2	0	0	2
5.	ME101ES	Computer Aided Engineering Graphics	1	0	4	3
6.	CS106ES	Elements of Computer Science & Engineering	0	0	2	1
7.	CH106BS	Engineering Chemistry Laboratory	0	0	2	1
8.	CS107ES	Programming for Problem Solving Laboratory	0	0	2	1
9.	EE102ES	Basic Electrical Engineering Laboratory	0	0	2	1
		Induction Program				
		<b>Total</b>	<b>12</b>	<b>2</b>	<b>12</b>	<b>20</b>

**I Year II Semester**

S. No.	Course Code	Course	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	AP202BS	Applied Physics	3	1	0	4
3.	ME202ES	Engineering Workshop	0	1	3	2.5
4.	EN204HS	English for Skill Enhancement	2	0	0	2
5.	EC201ES	Electronic Devices and Circuits	2	0	0	2
6.	AP205BS	Applied Physics Laboratory	0	0	3	1.5
7.	CS201ES	Python Programming Laboratory	0	1	2	2
8.	EN207HS	English Language and Communication Skills Laboratory	0	0	2	1
9.	CS203ES	IT Workshop	0	0	2	1
10.	*MC201ES	Environmental Science	3	0	0	0
		<b>Total</b>	<b>13</b>	<b>4</b>	<b>12</b>	<b>20</b>

# ELECTRONIC DEVICES AND CIRCUITS

B.Tech. I Year II Sem.

L T P C  
2 0 0 2

## Course Objectives:

1. To introduce components such as diodes, BJTs and FETs.
2. To know the applications of devices.
3. To know the switching characteristics of devices.

**Course Outcomes:** Upon completion of the Course, the students will be able to:

1. Acquire the knowledge of various electronic devices and their use on real life.
2. Know the applications of various devices.
3. Acquire the knowledge about the role of special purpose devices and their applications.

## UNIT - I

**Diodes:** Diode - Static and Dynamic resistances, Equivalent circuit, Diffusion and Transition Capacitances, V-I Characteristics, Diode as a switch- switching times.

## UNIT - II

**Diode Applications:** Rectifier - Half Wave Rectifier, Full Wave Rectifier, Bridge Rectifier, Rectifiers with Capacitive and Inductive Filters, Clippers-Clipping at two independent levels, Clamper-Clamping Circuit Theorem, Clamping Operation, Types of Clampers.

## UNIT - III

**Bipolar Junction Transistor (BJT):** Principle of Operation, Common Emitter, Common Base and Common Collector Configurations, Transistor as a switch, switching times,

## UNIT - IV

**Junction Field Effect Transistor (FET):** Construction, Principle of Operation, Pinch-Off Voltage, Volt-Ampere Characteristic, Comparison of BJT and FET, FET as Voltage Variable Resistor, MOSFET, MOSTET as a capacitor.

## UNIT – V

**Special Purpose Devices:** Zener Diode - Characteristics, Zener diode as Voltage Regulator, Principle of Operation - SCR, Tunnel diode, UJT, Varactor Diode, Photo diode, Solar cell, LED, Schottky diode.

## TEXT BOOKS:

1. Jacob Millman - Electronic Devices and Circuits, McGraw Hill Education
2. Robert L. Boylestead, Louis Nashelsky- Electronic Devices and Circuits theory, 11th Edition, 2009, Pearson.

## REFERENCE BOOKS:

1. Horowitz -Electronic Devices and Circuits, David A. Bell – 5th Edition, Oxford.
2. Chinmoy Saha, Arindam Halder, Debaati Ganguly - Basic Electronics-Principles and Applications, Cambridge, 2018.



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Telangana – 501510

Course: Electronic Devices and Circuits

Class: I- B TECH- CSE(DATA SCIENCE)

**Course Outcomes**

After completing this course the student will be able to:

**C125.1:** Acquire the knowledge of diode with the help of V-I characteristics. (Understand)

**C125.2:** Analyze the applications of diode. (Analyze)

**C125.3:** Understand the principle of operation of BJT. (Understand)

**C125.4:** Know the characteristics of BJT under various biasing conditions. (Applying)

**C125.5:** Interpret the construction, operation and characteristics of FET. (Understand)

**C125.6:** Analyze the performance of special purpose devices and their applications. (Analyze)

**Mapping of course outcomes with program outcomes:**

High -3 Medium -2 Low-1

PO / CO	PO 1	PO2	PO3	PO4	PO5	P O 6	PO 7	PO 8	PO 9	PO 10	PO1 1	PO12	PSO1	PSO2
C125.1	3	2	-	-	3	-	-	-	-	-	2	3	3	3
C125.2	-	1	3	-	-	-	1	-	-	-	2	2	3	3
C125.3	1	3	-	-	2	1	-	-	-	-	2	-	3	3
C125.4	2	-	2	2	-	-	-	-	-	-	2	3	3	3
C125.5	2	3	3	-	3	-	-	1	-	-	2	2	3	3
C125.6	3	3	-	-	3	-	-	-	1	1	2	3	3	3
C125	2.20	2.40	2.67	2.00	2.75	1	1	1	1	1	2.00	2.60	3.00	3.00



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**CO-PO mapping Justification**

**C125.1:** Acquire the knowledge of diode with the help of V-I characteristics. (Understand)

	<b>Justification</b>
<b>PO1</b>	Applying basic knowledge on Electronic Devices And Circuits students can solve basic circuit problems.
<b>PO2</b>	Engineering problems often involve the proper utilization of diodes in electronic circuits. Identifying issues related to diode behavior is crucial for effective problem-solving.
<b>PO5</b>	Acquiring knowledge of diode V-I characteristics through the use of modern simulation tools aligns with PO Modern Tool Usage. The integration of simulation software enables engineers to create, select, and apply appropriate techniques for predicting and modeling diode behavior.
<b>PO11</b>	Students can get demonstrate knowledge and understanding of the electronic devices and circuits and apply these to one's own project, as a member and leader in a team, to manage projects and in multidisciplinary environments.
<b>PO12</b>	Students can continuously learning to explore more knowledge in semiconductor devices.
<b>PSO1</b>	Students are able to explore the design of electronic devices in the areas of VLSI design and embedded systems.
<b>PSO2</b>	Students can solve the design problems of electronic devices using Keil and Xilinx.

**C125.2:** Analyze the applications of diode. (Analyze)

	<b>Justification</b>
<b>PO2</b>	Students can analyze the rectifier, clippers, clamper Circuits using loop equations.
<b>PO3</b>	Students can design the different transistor configuration circuits.
<b>PO7</b>	Engineers focusing on sustainable development can leverage diodes and their applications to design energy-efficient systems, develop renewable energy technologies, and create environmentally friendly products.
<b>PO11</b>	Students can get demonstrate knowledge and understanding of the electronic devices and circuits and apply these to one's own project, as a member and leader in a team, to manage projects and in multidisciplinary environments.



<b>PO12</b>	Students can continuously learning to explore more knowledge in semiconductor devices.
<b>PSO1</b>	Students are able to explore the design of electronic devices in the areas of VLSI design and embedded systems.
<b>PSO2</b>	Students can solve the design problems of electronic devices using Keil and Xilinx.

**C125.3:** Understand the principle of operation of BJT. (Understand)

	<b>Justification</b>
<b>PO1</b>	Understanding the principle of operation of a BJT involves the application of mathematics, science, engineering fundamentals, and specialization in electronics.
<b>PO2</b>	Understanding the principle of operation of a BJT is crucial for problem analysis in electronic engineering. By identifying, formulating, and analyzing complex engineering problems related to BJT behavior, engineers can reach substantiated conclusions.
<b>PO5</b>	Applying simulation tools to visualize and analyze BJT characteristics, including V-I curves.
<b>PO6</b>	Engineers applying BJTs or any technology must assess the broader societal, health, safety, legal, and cultural impacts of their work.
<b>PO11</b>	Students can get demonstrate knowledge and understanding of the electronic devices and circuits and apply these to one's own project, as a member and leader in a team, to manage projects and in multidisciplinary environments.
<b>PSO1</b>	Students are able to explore the design of electronic devices in the areas of VLSI design and embedded systems.
<b>PSO2</b>	Students can solve the design problems of electronic devices using Keil and Xilinx.

