Sri Indu Institute of Engineering & Technology

Recognized Under 2(f) of UGC Act 1956
Approved by AICTE, New Delhi
Affiliated to JNTUH, Hyderabad.

COURSEFILE

ON

FUNDAMENTALS OF INTERNET OF THINGS

Course Code- EC600OE

III B. Tech II-SEMESTER

A.Y.:2022-2023

Prepared by

Mrs. M. Sruthi
Assistant Professor

B. Rekha Kandi
Computer Science & Engg. Dept.
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510.

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

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year	2022-2023
Course Title	FUNDAMENTALS OF INTERNET OF THINGS
Course Code	EC600OE
Programme	B. Tech
Year & Semester	III year II-semester
Branch & Section	CSE-A
Regulation	R18
Course Faculty	Mrs. M. Sruthi, Assistant Professor

Indexof CourseFile

S.No.	Name of the content
1	Institute vision and mission
2	Department vision and mission/PEO
3	POs/PSOs
4	Course Syllabus with Structure
5	Course Outcomes(CO)
6	Mapping CO with PO/PSO ;Course with PO/ PSO with Justification
7	Academic Calendar
8	Timetable-highlighting your course periods including tutorial
9	Lesson plan with number of hours/periods, TA/TM, Text/Reference book
10	Web references
11	Lecture notes
12	List of Power point presentations/Videos
13	University Question papers
14	Internal Question papers, Key with CO and BT
15	Assignment Question papers mapped with CO and BT
16	ResultAnalysistoidentifyweakandadvancedlearners-3timesina semester
17	Result Analysis at the end of the course
18	Remedial class for weak students-schedule and evidences
19	Advance Learners-Engagement documentation
20	CO,PO/PSO attainment sheets
21	Attendance register(Theory/Tutorial/Remedial)-Teacher/Course Delivery record; Continuous evaluation
22	Course file (Digital form)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

INSTITUTE VISION AND 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 centre of excellence for innovative and emerging fields in technology development with state-of art facilities to faculty and students fraternity.

IM4: Tocreate an enterprising environment to ensure culture, ethics and social responsibility among the stake holders

B. Rahul Kanth
Computer Science & Engg. Dept.
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510.

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

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DEPARTMENT VISION AND MISSION

Vision:

To become a prominent knowledge hub for learners, strive for educational excellence with innovative and industrial techniques so as to meet the global needs.

Mission:

DM1: To provide ambience that enhances innovations, problem solving skills, leadership qualities, decision making, team-spirit and ethical responsibilities.

DM2: To impart quality education with professional and personal ethics, so as to meet the challenging technological needs of the industry and society.

DM3: To provide academic infrastructure and develop linkage with the world class organizations to strengthen industry-academia relationships for learners.

DM4: To provide and strengthen new concepts of research in the thrust area of Computer Science and Engineering to reach the needs of Government and Society.

B. Rekha Kamal
Computer Science & Engg. Dept.
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510.

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

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES

PEO1: To develop trained graduates with strong academic and technical skills of modern Computer science and engineering.

PEO2: To promote trained graduates with leadership qualities and the ability to solve real time problems using current techniques and tools in interdisciplinary environment.

PEO3: To motivate the graduates towards life long learning through continuing education and professional development.

PROGRAM SPECIFICOUTCOMES

PSO1 : **Professional Skills:** To implement computer programs of varying complexity in the areas related to Web Design, Cloud Computing, Network Security and Artificial Intelligence.

PSO2: **Problem Solving Skills**: To develop quality products using open ended programming environment.

B. Rahul Kamal
Computer Science & Engg. Dept.
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510.

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

PROGRAMMEOUTCOMES (POs)

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 ,review research literature, and analyse 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 modernengineeringandITtoolsincludingpredictionandmodellingtocomplexengineeringactiviteswithanunderstandingof the limitations.

PO6: **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, 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 multi disciplinary 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, and 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 multi disciplinary 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.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech. in COMPUTER SCIENCE AND ENGINEERING

COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19Admitted Batch

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Formal Languages & Automata Theory	3	0	0	3
2	CS502PC	Software Engineering	3	0	0	3
3	CS503PC	Computer Networks	3	0	0	3
4	CS504PC	Web technologies	3	0	0	3
5		Professional Elective-I	3	0	0	3
6		Professional Elective-II	3	0	0	3
7	CS505PC	Software Engineering Lab	0	0	3	1.5
8	CS506PC	Computer Networks &Web Technologies Lab	0	0	3	1.5
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	**21**	**0**	**8**	**22**

III YEARIISEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Machine Learning	3	1	0	4
2	CS602PC	Compiler Design	3	1	0	4
3	CS603PC	Design and Analysis of Algorithms	3	1	0	4
4		Professional Elective-III	3	0	0	3
5	EC600OE	Fundamentals Of Internet Of Things(Open Elective I)	3	0	0	3
6	CS604PC	Machine Learning Lab	0	0	3	1.5
7	CS605PC	Compiler Design Lab	0	0	3	1.5
8		Professional Elective-III Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

EC600OE: FUNDAMENTALS OF INTERNET OF THINGS

B. Tech. ECE III Year II Semester **L T P C**
3 0 0 3

Course Objectives : The objectives of the course are to:

1. Understand the concepts of Internet of Things and able to build IoT applications
2. Learn the programming and use of Arduino and Raspberry Pi boards.
3. Known about data handling and analytics in SDN.

Course Outcomes: Up on completing this course, the student will be able to

1. Known basic protocols in sensor networks.
2. Program and configure Arduino boards for various designs.
3. Python programming and interfacing for Raspberry Pi.
4. Design IoT applications in different domains.

UNIT-I

Introduction to Internet of Things, Characteristics of IoT ,Physical design of IoT, Functional blocks of IoT, Sensing, Actuation ,Basics of Networking, Communication Protocols, Sensor Networks.

UNIT-II

Machine-to-Machine Communications, Difference between IoT and M2M, Interoperability in IoT, Introduction to Arduino Programming, Integration of Sensors and Actuators with Arduino,

UNIT–III

Introduction to Python programming, Introduction to Raspberry Pi, Interfacing Raspberry Pi with basic peripherals, Implementation of IoT with Raspberry Pi.

UNIT-IV

Implementation of IoT with Raspberry Pi, Introduction to Software defined Network (SDN), SDN for IoT, Data Handling and Analytics,

UNIT-V

Cloud Computing, Sensor-Cloud, Smart Cities and Smart Homes, Connected Vehicles, Smart Grid ,Industrial IoT, Case Study: Agriculture ,Healthcare, Activity Monitoring

TEXTBOOKS:

1. "The Internet 'of Things: Enabling Technologies, Platforms, and Use Cases", by Pethuru Rajand Anupama C.Raman (CRC Press)
2. “Make sensors”: Terokarvinen, kemo, karvinen and villeyvaltokari, 1st edition, maker media,2014.
3. "Internet ofThings: AHands- on Approach", byArshdeep Bahgaand Vijay Madisetti

REFERENCEBOOKS:

1. Vijay Madisetti, Arshdeep Bahga, “Internet of Things: A Hands- On Approach”
2. Waltenegus Dargie, Christian Poellabauer, "Fundamentals of Wireless Sensor Networks: Theoryand Practice"
3. Beginning Sensor networks withArduinoandRaspberryPi–CharlesBell,Apress,2013

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with A+ Grade, Recognized under 2(f) of UGC Act 1956
(Approved byAICTE,New Delhi and Affiliated to JNTUH , Hyderabad)
Khalsa Ibrahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist., Telangana – 501 510
Website:https://siiet.ac.in/

COURSEOUTCOMES

Course: Fundamentals of Internet Of Things (C325) **Class: III–CSE-A- Section**

After completing this course the student will be able to:

C325.1 Understand the concepts of Internet of Things (Knowledge)

C325.2 Analyze basic protocols in wireless sensor network (Analysis)

C325.3 Illustrate Program and configure arduino boards for various designs(comprehension)

C325.4 Explain Python programming and interfacing with raspberry pi(comprehension)

C325.5 Design IOT applications in different domain and be able to analyze their performance (Synthesis)

C325.6 Describe the evolution of and cloud computing(Knowledge)

Mapping of course outcomes with program outcomes:

High-3 Medium-2 Low-1

PO/PSO/ CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C325.1	1	-	-	-	2	-	1	-	-	-	-	3	2	2
C325.2	1	-	1	-	3	-	-	-	-	2	-	3	2	2
C325.3	1	-	2	-	3	-	-	-	-	-	-	2	2	2
C325.4	1	1	2	-		-	-	-	-	-	-	3	2	2
C325.5	1	-	-	-	2	-	1	-	-	-	-	3	2	2
C325.6	1	-	-	-	3	1	2	-	-	-	-	3	2	2
C325	1	1	1.6	-	2.6	1	1.3	-	-	2	-	2.8	2	2

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 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 – 501 510 Website:https://siiet.ac.in/

COURSE OUTCOMES

CO– PO /PSO Mapping Justification

Course: Fundamentals of Internet Of Things (C325) **Class: III – CSE –A Section**

PROGRAMME OUTCOMES (POs):

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, review research literature, and analyse 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.

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 assess societal, 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.

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, and give and receive clear instructions.

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.

PROGRAM SPECIFIC OUT COMES (PSOs):

PSO1 **Professional Skills:** The ability to implement computer programs of varying complexity in the areas related to web design, cloud computing and networking.

PSO2 **Problem-Solving Skills:** The ability to develop quality products using open ended programming environment.

C325.1 Understand the concepts of Internet of Things (Knowledge)

	Justification
PO1	Gain knowledge and working principle of IOT(level 1)
PO5	Understand the basic concepts of IOT(level 2)
PO7	Student can able to setup the functional block of IOT(level 1)
PO12	Recognize to develop the life long learnig process(level 3)
PSO1	Students get idea about communication protocols. (level 1)
PSO2	Able to handle sensor networks. (level 1)

C325.2 Analyze basic protocols in wireless sensor network (Analysis)

	Justification
PO1	Student get idea about machine to machine communication.(level 1)
PO3	Design the basic protocols of networks.(level 1)
PO5	Understanding the M2M and IOT.(level 3)
PO10	Select and apply the interoperability.(level 2)
PO12	Ability to absorb the Arduino programming.(level 3)
PSO1	Ability to clarify the Arduino programming.(level 1)
PSO2	Solve the problems of sensors.(level 1)

C325.3 Illustrate Program and configure arduino boards for various designs (comprehension)

	Justification
PO1	Deploy the sensors and Acurators. (level 1)
PO3	Gains Knowledge on machine to machine communications. (level 2)
PO5	Design the arduino programming. (level 3)
PO12	Implement the integration of sensors and acurators. (level 2)
PSO1	Student can develop arduino boards. (level 2)
PSO2	Ability to develop a raspberry pi. (level 2)

C325.4 Explain Python programming and interfacing with raspberry pi(comprehension)

	Justification
PO1	Spectialized knowledge in the basic concepts of python. (level 1)
PO2	Analyze the basic points of python programming (level 1)
PO3	Design and implement of the raspberry pi. (level 2)
PO12	Life long implementation IOT with Rasberry pi(level 3)
PSO1	Student can develop a python program codes. (level 2)
PSO2	To deveiop a IOT with raspberry Pi. (level 2)

C325.5 Design IOT applications in different domain and be able to analyze their performance (Synthesis)

	Justification
PO1	Deploy the Software defined networks. (level 1)
PO5	Gains the knowledge on IOT Apllications. (level 2)
PO7	Understand the concept of SDN. (level 1)
PO12	Enables to design solution for Data Handling and Analytics. (level 3)
PSO1	Ability to classify the data handling concepts. (level 2)
PSO2	To develop a data analytics. (level 2)

C325.6 Describe the evolution of and cloud computing(Knowledge)

	Justification
PO1	Student can get idea about cloud computing. (level 1)
PO5	Apply appropriate technique of cloud computing. (level 3)
PO6	Students can get knowledge on smart cities and homes. (level 1)
PO7	Understand the concept of smart cities. (level 2)
PO12	Life long implementation of cloud storage. (level 3)
PSO1	Ability to learn the all the concepts of IOT . (level 3)
PSO2	Ability to develop a case studies in IOT. (level 2)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

ACADEMIC CALENDAR 2022-23

B. Tech./B. Pharm. III YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	**09.09.2022**	
2	1st Spell of Instructions (including Dussehra Recess)	09.09.2022	10.11.2022 (9 Weeks)
3	Dussehra Recess	03.10.2022	08.10.2022 (1 Week)
4	First Mid Term Examinations	11.11.2022	17.11.2022 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	24.11.2022	
6	2nd Spell of Instructions	18.11.2022	12.01.2023 (8 Weeks)
7	Second Mid Term Examinations	16.01.2023	21.01.2023 (1 Week)
8	Preparation Holidays and Practical Examinations	23.01.2023	28.01.2023 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	30.01.2023	
10	End Semester Examinations	30.01.2023	11.02.2023 (2 Weeks)