**C125.4:** Know the characteristics of BJT under various biasing conditions. (Applying)

	<b>Justification</b>
<b>PO1</b>	Engineers must apply mathematical models, semiconductor physics, and circuit theory to solve complex engineering problems related to BJT biasing and amplifier design.
<b>PO3</b>	The characteristics of BJTs under various biasing conditions play a crucial role in the design and development of engineering solutions. Engineers need to consider these characteristics to design system components or processes that meet specified needs, taking into account public health and safety, as well as cultural, societal, and environmental considerations.
<b>PO4</b>	Engineers, through research-based knowledge, can conduct experiments, analyze data, and synthesize information to draw valid conclusions about BJT behavior.
<b>PO11</b>	Students can get demonstrate knowledge and understanding of the electronic devices and circuits and apply these to one's own project, as a member and leader in a team, to manage projects and in multidisciplinary environments.

<b>PO12</b>	Students can continuously learning to explore more knowledge in semiconductor devices.
<b>PSO1</b>	Students are able to explore the design of electronic devices in the areas of VLSI design and embedded systems.
<b>PSO2</b>	Students can solve the design problems of electronic devices using Keil and Xilinx.

**C125.5:** Interpret the construction, operation and characteristics of FET. (Understand)

	<b>Justification</b>
<b>PO1</b>	The knowledge of FET principles serves as a foundation for solving complex engineering problems related to electronic circuits and systems.
<b>PO2</b>	Recognizing challenges in electronic circuit design and signal processing that involve FET behavior.
<b>PO3</b>	Students, equipped with this knowledge, can design solutions for complex engineering problems, create system components using FETs, and consider health, safety, environmental, cultural, and societal factors in their designs.
<b>PO5</b>	Students can apply small signal model techniques in the design of FET amplifiers.
<b>PO8</b>	By understanding the construction, operation, and characteristics of FETs, engineers can responsibly and ethically apply this technology.
<b>PO11</b>	Students can get demonstrate knowledge and understanding of the electronic devices and circuits and apply these to one's own project, as a member and leader in a team, to manage projects and in multidisciplinary environments.
<b>PO12</b>	Students can continuously learning to explore more knowledge in semiconductor devices.
<b>PSO1</b>	Students are able to explore the design of electronic devices in the areas of VLSI design and embedded systems.
<b>PSO2</b>	Students can solve the design problems of electronic devices using Keil and Xilinx.

**C125.6:** Analyze the performance of special purpose devices and their applications. (Analyze)

	<b>Justification</b>
<b>PO1</b>	Students get the knowledge on special purpose devices like Zener, Tunnel, varactor diode, UJT, SCR to simplify the complex circuits for analysis.
<b>PO2</b>	Stude Students can design the special purpose devices like Zener, Tunnel, varactor diode, UJT, SCR .
<b>PO5</b>	Students can apply transistor hybrid model techniques in the design of BJT amplifiers.
<b>PO9</b>	Individuals equipped with expertise in the performance of these devices can effectively tackle complex problems or challenges that require the utilization of such technology. They can provide

	innovative solutions by leveraging their understanding of device capabilities.
<b>PO10</b>	Understanding device performance allows engineers to provide clear and precise instructions for integrating these devices into larger systems or for their specific applications.
<b>PO11</b>	Students can get demonstrate knowledge and understanding of the electronic devices and circuits and apply these to one's own project, as a member and leader in a team, to manage projects and in multidisciplinary environments.
<b>PO12</b>	Understanding the performance of special purpose devices places learning within the broader context of technological change.
<b>PSO1</b>	Students are able to explore the design of electronic devices in the areas of VLSI design and embedded systems.
<b>PSO2</b>	Students can solve the design problems of electronic devices using Keil and Xilinx.



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<https://siiet.ac.in/>

Lr. No. SIET/BR22/Academic Calendar/2022/02

Date: 15.12.2022

## REVISED ACADEMIC CALENDAR I.B.TECH FOR THE ACADEMIC YEAR 2022-23 (BR22-REGULATIONS)

Dr. I. Satyanarayana,  
Principal.

**X3**

To,  
All the HOD's  
Sir,

Sub: SIET (Autonomous)–Academic & Evaluation–Revised Academic Calendar for I B.Tech - I & II Semesters for the academic year 2022-2023-Reg.

\*\*\*\*\*

The approved Academic Calendar for I B.Tech – I & II Semesters for the academic year 2022-23 is given below.

### I-SEMESTER

S. NO	Description	Period		Duration
		From	To	
1.	Commencement of I Semester class work (including Induction programme)	03.11.2022		
2.	1 <sup>st</sup> Spell of Instructions	03.11.2022	28.12.2022	8 Weeks
3.	I Mid Examinations	29.12.2022	04.01.2023	1 Week
4.	Submission of First Mid Term Exam Marks to the Autonomous Section on or before	10.01.2023		
5.	2 <sup>nd</sup> Spell of Instructions	05.01.2023	02.03.2023	8 Weeks
6.	Second Mid Term Examinations	03.03.2023	09.03.2023	1 Week
7.	Preparation & Practical Examinations	10.03.2023	16.03.2023	1 Week
8.	Submission of Second Mid Term Exam Marks to the Autonomous Section on or before	16.03.2023		
9.	I Semester End Examinations	17.03.2023	01.04.2023	2 Weeks

### II-SEMESTER

S. NO	Description	Period		Duration
		From	To	
1.	Commencement of II Semester class work	03.04.2023		
2.	1 <sup>st</sup> Spell of Instructions (including Summer Vacation)	03.04.2023	10.06.2023	10 Weeks
	Summer Vacation	15.05.2023	27.05.2023	2 Weeks
3.	I Mid Examinations	12.06.2023	17.06.2023	1 Week
4.	Submission of First Mid Term Exam Marks to the Autonomous Section on or before	23.06.2023		
5.	2 <sup>nd</sup> Spell of Instructions	19.06.2023	12.08.2023	8 Weeks
6.	II Mid Term Examinations	14.08.2023	19.08.2023	1 Week
7.	Preparation & Practical Examinations	21.08.2023	26.08.2023	1 Week
8.	Submission of Second Mid Term Exam Marks to the Autonomous Section on or before	26.08.2023		
9.	II Semester End Examinations	28.08.2023	09.09.2023	2 Weeks

**Commencement of Class Work for II B.Tech I Semester – 11.09.2023**

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<https://siiet.ac.in/>

**Class:** DATA SCIENCE

**Semester:** II **W.E.F:** 03-04-2023

**LH:** D-208

	I 9:40- 10:30	II 10:30 - 11:20	III 11:20- 12:10		IV 12:45- 1.35	V 1.35- 2.25	VI 2.25- 3.15	VII 3.15-4.00
<b>MON</b>	PYTHON LAB			<b>L U N C H</b>	AP	ODE	EDC	LIBRARY
<b>TUE</b>	ITWS/EWS LAB				AP	EDC	ENG	ODE(T) /AP(T)
<b>WED</b>	ODE	AP	ES		ITWS/EWS LAB			PYTHON LAB(T)/ EWS(T)
<b>THU</b>	ODE	ENG	EDC		ODE	EDC	AP	AP(T) /ODE(T)
<b>FRI</b>	AP	ENG	EDC		AP/ELCS LAB			EWS(T)/ PYTHONLAB(T)
<b>SAT</b>	ENG	ODE	ES		AP/ELCS LAB			ES

Course Code	Course Name	Name of the Faculty	Course Code	Course Name	Name of the Faculty
<b>MA201BS</b>	ODE-Ordinary Differential Equations & Vector Calculus	CH.SARITHA	<b>AP205BS</b>	APLAB-Applied Physics Laboratory	B.SANTHI/M.MANISHA/M.JANAIAH /P.SRINIVASACHARY
<b>AP202BS</b>	AP-Applied Physics	Dr.B.NAGALAKSHMI	<b>CS201ES</b>	Python Programming Laboratory	P.BALU/M.TEJAS WI
<b>EN204HS</b>	ENG- English for Skill Enhancement	S.SWAPNA	<b>EN207HS</b>	ELCS LAB-English Language and Communication Skills Laboratory	E.PRARTHANA/S.SWAPNA
<b>EC201ES</b>	EDC-Electronics Devices and Circuits	P.SUMANA	<b>CS203ES</b>	ITWS-IT Workshop	B.RAJITHA/N.KEE RTHI CHANDANA
<b>ME202ES</b>	EWS-Engineering Workshop	W.MARUTHI/B.SRINU NAIK	<b>MC201ES</b>	ES-Environmental Science	G.VIJAY

**Class In-Charge**

**Time Table Coordinator**



**Head of The Department**  
Sri Indu Institute of Engg. & Tech  
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**LESSON PLAN**

S.N O	Unit	TOPIC	Numbe r of Sessions Planned	Teaching method/Aids	REFERENCE
1.	<b>1</b>	Introduction to diode	1	Black Board	R1,T1,PPT
2.		Static resistance and dynamic resistances	1	Black Board	R1,T1
3.		Diode Equivalent circuits	1	Black Board	R1,T1
4.		Diffusion Transition and Capacitances	1	Black Board	R1,T1
5.		Volt Ampere Characteristic of a diode	1	Black Board	R1,T1,PPT
6.		Diode as a switch	1	Black Board	R1,T1,PPT
7.		Diode switching times	1	Black Board	R1,T1
8.		Revision	1	Black Board	R1,T1,T2
9.	<b>2</b>	Half wave Rectifier	1	Black Board	R2,T1,T2
10		Full Wave Rectifier	1	Black Board	R1,T1,T2
11		Bridge Rectifier	1	Black Board	R2,T1
12		Inductor Filters, Capacitor filters	1	Black Board	R2,T1,T2
13		Clipper-clipping at two independent levels	1	Black Board	T2
14		Clamping circuit theorem	1	Black Board	T2
15		Clamping operation	1	Black Board	T2
16		Types of clampers	1	Black Board	T2

17		Problems on half wave and Full wave Rectifier	1	Black Board	T2,T1
18	3	Principle of Operation of BJT	1	Black Board, PPT	T2,PPT
19		Common emitter Configuration	1	Black Board	T2,T1,PPT
20		Efficiency calculation in CE	1	Black Board	T2,W1
21		Common base configuration	1	Black Board	T2,PPT
22		Efficiency calculation in CB	1	Black Board	T2,PPT
23		Common collector configuration	1	Black Board	T2,T1,W1,PPT
24		Efficiency calculation in CC	1	Black Board	T2,PPT
25		Transistor as switch		Black Board	T1
26		Transistor switching times		Black Board	T1
27		4	Junction Field Effect Transistor (FET) Construction	1	Black Board
28	Principle of Operation of FET		1	Black Board	T1,T2,W2
29	Pinch-Off Voltage,		1	Black Board	T1,T2
30	Volt-Ampere Characteristic		1	Black Board	T1,T2,W2
31	Comparison of BJT and FET		1	Black Board	T1,T2,W2
32	FET as Voltage Variable Resistor		1	Black Board	T1,T2,W2
33	MOSFET introduction		1	Black Board	T1
34	Depletion mode MOSTET as a capacitor		1	Black Board	T1
35	Enhancement mode		1	Black Board	T1,T2
36	MOSTET as a capacitor		1	Black Board	T1
37		Special Purpose Devices introduction	1	Black Board	T1,T2,W3
38		Zener Diode - Characteristics	1	Black Board	T1

39	5	Zener diode as Voltage Regulator	1	Black Board	T1,T2
40		Principle of Operation - SCR	1	Black Board	T1
41		Tunnel diode	1	Black Board	T1
42		UJT	1	Black Board	T1,T2
43		Varactor Diode	1	Black Board	T1
44		Photo diode, Schottky diode	1	Black Board	T1,T2
45		Solar cell,LED	1	Black Board	T1,W3

**TEXT BOOKS:**

1. Jacob Millman - Electronic Devices and Circuits, McGraw Hill Education
2. Robert L. Boylestead, Louis Nashelsky- Electronic Devices and Circuits theory, 11th Edition,2009, Pearson.

**REFERENCE BOOKS:**

1. Horowitz -Electronic Devices and Circuits, David A. Bell – 5thEdition, Oxford.
2. Chinmoy Saha, Arindam Halder, Debaati Ganguly - Basic Electronics-Principles and Applications, Cambridge, 2018.





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**WEB REFERENCES:**

W1. <https://www.rfwireless-world.com/Terminology/CB-vs-CE-vs-CC-transistor-configurations.html>

W2. <http://www.faadooengineers.com/online-study/post/ece/analog-electronics/557/fet-as-a-voltage-variable-resistor-vvr>

W3. [https://www.tutorialspoint.com/basic\\_electronics/basic\\_electronics\\_special\\_purpose\\_diodes.htm](https://www.tutorialspoint.com/basic_electronics/basic_electronics_special_purpose_diodes.htm)

W4. [http://ggn.dronacharya.info/ECEDept/Downloads/QuestionBank/VIIsem/oc\\_C-Unit-3-LED\\_Structures.pdf](http://ggn.dronacharya.info/ECEDept/Downloads/QuestionBank/VIIsem/oc_C-Unit-3-LED_Structures.pdf)



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## **LECTURE NOTES**

### **UNIT – 1 Diodes**

[https://drive.google.com/file/d/1GX10RkXW5nT11EYgosG9gxpRBYdwEIT/view?usp=drive\\_link](https://drive.google.com/file/d/1GX10RkXW5nT11EYgosG9gxpRBYdwEIT/view?usp=drive_link)

### **UNIT-2 Diode Applications**

[https://drive.google.com/file/d/1QkCNWI9nDZJEke3Y\\_uwngswXCgZSwTSj/view?usp=drive\\_link](https://drive.google.com/file/d/1QkCNWI9nDZJEke3Y_uwngswXCgZSwTSj/view?usp=drive_link)

### **UNIT-3 Bipolar Junction Transistor (BJT)**

[https://drive.google.com/file/d/1QOD0nKU5BjyQv78IIh3PzHqs6hqli7Li/view?usp=drive\\_link](https://drive.google.com/file/d/1QOD0nKU5BjyQv78IIh3PzHqs6hqli7Li/view?usp=drive_link)

### **UNIT-4 Junction Field Effect Transistor (FET)**

[https://drive.google.com/file/d/1ykPUrK6oekjH5SbCSAWgTGOi6HbdD0io/view?usp=drive\\_link](https://drive.google.com/file/d/1ykPUrK6oekjH5SbCSAWgTGOi6HbdD0io/view?usp=drive_link)

### **UNIT-5 Special Purpose Devices**

[https://drive.google.com/file/d/1P5mFC9O8nAep4NPiANcx4iMCCWDzHnAe/view?usp=drive\\_link](https://drive.google.com/file/d/1P5mFC9O8nAep4NPiANcx4iMCCWDzHnAe/view?usp=drive_link)



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**POWER POINT PRESENTATION LINKS**

**UNIT-1**

**<https://drive.google.com/file/d/1gXb7UaRibe0VGHm6PN3KbhosS1V-nZxU/view?usp=sharing>**

**UNIT-2**

**<https://drive.google.com/file/d/1KdQE27vDIWazVJMU8MUK84f139Ssy1EY/view?usp=sharing>**



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**PREVIOUS QUESTION PAPERS**

**Link:**

**[https://drive.google.com/file/d/1KH90dftl\\_RLJWQ1idPCHak3D76Agn\\_i7/view?usp=drive link](https://drive.google.com/file/d/1KH90dftl_RLJWQ1idPCHak3D76Agn_i7/view?usp=drive_link)**



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**I B. TECH II SEM I – MID Examinations, Jun-2023**