Note: No. of Working/ instructional days: 92

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	**13.02.2023**	
2	1st Spell of Instructions	13.02.2023	08.04.2023 (8 Weeks)
3	First Mid Term Examinations	10.04.2023	15.04.2023 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	22.04.2023	
5	2nd Spell of Instructions (including Summer Vacation)	17.04.2023	24.06.2023 (10 Weeks)
6	**Summer Vacation**	15.05.2023	27.05.2023 (2 Weeks)
7	Second Mid Term Examinations	26.06.2023	01.07.2023 (1 Week)
8	Preparation Holidays and Practical Examinations	03.07.2023	08.07.2023 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	08.07.2023	
10	End Semester Examinations	10.07.2023	22.07.2023 (2 Weeks)

Note: No. of Working/ instructional days: 90

REGISTRAR

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution under UGC)
Accredited by NAAC with 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 – 501 510
Website: https://siiet.ac.in/

TIME TABLE FOR A.Y 2022-23

Class: III-B. Tech CSE -A **Semester: II** **LH. NO: A-201** **W.E.F:13-02-2023**

Period/ Day	1 9:40-10:30	2 10:30-11:20	3 11:20-12:10	4 12:10-1:00	1:00-1:30	5 1:30-2:20	6 2:20-3:10	7 3:10-4:00
Monday	DAA	CD	LIB	STM	LUNCH	STM LAB(BATCH-I)/CD LAB(BATCH-II)		
Tuesday	STM	DAA	DAA/ML(T)	ML		FIOT	STM	SPORTS
Wednesday	FIOT	CD	INT	STM		ML/CD(T)	CO-C/SS/DAA	
Thursday	FIOT	ML LAB(BATCH-I)/STM LAB(BATCH-II)				DAA	CD	STM
Friday	CD	COUN	ML	FIOT		ML LAB(BATCH-II)/CD LAB(BATCH-I)		
Saturday	CD	FIOT	CD/DAA(T)	DAA		ML		DAA

(T) – Tutorial (concern faculty)

Subject Code	Subject Name	Name of the Faculty	Subject Code	Subject Name	Name of the Faculty
CS601PC	Machine Learning	Mrs N Shilpa		Fundamentals of Internet of Things	Mrs. M.Sruthi
CS602PC	Compiler Design	Dr. Sasikumar D	CS604PC	Machine Learning Lab	Mrs N Shilpa/ K.Manmadha / V. Divya
CS603PC	Design and Analysis of Algorithms	Mr A Vijay Kumar	CS605PC	Compiler Design Lab	Dr. Sasikumar D / Ms K Mounika/ P.Swathi
CS615PE	Software Testing Methodologies	Mrs E Rupa	CS625PE	Software Testing Methodologies Lab	Mrs E Rupa/ Mrs S Akhila / Mrs. M.Sruthi
	CO-C/SS/DAA/ Cyber Security	Mrs. M.Sruthi	LIB	Library	Mrs K.Manmadha
Sports	Sports	Mr A Vijay Kumar	COUN	Counselling	Mrs.A.Sudha
Internet	Internet	Mrs.A.Sudha	CS601PC	Machine Learning	Mr M Dattatreya Goud (Adjunct)
			MC609	Environmental Science(LE)	Mr D Nagaraju
Class In-Charge : Mrs N Shilpa		**Mentor 1 :** Mrs N Shilpa		**Mentor 2:** Mrs E Rupa	

Class In-Charge

Computer Science & Engg. Dept.
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510
HOD

PRINCIPAL
Sri Indu Institute of Engineering & Tech
Sheriguda(V), Ibrahimpatnam
R.R. Dist. Telangana
PRINCIPAL

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with A+ Grade, Recognized under 2(f) of UGC Act 1956
(Approved by AICTE ,New Delhi and Affiliated to JNTUH, Hyderabad)
Khalsa,I brahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist.,Telangana – 501 510
Website: https://siiet.ac.in/

Department Computer Science and Engineering

2022-23; 2nd semester

Course Title	FUNDAMENTALS OF INTERNET OF THINGS
Course Code	EC600OE
Program	B. Tech
Year & Semester	III-year II-semester
Regulation	R18
Course Faculty	Mrs. M. Sruthi, Assistant Professor , CSE-A

LESSON PLAN

S.NO	Unit	TOPIC	Number of Sessions Planned	Teaching method/Aids	REFERENCE
1	**1**	Introduction to Internet of things	1	Black Board	T1
2		IOT advantages& Disadvantages	1	Black Board	T1
3		Characteristics	1	Black Board	T1
4		Physical design of IOT	1	Black Board	T1
5		(Physical design of IOT)	1	Black Board	T1
6		Logical design of IOT	1	Black Board	T1
7		Functional blocks of IOT	1	Black Board	T1
8		Sensing of IOT	1	Black Board	T1
9		Actuation of IOT	1	Black Board	T1
10		**(**Sensing and actuation)	1	Black Board	T1
11		Basics of Networking	1	Black Board	T1
12		Communication Protocols	4	Black Board	T1
13		Communication Protocols	1	Black Board	T1
14		Sensor Networks.	1	Black Board	T1
15	**2**	Machine-to-Machine Communications	1	Black Board	T1
16		Difference between IoT and M2M	1	Black Board	T1

17		Interoperability in IoT	1	Black Board	T1
18		Introduction to Arduino Programming	1	Black Board	T1
19		(Introduction to Arduino Programming)	1	Black Board	T1
20		Integration of Sensors		Black Board	T1
21		Integration of Actuators with Arduino.	1	Black Board	T1
22	**3**	Introduction to Python programming	1	Black Board	T1
23		Introduction to data types	1	Black Board	T1
24		**(** Introduction to data types)	1	Black Board	T1
25		Introduction to Raspberry Pi	1	Black Board	T1
26		Raspberry Pi boards.	1	Black Board	T1
27		Interfacing Raspberry Pi with basic peripherals	1	Black Board	T1
28		Implementation of IoT with Raspberry Pi.	1	Black Board	T1
29	**4**	**(**Implementation of IoT with Raspberry Pi)	1	Black Board	T1
30		Introduction to Software defined Network	1	Black Board	T1
31		SDN for IOT	1	Black Board	T1
32		Data Handling and Analytics	1	Black Board	T1
33	**5**	Cloud Computing	1	Black Board	T1
34		Sensor-Cloud	1	Black Board	T1
35		Smart Cities	1	Black Board	T1
36		Smart Homes	1	Black Board	T1
37		Connected Vehicles		Black Board	T1
38			1	Black Board	T1
39		Smart Grid	1	Black Board	T1
40		Industrial IoT	1	Black Board	T1
41		Case Study on Agriculture	1	Black Board	T1
42		Case Study on Healthcare,	1	Black Board	T1
43		**(** Smart Grid Industrial IOT)	1	Black Board	T1
44		Case Study on Activity Monitoring	1	Black Board	T1