**BR22**

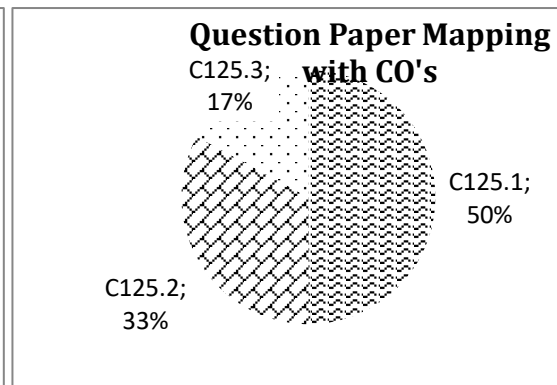
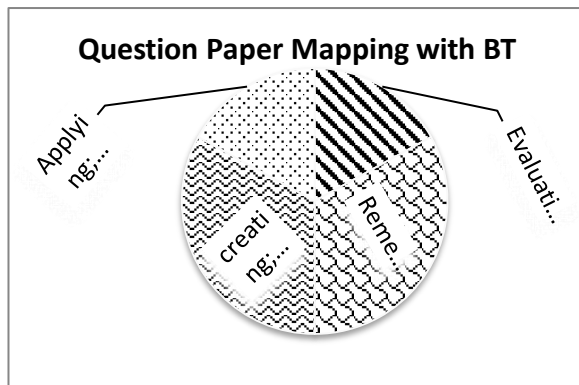
**Branch: ECE, CSE (A,B,C), IOT, AI&DS, DS,CS, AI&ML Date: 15-06-2023(FN)**  
**Subject: ELECTRONIC DEVICES AND CIRCUITS Marks: 20 Time: 2 Hours**

**PART-B**

Answer any FOUR Questions. All question Carry Equal Marks

4\*5 =20 Marks

- 1 Explain the working of P-N Junction under forward bias & Reverse bias? (C125.1) (Evaluating)
- 2 Define static & dynamic resistances? Derive the expression for dynamic resistance? (C125.1) (Remembering)
- 3 Design the Equivalent circuit of Diode with brief explanation. (C125.1) (Applying)
- 4 Draw a circuit diagram of a Bridge full wave rectifier. Explain its working and draw the input and output waveforms? (C125.2) (Creating)
- 5 Define clipper? Explain any two unbiased clippers with waveforms? (C125.2) (Remembering)
- 6 Construct & Explain the operation of NPN Transistor? (C125.3) (Creating)





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**Set-I**

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**I B.Tech II SEM I-Mid Examinations, June-2023**

**X3**

**BR22**

Branch: **ECE, CSE(A,B,C), IOT, AI&DS, DS, CS,AI&ML**

Subject Name: **Electronic Devices & Circuits**

Student Name: ..... H.T.No.: .....

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**Part-A**  
**Objective/Quiz Paper:**

The objective/quiz paper is set with multiple choice, fill-in the blanks and match the following type of questions for a total of 10 marks.

**Multiple choices:**

1. How many Terminals does a P-N Junction Contains----- ( )  
a) 3            b) 4            c) 2            d) 1
2. What is the cut-in voltage of silicon PN-Junction diode----- ( )  
a) 0.3            b) 0.7            c) 1.1            d) 0.2
3. What is the efficiency of Half wave rectifier----- ( )  
a) 81.2%        b) 40.6%        c) 73.5%        d) 78%
4. The number of depletion regions in a transistor----- ( )  
a) 3            b)2            c)4            d)1

**Fill-in the blanks**

1. The process of adding impurities to pure semiconductors is called\_\_\_\_\_.
2. The unwanted ac components present in the output of rectifier is called\_\_\_\_\_.
3. Positive clipper circuit removes \_\_\_\_\_ portion of a wave forms .
4. In NPN transistor,\_\_\_\_\_ are the minority carriers.

**Match the following:**

**9.**

- |                                 |        |                         |
|---------------------------------|--------|-------------------------|
| i.        Static Resistance     | (    ) | a. Forward bias         |
| ii.      Dynamic Resistance     | (    ) | b. Reverse bias         |
| iii.     Transition Capacitance | (    ) | c. $V/I$                |
| iv.      Diffusion Capacitance  | (    ) | d. $\Delta V/ \Delta I$ |



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**I B.Tech II SEM I-Mid Examinations, June-2023**  
Subject Name: **Electronic Devices & Circuits**

**Set-I**

**BR22**

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**ANSWER KEY**

**Descriptive paper key link:**

[https://drive.google.com/file/d/1FRhRHBGAFttKhxPfgLSwPKbqMamnYvnO/view?usp=sha  
ring](https://drive.google.com/file/d/1FRhRHBGAFttKhxPfgLSwPKbqMamnYvnO/view?usp=sharing)

**Objective Key Paper**

**Multiple choices:**

1. c
2. b
3. b
4. b

**Fill in the blanks:**

5. Doping
6. Ripples
7. Positive
8. Electrons

**Match the following:**

9.
  - i. c
  - ii. d
  - iii. b
  - iv. a



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I B. TECH II SEM II – MID Examinations, August-2023

**Set-II**

**BR22**

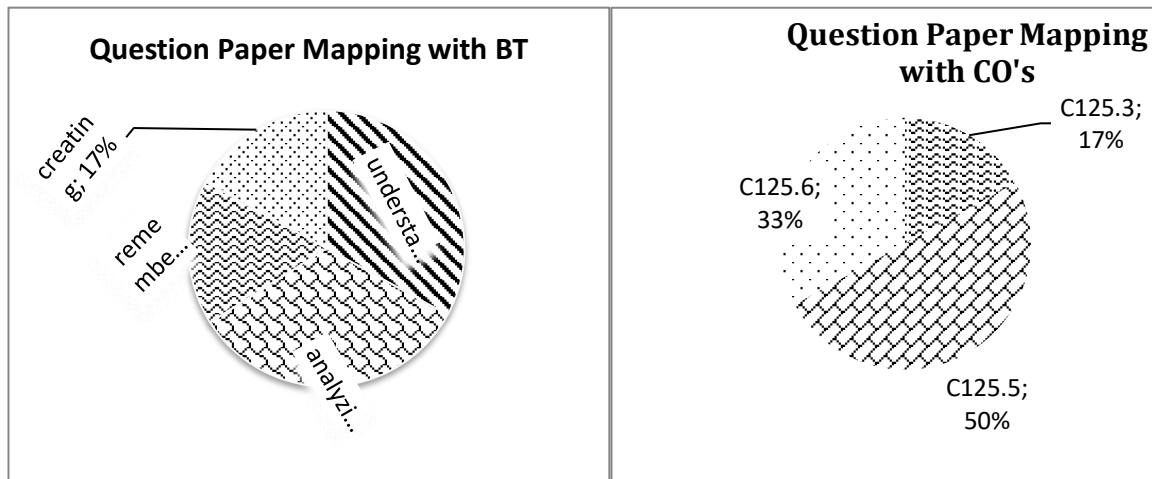
Branch: ECE, CSE(A,B,C), IOT, AI&DS, DS, CS,AI&ML Date: 18-08-2023(FN)  
Subject: ELECTRONIC DEVICES AND CIRCUITS Marks: 20 Time: 2 Hours

**PART-B**

Answer any **FOUR** Questions. All question Carry Equal Marks

4\*5 =20 Marks

- 1 Explain how the transistor acts as a switch ? (C125.3) (Understanding )
- 2 Distinguish Between BJT & JFET? (C125.5) (Analyzing)
- 3 Discuss the V-I characteristics of JFET? (C125.5) (Creating )
- 4 Compare JFET & MOSFET? (C125.5) (Analyzing )
- 5 Define UJT ? Explain the operation of UJT? (C125.6) (Remembering)
- 6 Demonstrate the construction & Working of Photo Diode? (C125.6) (Understanding )







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I B.Tech II SEM II-Mid Examinations, August-2023

Branch: ECE, CSE(A,B,C), IOT, AI&DS, DS,CS, AI&ML

**Set-II**

**BR22**

Subject Name: **Electronic Devices & Circuits**

Student Name: ..... H.T.No.: .....

**Part-A**  
**Objective/Quiz Paper:**

The objective/quiz paper is set with multiple choice, fill-in the blanks and match the following type of questions for a total of 10 marks.