Web References

https://www.youtube.com/watch?v=urUBLmXFKl0

https://www.tutorialspoint.com/physical-design-of-iot

https://docs.arduino.cc/learn/starting-guide/getting-started-arduino/

https://www.youtube.com/watch?v=H9OEAn3Uc2w

https://www.spiceworks.com/tech/networking/articles/what-is-raspberry-pi/

http://www.digimat.in/nptel/courses/video/106105166/L29.html

https://www.geeksforgeeks.org/software-defined-networking/

https://www.youtube.com/watch?v=rJjpMYpPXUE

https://www.javatpoint.com/iot-smart-home-and-smart-city

https://www.youtube.com/watch?v=0O7lZkhMisQ

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
Accredited by NAAC with 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 – 501 510
Website:https://siiet.ac.in/

LECTURE NOTES

Unit_1 link:

https://drive.google.com/file/d/1Lc2V6g6rToLKWVj4ak8_9tIyWkrm1tZM/view?usp=drive_link

Unit_2 link:

https://drive.google.com/file/d/1ARUHiOe60GLj0W0UA1dGKuIKrCIShYwg/view?usp=drive_link

Unit 3 link:

https://drive.google.com/file/d/1pdlatgu6r5m6-jmWcHZOihv67DK8yaUh/view?usp=drive_link

Unit_4 link:

https://drive.google.com/file/d/1xa5ERmZnYkBbLjxg8ANVwM_4V2fpcolN/view?usp=drive_link

Unit 5 link:

https://drive.google.com/file/d/1MR1-qQD9qLU7DI1HQGoqmMvWkp9Oufsn/view?usp=drive_link

POWER POINT PRESENTATION

PPT link:

https://drive.google.com/file/d/1AyiunsZWPGkG-U6jf7PmpgIxTdRoqnCx/view?usp=drive_link

Code No: 156DR **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, August/September - 2021

FUNDAMENTALS OF INTERNET OF THINGS

(Common to EEE, CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Answer any five questions All questions carry equal marks

\- - -

1.a)	Identify the link layer protocols in IoT.	
b)	Explain the functional blocks of IoT.	[7+8]
2.a)	Demonstrate request-response communication model.	
b)	Discuss IoT network technologies.	[8+7]
3.a)	Explain M2M system architecture.	
b)	Write the applications of M2M.	[7+8]
4.a)	How to integrate sensors and actuators with Arduino?	
b)	Give the anatomy of Arduino program.	[7+8]
5.a)	Explain the control structure in Python.	
b)	Write Python program to control LED on Raspberry Pi.	[7+8]
6.a)	List and explain popular commands used in Raspberry Pi.	
b)	Steps to interface Raspberry Pi with a sensor.	[7+8]
7.a)	Explain key elements of SDN.	
b)	Describe the steps for data acquiring in IoT implementation.	[7+8]
8.a)	Explain the different services of Cloud computing.	
b)	Give the requirements and devices for interconnected transport system.	[7+8]

---ooOoo---

Code No: 156DR **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, August - 2022
FUNDAMENTALS OF INTERNET OF THINGS
(Common to EEE, CSE, IT)

Time: 3 Hours **Max.Marks:75**

Answer any five questions All questions carry equal marks
- - -

1.a) What are the main challenges in Internet of Things (IoT)?
b) What kind of information do Internet of Things (IoT) objects communicate? [8+7]

2.a) How might wireless communications have an effect on the development andimplementation of the Internet of Things (IoT)? Explain.
b) Explain the protocol used to link the devices in IoT. [8+7]

3.a) How data collection and analysis approaches differ in M2M and IOT?
b) Define ETSI M2M domains and High-level capabilities. [8+7]

4.a) Explain about interfacing an LED and switch with Arduino.
b) What is the difference between Sensors and Actuators? Explain with an example. [8+7]

5.a) Discuss in detail the use of embedded computing in the design of IoT Systems.
b) Explain in detail the Raspberry Pi interfaces. [7+8]

6.a) What is the use of SPI and I2C interfaces on Raspberry pi?
b) Describe how SDN can be used at various levels of IOT. [8+7]

7.a) Discuss the role of Data Analytics in Internet of Things (IoT).
b) Explain about various components and business model patterns in the Internet of Things. [10+5]

8. Explain the following:
a) Cloud Platform for IoT/M2M Applications/Services
b) Cloud Service Models. [8+7]

---oo0oo---

Code No: 156DR **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSIT YHYDERABAD

B .Tech III Year II Semester Examinations, February - 2023

FUNDAMENTALS OFINTERNET OFTHINGS

(Common to CE,EEE,ME, CSE,EIE,IT,MCT)

Time:3Hours **Max. Marks: 75**

Note :i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit.

Each question carries 10marks and may have a, b as sub questions.

PART–A

(25Marks)

1.a)	Define 6LoWPAN.	[2]
b)	Explain about transport layer?	[3]
c)	What is an actuator?	[2]
d)	What are various types of sensors ? Explain.	[3]
e)	What are advantages of Raspberry Pi?	[2]
f)	Describe classes in Python programming.	[3]
g)	Define SDN.	[2]
h)	Discuss about data flow in Map Reduce.	[3]
i)	What are advantages of Cloud?	[2]
j)	Explain about connected vehicles using IoT.	[3]

PART–B

(50Marks)

2. a) Explain about IoT communication API s in detail.
b) What are communication protocols? Explain. [5+5]

OR

3. a)Discuss about IoT functional blocks.
b) What are IoT protocols? Explain. [5+5]

4. What is Arduino Programming? Explain about basics of Arduino coding. [10]

OR

5. Explain in detail about interoperability in IoT. [10]

6. Discuss about Python packages of interest for IoT in detail. [10]

OR

7. Explain about implementation of IoT with Raspberry Pi. [10]

8. What are SDN layers ? Explain in detail with a neat diagram. [10]

OR

9. a) Explain about Hadoop cluster setup.
b)Discuss about setting up a Strom cluster. [5+5]

10. Explain about home automation using IoT in detail. [10]

OR

11. Discuss about environment monitoring using IoT in detail. [10]

---ooOoo---

Code No: 156DR **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, February/March - 2022

FUNDAMENTALS OF INTERNET OF THINGS

(Common to CE, EEE, ME, CSE, EIE, IT, MCT)

Time: 3 hours **Max. Marks: 75**

Answer any five questions

All questions carry equal marks

1.a) Discuss the characteristics of IoT.

b) Explain how important are communication protocols when it comes to IoT? [5+10]

2. .a) What is IoT? Explain evolutionary phases of the Internet.

b) Which protocol is used to link all the devices in the IoT? Explain in detail. [5+10]

3. a) Explain M2M service layer standardization.

b) Explain clearly, the procedure to interface an analog sensor with Arduino programming. [8+7]

4 .a) What are the distributions supported by Raspberry Pi?

b) Write a Python program on Raspberry Pi to blink an LED. [7+8]

5 .a) There are two models of Raspberry Pi, A and B. Which model is suitable applications?

Justify your answer with necessary technical details by comparing above two models.

b) How SDN can be used for various levels of IoT? [7+8]

6. a) Describe different Cloud Service Models.

b) Explain Data visualization and its importance in IoT. [7+8]

7 .a) Discuss the role of Data Analytics in Internet of Things (IoT).

b) Construct the Design of Smart home with Raspberry Pi and other hardware devices with neat sketch. [7+8]

8. a) With a neat diagram, explain how actuators and sensors interact with physical world.

Classify actuators based on energy type.

b) Explain Smart city security architecture. [7+8]

--ooOoo--

Sri Indu Institute of Engineering &Technology

Sheriguda (V),Ibrahimpatnam (M),R.R.Dist-501510

I-MidExaminations,MAY-2023

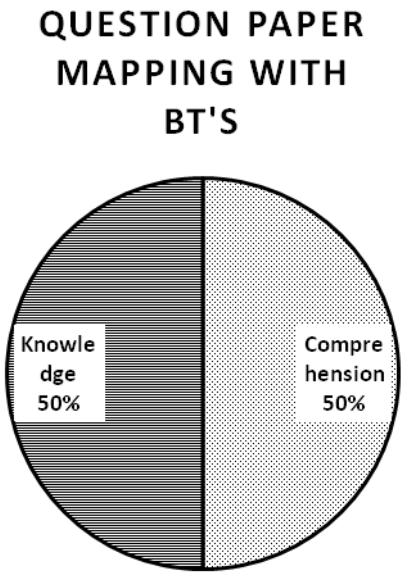
SET-1

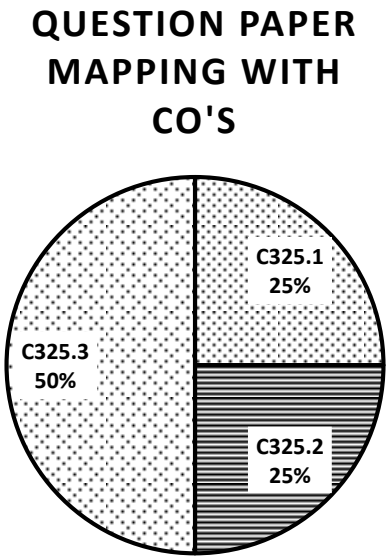
Year & Branch: III CSE-A,B&C Time:60mins

Subject **:FIOT** maxmarks:10 Date:01-05-2023(AN)

Answer any TWO questions each question carry equalmarks2*5=10marks

1	Define IOT? Explain about the characteristics of IOT and its Applications?	(5)	C325.1	(Knowledge)
2	Explain Sensing & its types of sensors with example ?	(5)	C325.2	(Comprehension)
3	Discribe briefly about M2M Communication?	(5)	C325.3	(Knowledge)
4	Explain about Interoperability in Internet of Things?	(5)	C325.3	(Comprehension)





Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M),R.R.Dist-501510

I-MidExaminations,MAY-2023

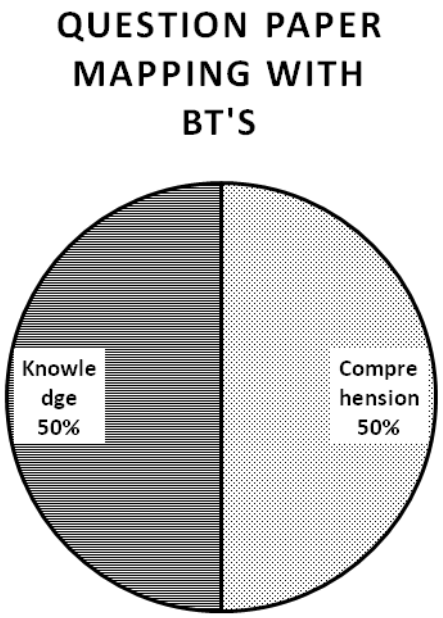
SET–II

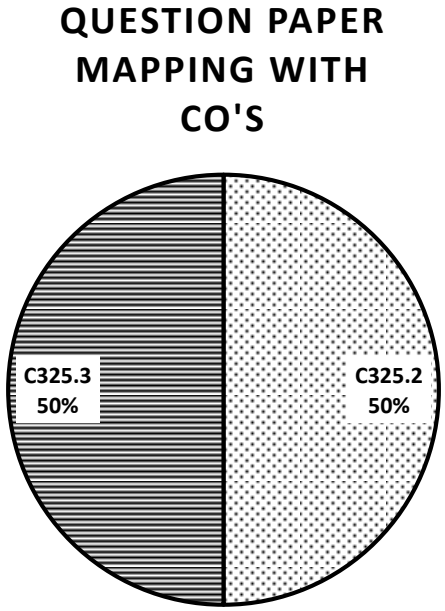
Year & Branch: III CSE-A,B&C Time:60mins

Subject: **FIOT** MaxMarks:10 Date:01-05-2023(AN)

Answer any TWO questions each question carry equal marks 2*5=10marks

1	Define Actuator ?Explain the types of Actuators ?	(5)	C325.2	(Knowledge)
2	Explain about IOT & its characteristics?	(5)	C325.3	(Comprehension)
3	Explain briefly about Arduino programming with Architechture?	(5)	C325.3	(Comprehension)
4	Define M2M Communication with neat Diagram?	(5)	C325.2	(Knowledge)





Sri Indu Institute of Engineering & Technology

Shereguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

B-Tech I- Mid Examinations, May -2023

Objective Type Exam

Year & Branch: III –CSE A, B&C ,CSE(AI&ML,CS,IOT) Date: 01/5/2023

Subject: **FIOT** Max. Marks: 10 Time: 20 mins

Name: …….. Roll No……

Choose the correct answers.