**Multiple choices:**

1. What is the input terminal of CB Configuration? ( )  
a) Base b) Collector c) Emitter d) None of the above
- 2 How many P-Regions are present in N-Channel MOSFET? ( )  
a) 2 b)3 c)4 d)1
3. A JFET has three terminals, namely ..... ( )  
a)cathode, anode, grid b) emitter, base, collector c)source, gate, drain d)None of the Above
4. Zener diode is used as ( )  
a) An Amplifier b)A Voltage Regulator c)A Coupler d)A Rectifier

**Fill-in the blanks**

1. The relation between  $\alpha$  &  $\beta$  is \_\_\_\_\_.
2. The input impedance of MOSFET is \_\_\_\_\_ than the JFET.
3. The Zener diode is always operated in \_\_\_\_\_.
4. Write the Terminals of UJT \_\_\_\_\_.

**Match the following:**

**9.**

- |                    |     |                            |
|--------------------|-----|----------------------------|
| i. Zener Diode     | ( ) | a) Variable Capacitor      |
| ii. Varactor Diode | ( ) | b) Optical Source          |
| iii. UJT           | ( ) | c) Voltage Regulator       |
| iv. LED            | ( ) | d) Uni Junction Transistor |



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**Set-II**

**I B.Tech II SEM II-Mid Examinations, August-2023**

Subject Name: **Electronic Devices & Circuits**

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**ANSWER KEY**

**Descriptive paper key link:**

<https://drive.google.com/file/d/1k7uaDmgUM7XEgBwFgSo0lc2afqaJ5VA-/view?usp=sharing>

**Objective Key Paper**

**Multiple choices:**

1. c
2. d
3. c
4. b

**Fill in the blanks:**

5.  $\alpha = \beta / 1 + \beta$  ;  $\beta = \alpha / 1 - \alpha$
6. More
7. Reverse Bias
8. Base1; Base2; Emitter

**Match the following:**

9.
  - i. c
  - ii. a
  - iii. d
  - iv. b

**Mid-1 & Mid-2 student answer scripts :**

<https://drive.google.com/file/d/1shNOiJSn1zQ8nyVEssCphBOVhhEfWvzz/view?usp=sharing>  
**g**

<https://drive.google.com/file/d/19w6Af84YvJt7xtnCfXA9YjV-InBvJuuX/view?usp=sharing>



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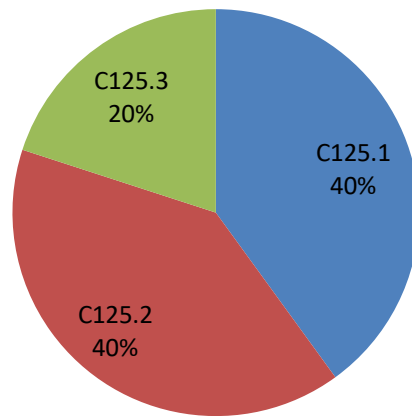
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**ASSIGNMENT QUESTIONS (MID-I)**

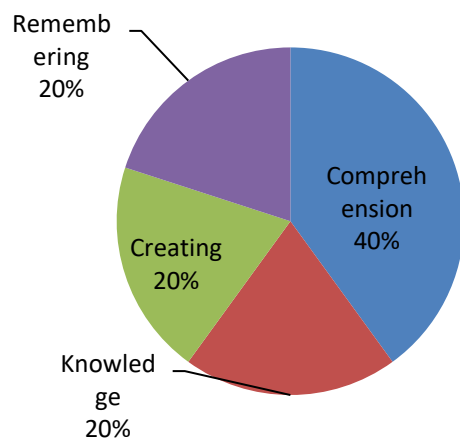
**ELECTRONIC DEVICES AND CIRCUITS (SEM-II)**

- 1 Explain the working of P-N Junction under forward bias & Reverse bias? (C125.1) (Comprehension)
- 2 Define static & dynamic resistances? Derive the expression for dynamic resistance? (C125.1) (Knowledge)
- 3 What is meant by diffusion & Transition Capacitances? Derive the expression for diffusion capacitance? (C125.1) (Remembering)
- 4 Discuss equivalent circuit of Diode? (C125.1) (Creating )
- 5 Draw a circuit diagram of a Bridge full wave rectifier. Explain its working and draw the input and output waveforms? (C125.2) (Knowledge)
- 6 Derive the Efficiency of half-Wave rectifier? (C125.2) (Remembering)
- 7 Discuss any two unbiased clippers with waveforms? (C125.2) (Creating )
- 8 Explain the operation of Capacitor-Filter with neat diagrams? (C125.2) (Comprehension)
- 9 Explain the construction and operation of NPN Transistor? (C125.3) (Comprehension)
- 10 Explain the input and output characteristics of Transistor in CE configuration. (C125.3) (Comprehension)

### Assignment Questions mapping with CO's



### Assignment Questions mapping with BT



MID-1 Assignment link :

[https://drive.google.com/file/d/11R6GMbN7yz0kcBZPc48W8m9\\_EWa1qeyn/view?usp=sharing](https://drive.google.com/file/d/11R6GMbN7yz0kcBZPc48W8m9_EWa1qeyn/view?usp=sharing)



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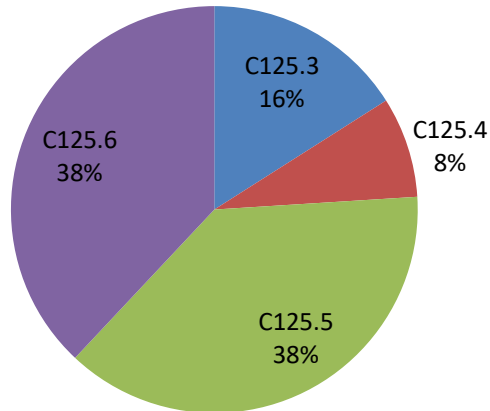
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**ASSIGNMENT QUESTIONS (MID-II)**

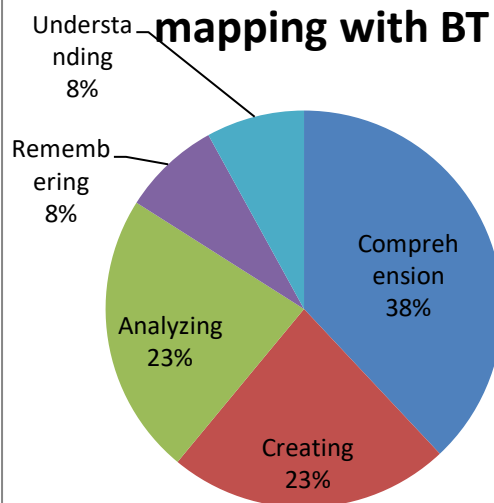
**ELECTRONIC DEVICES AND CIRCUITS (SEM-II)**

- |    |   |          |                  |
|----|---|----------|------------------|
| 1  | Compare CB, CE, CC configurations?                        | (C125.4) | (Analyzing)      |
| 2  | Explain how the transistor acts as a switch ?             | (C125.3) | (Comprehension)  |
| 3  | Discuss Switching times of a Transistor?                  | (C125.3) | (Creating )      |
| 4  | Distinguish Between BJT & JFET?                           | (C125.5) | (Analyzing )     |
| 5  | Explain the Construction & Working of N-Channel JFET?     | (C125.5) | (Comprehension)  |
| 6  | Discuss the V-I characteristics of JFET?                  | (C125.5) | (Creating )      |
| 7  | Compare JFET & MOSFET?                                    | (C125.5) | (Analyzing)      |
| 8  | Explain how the MOSFET acts as a Capacitor ?              | (C125.5) | (Comprehension)  |
| 9  | Explain the Working & V-I Characteristics of Zener Diode? | (C125.6) | (Comprehension)  |
| 10 | Explain the Construction & Working of Varactor Diode?     | (C125.6) | (Comprehension)  |
| 11 | Discuss the working conditions of Tunnel Diode?           | (C125.6) | (Creating )      |
| 12 | Define UJT ? Explain the operation of UJT?                | (C125.6) | (Remembering)    |
| 13 | Demonstrate the construction & Working of Photo Diode?    | (C125.6) | (Understanding ) |

### Assignment Questions mapping with CO's



### Assignment Questions mapping with BT



MID -2 Assignment

<https://drive.google.com/file/d/1p8JjxFvWXWsz5-ke03nI0vTWgak6cKmM/view?usp=sharing>

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**SCHEME OF EVALUATION FOR MID 1**

S.NO.	DESCRIPTION	MARKS	BLOOMS TAXONOMY	CO
1	Working Principle of PN Junction	3	(Evaluating)	(C125.1)
	PN Junction Forward bias, Reverse bias connection diagrams	2		
2	Definition for Static ,dynamic resistances	2	(Remembering)	(C125.1)
	Derivation for Static ,dynamic resistances	3		
3	Explanation for Equivalent circuit	2	(Applying)	(C125.1)
	Diagrams for Equivalent circuit	3		
4	Bridge full wave rectifier circuit diagram, waveforms	2.5	(Creating)	(C125.2)
	Bridge full wave rectifier working principle	2.5		
5	Definition, Working of Clippers	2.5	(Remembering)	(C125.2)
	circuit diagram, waveforms of clippers	2.5		
6	NPN Transistor Construction	2	(Creating)	(C125.3)
	NPN Transistor Working	3		

**SCHEME OF EVALUATION FOR MID2**

S.NO.	DESCRIPTION	MARKS	BLOOMS TAXONOMY	CO
1	For circuit diagram OF transistor	3	(Understanding )	(C125.3)
	Derivation Part	2		
2	Explanation for BJT	2.5	(Analyzing)	(C125.5)
	Explanation for JFET	2.5		
3	JFET V-I characteristics waveform, Circuit diagram of JFET	3	(Creating )	(C125.5)
	Explanation of JFET	2		
4	Explanation for MOSFET	2.5	(Analyzing )	(C125.5)
	Explanation for JFET	2.5		
5	Circuit diagram, symbol of UJT	2.5	(Remembering)	(C125.6)
	Operation of UJT	2.5		
6	Photo diode symbol, Construction	2	(Understanding )	(C125.6)
	Working Principle	3		



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**Result Analysis:**

**CSE(DATA SCIENCCE)**

<b>Course Title</b>	ELECTRONIC DEVICES & CIRCUITS
<b>Course Code</b>	EC201ES
<b>Programme</b>	B.Tech
<b>Year &amp; Semester</b>	Ist year 2 <sup>nd</sup> semester
<b>Regulation</b>	R22
<b>Course Faculty</b>	Mrs. P. SUMANA, Assistant Professor , ECE

**Weak Students:**

<b>S No</b>	<b>Roll no</b>	<b>No of backlogs</b>	<b>Internal-I Status (35Marks)</b>	<b>Internal-II Status (40Marks)</b>
1	22X31A6702	3	18	23
2	22X31A6705	2	17	26
3	22X31A6706	5	11	1
4	22X31A6708	2	24	20
5	22X31A6714	4	14	15
6	22X31A6722	2	19	21
7	22X31A6729	4	25	16
8	22X31A6730	2	25	19
9	22X31A6739	2	18	21
10	22X31A6740	1	14	14
11	22X31A6741	4	15	24
12	22X31A6742	2	24	24



**Advanced learners:**

<b>S No</b>	<b>Roll No</b>	<b>Type of support provided</b>
1	22X31A6701	<p>Advanced concepts materials is provided for advanced learners, Subject seminars are presented by advanced learners in the class, advanced learners are encouraged to support slow learners.</p>
2	22X31A6703	
3	22X31A6704	
4	22X31A6707	
5	22X31A6711	
6	22X31A6715	
7	22X31A6718	
8	22X31A6724	
9	22X31A6725	
10	22X31A6726	
11	22X31A6733	
12	22X31A6734	
13	22X31A6736	
14	22X31A6745	
15	22X31A6746	
16	22X31A6747	
17	22X31A6750	
18	22X31A6751	
19	22X31A6759	
20	22X31A6760	
21	22X31A6762	



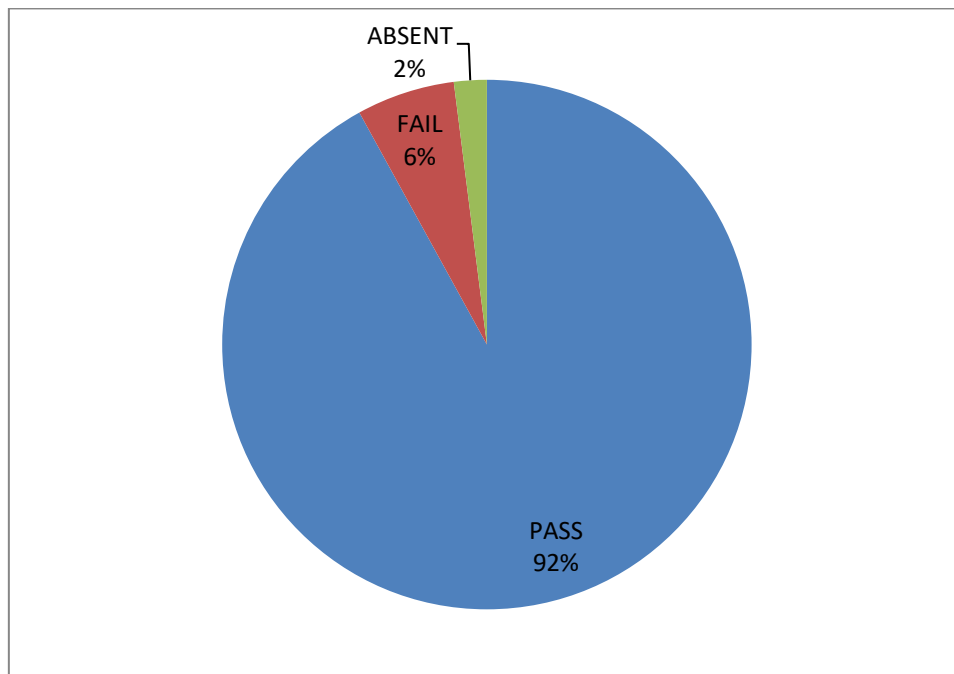
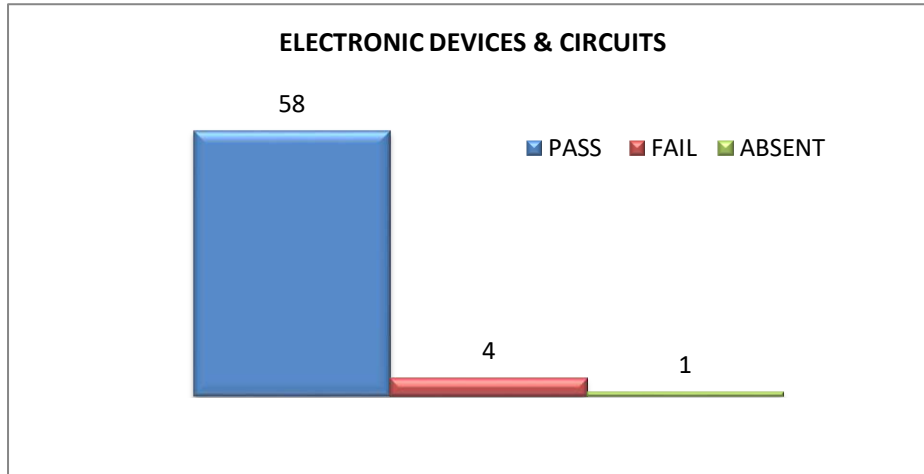
**SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
**(UGC Autonomous Institution)**

Accredited by NAAC A+ Grade, Recognized under 2(f) of UGC Act 1956.  
(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad)  
Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist.,  
Telangana – 501510

**RESULT ANALYSIS AT THE END OF SEMISTER**

**Branch: CSE(DATA SCIENCE)**

**Subject: ELECTRONIC DEVICES & CIRCUITS**





# SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

(UGC AUTONOMOUS INSTITUTION)

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(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad) Khalsa  
Ibrahimpattam, Sheriguda(V), Ibrahimpattam(M), Ranga Reddy Dist., Telangana – 501510

## DEPARTMENT OF HUMANITIES AND SCIENCE REMEDIAL CLASSES TIME TABLE

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
CSE-A	ODE&VC	ENG	EDC	AP	ODE&VC	AP
CSE-B	AP	EDC	ODE&VC	ENG	EDC	ENG
CSE-C	ENG	AP	EDC	ODE&VC	AP	ODE&VC


DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
DS	EDC	AP	ODE&VC	ENG	EDC	ODE&VC
CYBER	ENG	EDC	AP	ODE&VC	AP	ENG

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
AIML-A	ODE&VC	EC	EDC	BEE	EC	ODE&VC
AIML-B	BEE	EDC	ODE&VC	EC	BEE	EDC

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
AI&DS	BEE	EC	ODE&VC	EDC	BEE	EC
IOT	EC	ODE&VC	EDC	BEE	ODE&VC	EDC

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
ECE	ODE&VC	BEE	EC	EDC	BEE	EC
CIVIL	ODE&VC	BEE	EC	AM	BEE	EC

  
Head of the Department  
Department of H&S  
SRI INDU INSTITUTE OF ENGG & TECH  
Sheriguda(V) Ibrahimpattam (M) R.R. Dist-501 510

  
PRINCIPAL  
Sri Indu Institute of Engineering & Techno.  
Sheriguda(VIII), Ibrahimpattam  
R.R. Dist. Telangana-501 510.

# SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities & Sciences

## Course Outcome Attainment (Internal Examination-1)

Name of the faculty: P.SUMANA

Academic Year:

2022-2023

Branch & Section: CSE(DS)

Examination:

I Internal

Course Name: EDC

Year I

Semester II

S.No	HT No.	Q1a	Q1b	Q2a	Q2b	Q3a	Q3b	Q4a	Q4b	Q5a	Q5b	Q6a	Q6b	Obj1	A1
Max. Marks ==>		5		5		5		5		5		5		10	5
1	22X31A6701	4.5		5				3				4.5		8	5
2	22X31A6702	1		2				1				1		8	5
3	22X31A6703	5		5				3				5		7	5
4	22X31A6704	5				5		5		5				10	5
5	22X31A6705	1		4		2				2				3	5
6	22X31A6706	1												5	5
7	22X31A6707	5		5		5		5						10	5
8	22X31A6708	3		4				2		0				10	5
9	22X31A6709	2		5										2	5
10	22X31A6710	3		3										8	5
11	22X31A6711	5		5				4.5				4.5		9	5
12	22X31A6712	1						1		1		1		9	5
13	22X31A6713	2		0				1						7	5
14	22X31A6714	0.5		0.5						1				7	5
15	22X31A6715	4		5				4		4				10	5
16	22X31A6716	4		2				2				3		10	5
17	22X31A6717	3						2		1		2		10	5
18	22X31A6718			5		5		5				5		10	5
19	22X31A6719	5		2		4				2				10	5
20	22X31A6720	5		5		5		5						9	5
21	22X31A6721	3		3		5						3		9	5
22	22X31A6722	2		0				2				1		9	5
23	22X31A6723	2		4				1						9	5
24	22X31A6724	5		5		5						5		10	5
25	22X31A6725	4		5		5						4		10	5
26	22X31A6726	5		5		4		4						10	5
27	22X31A6727	3		5		3		3						10	5
28	22X31A6728	4		4		2				2				9	5
29	22X31A6729	2		3		3				2				10	5
30	22X31A6730	3		3		2		2						10	5
31	22X31A6731	4		4				3		3				10	5
32	22X31A6732														
33	22X31A6733	5		5		5		5						10	5
34	22X31A6734	5		5		5		5						10	5
35	22X31A6736			5		5		5		5				10	5
36	22X31A6737	5		4.5		1		2.5						9	5
37	22X31A6738	5		0		1						3		8	5
38	22X31A6739	2		0								2		9	5
39	22X31A6740	0												9	5
40	22X31A6741	1												9	5
41	22X31A6742	4		4				1						10	5
42	22X31A6743	5		5		5		5						10	5

43	22X31A6744			4				3		3		3		10	5
44	22X31A6745	5						5		5		5		10	5
45	22X31A6746	2		5		4						3		10	5
46	22X31A6747	5		5		5		5						9	5
47	22X31A6748	4.5		5		4.5						4		10	5
48	22X31A6749	2		4				2						10	5
49	22X31A6750	4		5		5						4		9	5
50	22X31A6751			5		4		2				4		9	5
51	22X31A6752	1		0						0		0		7	5
52	22X31A6753	2						0				0		8	5
53	22X31A6754	4.5		5				5		4.5				8	5
54	22X31A6755	3		3				3		3				8	5
55	22X31A6756	0						0						9	5
56	22X31A6757	1												9	5
57	22X31A6758	0												10	5
58	22X31A6759			5		5				5		5		10	5
59	22X31A6760	5		5		5						5		10	5
60	22X31A6761	3		1				1				1		8	5
61	22X31A6762	4		5		5						4		10	5
62	22X31A6763	3		4		3.5		1.5						9	5
63	22X31A6764	4		5		4						5		10	5
Target set by the faculty / HoD		3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	6.00	3.00
Number of students performed above the target		37	0	41	0	25	0	20	0	9	0	19	0	59	62
Number of students attempted		57	0	51	0	30	0	37	0	18	0	27	0	62	62
Percentage of students scored more than target		65%		80%		83%		54%		50%		70%		95%	100%

**CO Mapping with Exam Questions:**

CO - 1	Y		Y											Y	Y
CO - 2					Y		Y				Y			Y	Y
CO - 3										Y				Y	Y
CO - 4															
CO - 5															
CO - 6															

>Target %	65%		80%		83%		54%		50%		70%		95%	100%
-----------	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	------

**CO Attainment based on Exam Questions:**

CO - 1	65%		80%										95%	100%
CO - 2					83%		54%				70%		95%	100%
CO - 3									50%				95%	100%
CO - 4														
CO - 5														
CO - 6														

CO	Subj	obj	Asgn	Overall	Level	
CO-1		73%	88%	100%	87%	3.00
CO-2		69%	76%	100%	82%	3.00
CO-3		50%	73%	100%	74%	3.00
CO-4						
CO-5						
CO-6						

Attainment Lev	
1	40%
2	50%
3	60%

Attainment (Internal 1 Exam) **3.00**

# SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY



Department of Humanities & Sciences

## Course Outcome Attainment (Internal Examination-2)

Faculty: P.SUMANA

Academic Year: 2022-2023

Branch & Section: CSE(DS)

Examination: II Internal

Course Name: EDC

Year I

Semester: II

S.No	HT No.	Q1a	Q1b	Q2a	Q2b	Q3a	Q3b	Q4a	Q4b	Q5a	Q5b	Q6a	Q6b	Obj	A2	viva/ ppt
Max. Marks ==>		5		5		5		5		5		5		10	5	5
1	22X31A6701	4		5				3				3		8	5	5
2	22X31A6702	3		4				3						9	4	5
3	22X31A6703	5		5		4		5						10	5	5
4	22X31A6704	5		5				5				5		10	5	5
5	22X31A6705	3		5		3		2						8	5	5
6	22X31A6706	1		1				2				1		9	4	5
7	22X31A6707	5		5		2		4						10	5	5
8	22X31A6708	3		1		1		2						9	4	5
9	22X31A6709	3		2				1						10	5	5
10	22X31A6710	4		4				1						9	4	5
11	22X31A6711	5		5				5				5		10	5	5
12	22X31A6712	4		2		1						2		9	5	5
13	22X31A6713			4				3				3		10	5	5
14	22X31A6714	1		1				1						9	3	5
15	22X31A6715	5		5		2		5						10	5	5
16	22X31A6716	3		3		1		3						10	5	5
17	22X31A6717	2		1				1						9	5	5
18	22X31A6718	5		5				5				5		10	5	5
19	22X31A6719	3		5				3						9	5	5
20	22X31A6720			5		4		5				4		10	5	5
21	22X31A6721	2		3		1		3						10	5	5
22	22X31A6722			2		1		2				2		10	4	5
23	22X31A6723	3		2				2						8	5	5
24	22X31A6724			5		5		5				5		10	5	5
25	22X31A6725	3		4		2		4						9	5	5
26	22X31A6726	4		4				5				5		10	5	5
27	22X31A6727	2		3				1						10	5	5
28	22X31A6728	2		2				3				3		9	3	5
29	22X31A6729			3				2				2		5	4	5
30	22X31A6730			3		1		1				2		9	3	5
31	22X31A6731	5		5		3		4						10	5	5
32	22X31A6732															
33	22X31A6733			5		5		5		5				9	5	5
34	22X31A6734	5		5				4				4		10	5	5
35	22X31A6736			5				5		5		5		10	5	5
36	22X31A6737	3		4				3				3		8	5	5
37	22X31A6738	3		4		2		3						10	4	5
38	22X31A6739			5				3						10	3	5
39	22X31A6740	1		1										9	3	5
40	22X31A6741			4				3				3		9	5	5
41	22X31A6742	2		4				4				3		9	3	5
42	22X31A6743			5		2		5				4		10	5	5
43	22X31A6744			5		3		5				4		10	5	5
44	22X31A6745					5		5		5		5		10	5	5