1. Through which network does Open IoT manage registration, deployment of sensors_____? [ ]

a) LSMb b) HTTP c)X-GSN d) GSN

2. Identify the java extension file in IoT_____? [ ]

a) .C b) .PY c) .exe d) .Jar

3. Total types of voice communications in IoT environment is? [ ]

a) 1 b)2 C)3 d)4

4. The Standard length of the MAC Address is [ ]

a) 16 bits b)48 bitsc) 32 bits d) 8 bits

5. VNC stands for _____ [ ]

a) Virtual network communication

b) Virtual network computing

c) Virtual network computers

d) None

6. Who operates the core element_____? [ ]

a) Paas b) Iaas c) IOT Service Provider d) Saas

7. Identify the incorrect advantage of IoT_____? [ ]

a) Reduce Waste b) Ehanced Data Collection

c) Improve Customer engagement d) Security

8. Who Coined the term_____? [ ]

a) IBM b) Kevin Ashton c) Ross Ihaka d) Guido van Rossum

9. Service is termed as in SOA _____? [ ]

a) Network Service b) Software Service c) Business Service d) Developer service

10. Through API_____ Service Portability is enabled [ ]

a) Device b) Network C) Services d)Systems

II Fill in the Blanks

11. Identify the challenge coming under securing the information_____
12. Full form of SBC is_____
13. Total types in which IoT platform is divided_____
14. ITS stands for _____
15. Which of the following allows to monitor the application_____
16. In which of the following terms in resolution expressed_____
17. SLA stands for _____
18. _____Identify the last step of reliable data transfer.
19. IoT stands for _____
20. The term IoT was coined in _____

Sri Indu Institute of Engineering &Technology

Sheriguda (V),Ibrahimpatnam (M),R.R.Dist-501510

I-MidExaminations,MAY-2023

Year & Branch :III CSE-A,B&C Time:60mins

Subject **:FIOT** maxmarks:10 Date:01-05-2023(AN)

ANSWER KEY

Descriptive paper key link:

SET-1: https://drive.google.com/file/d/128Sxj2PWrvXXkuRM1mq937KL7dlkc9pJ/view?usp=drive_link

SET-2: https://drive.google.com/file/d/1SzjjwtyfUi0BVH1pwYXqvDnWSnwObwP8/view?usp=drive_link

FIOT
OBJECTIVEKEY

I. Choose the correct alternative:

1. C
2. D
3. C
4. B
5. B
6. C
7. A
8. B
9. C
10. D

11. Presence Detection
12. Smart Business center
13. 4
14. Intelligent transportation Services
15. End points
16. Bits
17. Service level argument
18. Selective recovery
19. Internet of Things
20. 1999

Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

II- Mid Examinations, June -2023

SET-I

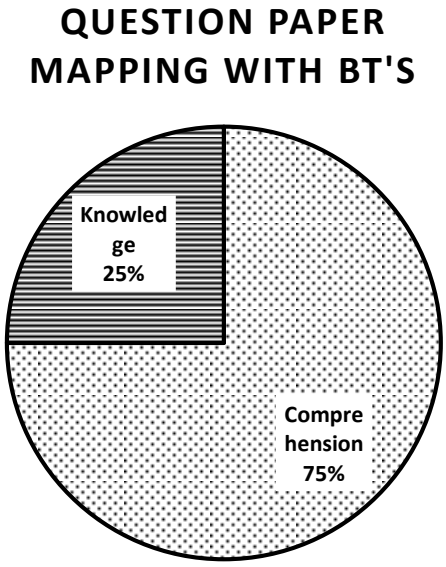
Year &Branch: III- CSE-A,B & C — Date: 01/07/2023

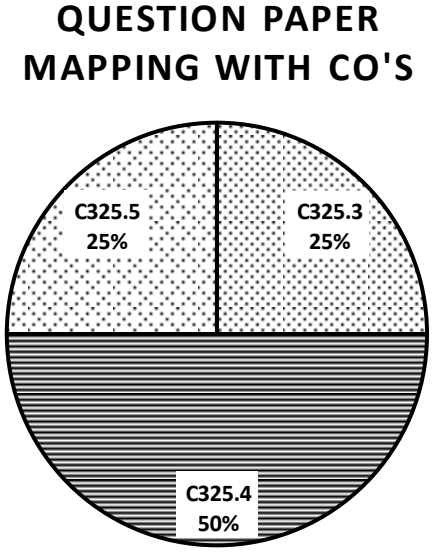
Subject: **FIOT** — Max. Marks:10 — Time: 60mins

Answer any TWO questions each question carry equal marks2*5=10 marks

1. Implementation of IOT with Raspberry Pi. **(C325.4) (Comprehension).(5M)**
2. Explain Python Programming Data Types. **(C325.3) (Comprehension). (5M)**
3. Describe Software Defined Network. **(C325.4) (Knowledge). (5M)**
4. Explain in details Case study of Healthcare and Agriculture.

(C325.5) (Comprehension). (5M)





Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

II-Mid Examinations, June -2023

SET-II

Year &Branch: III- CSE-A,B&C — Date: 01/07/2023

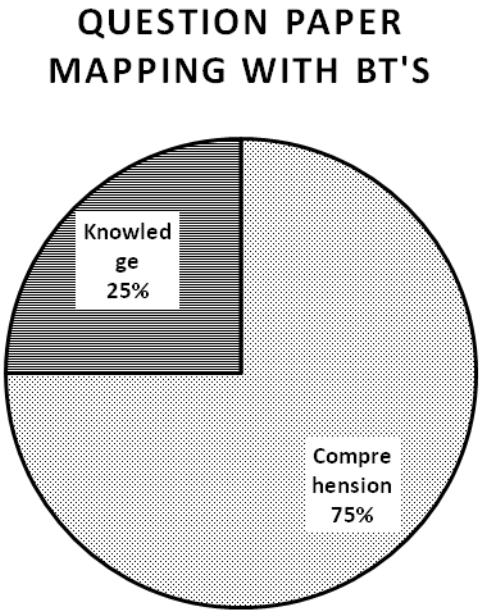
Subject: **FIOT** — Max. Marks:10 — Time: 60mins

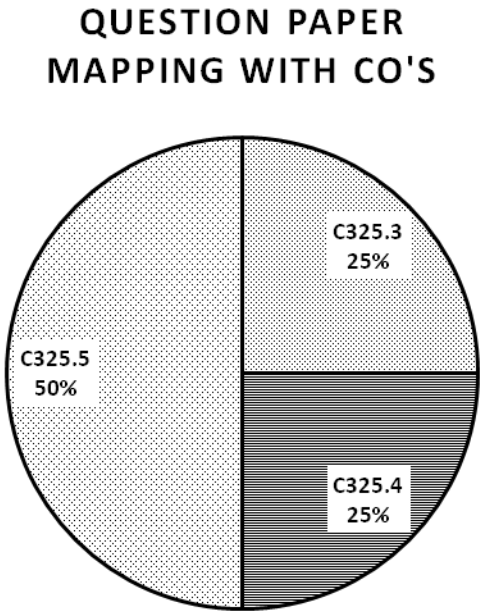
Answer any TWO questions each question carry equal marks 2*5=10 marks

1. Explain Python Programming Data Types. **(C325.3) (Comprehension)(5M)**
2. Describe data handling and Analysis. **(C325.4) (Knowledge) (5M)**
3. Explain in detail Smart grid computing. **(C325.5) (Comprehension) (5M)**
4. Explain In detail. **(C325.5) (Comprehension) (5M)**

(a).Connected Vehicles.

(b)Smart Cities and Smart Homes





SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY

Sheriguda (V), Ibrahimpatnam (M), R.R. Dist-501 510

DEPARTMENT OF COMPUTER SCIENCE& ENGINEERING

B.TECH III YEAR II SEM – II MID TERM EXAMINATIONS, JULY - 2023

FUNDAMENTALS OF INTERNET OF THINGS

OBJECTIVE EXAM

Date:01/07/2023

Name: **Hall Ticket No:**

Answer all the following Questions. All Questions Carry Equal Marks .

I. Choose the correct alternative: 10 X ½ =5 Marks

1. The Raspberry Pi is defined as the? [ ]

A) Mini computer B) Micro Computer C) Mega Computer D) Nano Computer

2. Raspberry Pi consists of a _____ quad-core processor or microprocessor. [ ]

A).16-bit B) 32-bit C) 64-bit D). 128-bit

3. Which of the following are not types of Raspberry Pi? [ ]

A). Raspberry Pi Alternatives B). Raspberry Pi Zero W

C). Raspberry Pi 3 Model B+D). Raspberry Pi 3 Model A+

4. What is the frequency rate of z-wave? [ ]

A) 908.42 GHz B) 928.49 GHz C) 888.42 GHz D) 708.49 GHz

5. The code written in Arduino IDE is referred to as. [ ]

A) Script B) Block C) Sketch D) Arduino Script

6.Which of the following data type is correct for the object below? [ ]

D=[‘python’,3.43,‘p’,100].

A) Array B) Dictionary C) Tuple D) List

7. Application program interface (API) used between data and control planes in SDN is known as. [ ]

A) North bound APIB) East bound APIC) Southbound APID) Westbound API

8.One of the advantages of SDN-based sensor network is. [ ]

A) Real-time programmability B) No needs to replace any node

C) Both a & b D) None of the above

9. Does fog support IOT concepts? [ ]

A) True B) False

10. IOT promotes the creation of IOT terminal industry [ ]

A) Devices B) Network C) Clusters D) Things

II. Fill in the blanks: **10 X ½ = 5 Marks**

1. How many Input/ output pins on board Raspberry Pi3 has_____
2. How many USB ports are present in Raspberry Pi 3_____
3. What is the maximum peripheral current draw allowed in Raspberry pi 3_____
4. Integrity in data security is _____
5. Smart grid enables _____
6. Sensor-Cloud deals with_____
7. ITS stands for _____
8. What are the three main issues faced by cloud while handling I0T data_____
9. In smart grid, gateways communicate using_____
10. The levels of IOT are called as _____

Sri Indu Institute of Engineering & Technology

Sheriguda (V),Ibrahimpatnam (M),R.R.Dist-501510

II- MidExaminations,-2023

Year & Branch: III CSE-A,B&C

Subject **:FIOT** MaxMarks:10

ANSWERKEY

Descriptive paper key link:

SET-1: https://drive.google.com/file/d/12yEGnquf4vx6gnpNpk3u8v_Uy3T5EmyX/view?usp=drive_link

SET-2: https://drive.google.com/file/d/1Z-RtasrXspjgQqoxJfU8efM7YFBIGc2D/view?usp=drive_link

FIOT

OBJECTIVE KEY

I. Choose the correct alternative:

1. A
2. C
3. D
4. A
5. C
6. B
7. C
8. A
9. A
10. C

II. FILL IN THE BLANKS

11. 40
12. 4
13. 1200mA
14. Detecting unauthorized data modification
15. Distributed energy management
16. Sensor as a service
17. Intelligent Transport Service
18. Volume, Latency & Bandwidth
19. IEEE 802.11
20. Tires

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
Accredited by NAAC with 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 – 501 510
Website:https://siiet.ac.in/

ASSIGNMENT-1 SUBJECT: FUNDAMENTALS OF INTERNET OF THINGS

1. Explain the characteristics of IOT? **C325.1(Comprehension)**
2. Write about sensing and Actuation? **C325.2 (Knowledge)**
3. Explain communication protocols? **C325.3 (Comprehension)**
4. Explain the differences between IOT & M2M? **C325.2(Comprehension)**
5. Explain in detail about Arduino board and Draw its architecture? **C325.3 (Comprehension)**
6. Write about Python Programming? **C325.3 (Knowledge)**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
Accredited by NAAC with 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 – 501 510
Website:https://siiet.ac.in/

SUBJECT: FUNDAMENTALS OF INTERNET OF THINGS

ASSIGNMENT- 1 KEY LINK:

https://drive.google.com/file/d/1BImeD6JejCENhQ7k5Z3dJzcS-SttOKYX/view?usp=drive_link

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
Accredited by NAAC with 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 – 501 510
Website:https://siiet.ac.in/

ASSIGNMENT-2 SUBJECT: FUNDAMENTALS OF INTERNET OF THINGS

1. Explain Raspberry PI basic peripherals? **C325.3(Comprehension)**
2. Explain data handling & Analytics in SDN? **C325.4(Comprehension)**
3. Write about implementation of IOT with Raspberry PI? **C325.4 (Knowledge)**
4. Explain about Cloud Computing? **C325.5(Comprehension)**
5. Write about connected vehicles in IOT? **C325.5 (Knowledge)**
6. Explain about Smart Grid? **C325.5(Comprehension)**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
Accredited by NAAC with A+ Grade, Recognized under 2(f) of UGC Act 1956
(Approved byAICTE,New Delhi and Affiliated to JNTUH, Hyderabad)
Khalsa Ibrahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist., Telangana – 501 510
Website:https://siiet.ac.in/