45	22X31A6746	4		4		2		4					10	5	5	
46	22X31A6747	5		5		5				5			10	5	5	
47	22X31A6748	3		4				4			3		10	5	5	
48	22X31A6749	5						3			2		10	1	5	
49	22X31A6750			5		4		5			4		10	5	5	
50	22X31A6751	4		5				5					9	5	5	
51	22X31A6752			2							1		10	4	5	
52	22X31A6753			2				1					9	5	5	
53	22X31A6754			5		4		5			4		10	5	5	
54	22X31A6755	3		4		1		2					10	5	5	
55	22X31A6756			4				4			4		10	4	5	
56	22X31A6757			1							1		8	5	5	
57	22X31A6758			3				3			2		9	4	5	
58	22X31A6759	5		5				5			5		10	5	5	
59	22X31A6760	4		5				5			5		10	5	5	
60	22X31A6761	3		3				4		1			10	5	5	
61	22X31A6762	4		5		2		5					10	3	5	
62	22X31A6763	4		4		3							8	5	5	
63	22X31A6764	3		4		3		4					9	5	5	
Target set by the faculty / HoD		3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	6.00	3.00	3.00
Number of students performed above the target		34	0	47	0	13	0	42	0	3	0	24	0	61	13	62
Number of students attempted		42	0	60	0	27	0	56	0	4	0	33	0	62	13	62
Percentage of students scored more than target		81%		78%		48%		75%		75%		73%		98%	100%	100%

**CO Mapping with Exam Questions:**

CO - 1																Y
CO - 2																Y
CO - 3	Y												Y	Y	Y	
CO - 4					Y								Y	Y	Y	
CO - 5							Y		Y				Y	Y	Y	
CO - 6			Y								Y		Y	Y	Y	

% Students Scored >Target %	81%		78%		48%		75%		75%		73%		98%	100%	100%
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**CO Attainment based on Exam Questions:**

CO - 1																100%
CO - 2																100%
CO - 3	81%												98%	100%	100%	
CO - 4					48%								98%	100%	100%	
CO - 5							75%		75%				98%	100%	100%	
CO - 6			78%								73%		98%	100%	100%	

CO	Subj	obj	asgn	ppt	Overall	Level
CO-1				100%	100%	3.00
CO-2				100%	100%	3.00
CO-3	81%	98%	100%	100%	95%	3.00
CO-4	48%	98%	100%	100%	87%	3.00
CO-5	75%	98%	100%	100%	93%	3.00
CO-6	76%	98%	100%	100%	93%	3.00

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal Examinatic 3.00

# SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY



Department of Humanities & Sciences

## Course Outcome Attainment (University Examinations)

Name of the faculty : P.SUMANA

Academic Year: 2022-2023

Branch & Section: CSE(DS)

Year / Semester: I/II

Course Name: EDC

S.No	Roll Number	Marks Secured
1	22X31A6701	32
2	22X31A6702	30
3	22X31A6703	32
4	22X31A6704	44
5	22X31A6705	36
6	22X31A6706	16
7	22X31A6707	32
8	22X31A6708	26
9	22X31A6709	24
10	22X31A6710	22
11	22X31A6711	39
12	22X31A6712	25
13	22X31A6713	24
14	22X31A6714	27
15	22X31A6715	47
16	22X31A6716	26
17	22X31A6717	28
18	22X31A6718	43
19	22X31A6719	25
20	22X31A6720	41
21	22X31A6721	32
22	22X31A6722	34
23	22X31A6723	26
24	22X31A6724	40
25	22X31A6725	32
26	22X31A6726	32
27	22X31A6727	29
28	22X31A6728	28
29	22X31A6729	35
30	22X31A6730	39
31	22X31A6731	48
32	22X31A6732	
33	22X31A6733	42
34	22X31A6734	40
35	22X31A6736	44

S.No	Roll Number	Marks Secured
36	22X31A6737	47
37	22X31A6738	40
38	22X31A6739	46
39	22X31A6740	22
40	22X31A6741	22
41	22X31A6742	33
42	22X31A6743	32
43	22X31A6744	34
44	22X31A6745	53
45	22X31A6746	38
46	22X31A6747	49
47	22X31A6748	32
48	22X31A6749	6
49	22X31A6750	38
50	22X31A6751	30
51	22X31A6752	21
52	22X31A6753	22
53	22X31A6754	51
54	22X31A6755	26
55	22X31A6756	36
56	22X31A6757	14
57	22X31A6758	3
58	22X31A6759	49
59	22X31A6760	52
60	22X31A6761	26
61	22X31A6762	35
62	22X31A6763	25
63	22X31A6764	31
64		
65		
66		
67		
68		
69		
70		

Max Marks	60
Class Average mark	32
Number of students performed above the target	36
Number of successful students	62
Percentage of students scored more than target	58%
<b>Attainment level</b>	<b>3</b>

Attainment Level	% students
1	40%
2	50%
3	60%



# SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities & Sciences

## Course Outcome Attainment



Faculty: [P.SUMANA](#)

Academic Year: [2022-2023](#)

Branch & Section: [CSE\(DS\)](#)

Examination: [Internal](#)

Course Name: [EDC](#)

Year: [I](#)

Semester: [II](#)

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00	3.00	3.00	3.00	3.00
CO2	3.00	3.00	3.00	3.00	3.00
CO3	3.00	3.00	3.00	3.00	3.00
CO4		3.00	3.00	3.00	3.00
CO5		3.00	3.00	3.00	3.00
CO6		3.00	3.00	3.00	3.00
<b>Internal &amp; University Attainment:</b>			3.00	3.00	
<b>Weightage</b>			25%	75%	
<b>CO Attainment for the course (Internal, University)</b>			0.75	2.25	
<b>CO Attainment for the course (Direct Method)</b>			3.00		

Overall course attainment level

**3.00**

# SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY



Department of Humanities & Sciences

## Program Outcome Attainment (from Course)

Name of Faculty: [P.SUMANA](#)

Academic Year: [2022-2023](#)

Branch & Section: [CSE\(DS\)](#)

Year: [I](#)

Course Name: [EDC](#)

Semester: [II](#)

### CO-PO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	-	-	3	-	-	-	-	-	2	3	3	3
CO2	-	1	3	-	-	-	1	-	-	-	2	2	3	3
CO3	1	3	-	-	2	1	-	-	-	-	2	-	3	3
CO4	2	-	2	2	-	-	-	-	-	-	2	3	3	3
CO5	2	3	3	-	3	-	-	1	-	-	2	2	3	3
CO6	3	3	-	-	3	-	-	-	1	1	2	3	3	3
<b>Course</b>	<b>2.2</b>	<b>2.4</b>	<b>2.67</b>	<b>2</b>	<b>2.75</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2.6</b>	<b>3</b>	<b>3</b>

CO	Course Outcome Attainment
	3.00
CO1	3.00
CO2	3.00
CO3	3.00
CO4	3.00
CO5	3.00
CO6	3.00
<b>Overall course attainment level</b>	<b>3.00</b>

### PO-ATTAINMENT

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO Attainment	2.20	2.40	2.67	2.00	2.75	1.00	1.00	1.00	1.00	1.00	2.00	2.60	3.00	3.00

CO contribution to PO - 33%, 67%, 100% (Level 1/2/3)



# **SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**(UGC AUTONOMOUS INSTITUTION)**

**Accredited by NAAC A+ Grade, Recognized under 2(f) of UGC Act 1956.**

**(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad) Khalsa  
Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist., Telangana – 501510**

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## **ATTENDANCE REGISTER**

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