SUBJECT: FUNDAMENTALS OF INTERNET OF THINGS

ASSIGNMENT- 2 KEY LINK:

https://drive.google.com/file/d/1BLs7Dl3yp4JH_2ivz6dQPMhthPPTPCiz/view?usp=drive_link

Course Title	FUNDAMENTALS OF INTERNET OF THINGS
Course Code	EC600OE
Program	B. Tech
Year & Semester	III year I-semester , A sec
Regulation	R18
Course Faculty	Mrs. M. SRUTHI, Assistant Professor, CSE

Weak Students:

S No	Roll no	No of backlogs	Internal-I Status	Internal-II Status
1	20X31A0503	6	18	15
2	20X31A0506	4	20	19
3	20X31A0507	6	19	19
4	20X31A0511	5	20	18
5	20X31A0520	4	21	20
6	20X31A0526	5	21	17
7	20X31A0531	5	23	22
8	20X31A0533	5	21	20
9	20X31A0554	4	22	21
10	20X31A0556	5	17	15
11	20X31A0558	6	17	15
12	20X31A0559	5	22	21

Advanced learners:

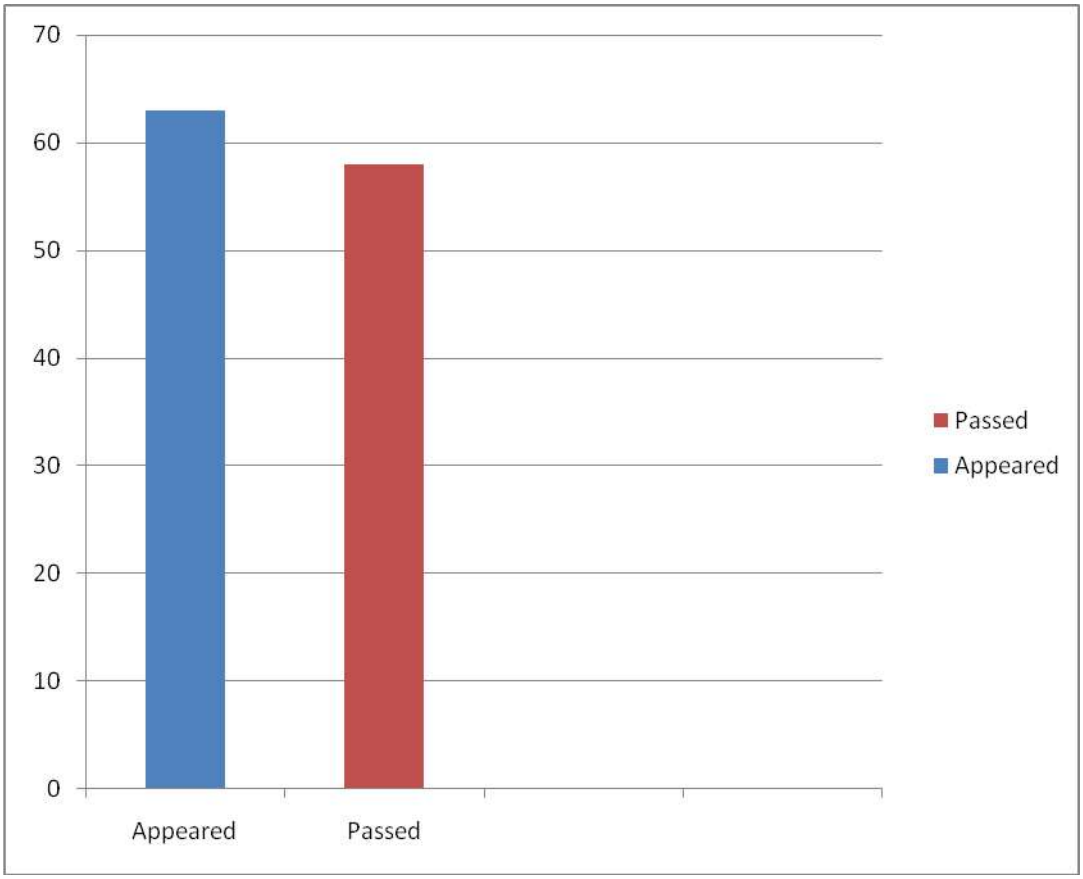
S No	Roll No	Gate Material
1	20X31A0502	Sensor Networks, Interoperability in IOT, Introduction to Arduino Programming, Introduction to Raspberry PI, Data Handling & Analytics, Industrial IOT
2	20X31A0516	
3	20X31A0523	
4	20X31A0525	
5	20X31A0543	
6	20X31A0545	
7	20X31A0557	
8	20X31A0560	

SRI INDU INSTITUTEOFENGINEERINGANDTECHNOLOGY
Accredited by NAAC with 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 – 501 510
Website:https://siiet.ac.in/

BATCH CSE- III BTECH II SEM

CSE-A RESULT ANALYSIS

ACADAMIC YEAR	COURSE NAME	NUMBER OFSTUDENTS		QUESTION PAPERSETTING		PASS%
		APPEARED	PASSED	INTERNAL	EXTERNAL	
2022-23	FUNDAMENTALS OF INTERNET OF THINGS	63	58	COURSE FACULTY	JNTUH	92.06%



F

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution under UGC)
Accredited by NAAC with 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 – 501 510
Website: https://siiet.ac.in/

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

REMEDIAL CLASSES TIME TABLE

A.Y 2022-23 **SEMESTER-II**

BRANCH/ SEC	MON 4.00 PM-5.00 PM	TUE 4.00 PM-5.00 PM	WED 4.00 PM-5.00 PM	THUR 4.00 PM-5.00 PM	FRI 4.00 PM-5.00 PM
II CSE-A	DM	JAVA	DBMS	BEFA	OS
II CSE-B	BEFA	DBMS	DM	OS	JAVA
II CSE-C	DBMS	OS	BEFA	JAVA	DM
III CSE-A	CD	ML	DAA	STM	FIOT
III CSE-B	DAA	FIOT	CD	ML	STM
III CSE-C	ML	STM	FIOT	CD	DAA
IVCSE-A	OB	TQM	DS	-	-
IV CSE-B	DS	OB	TQM	-	-
IV CSE-C	TQM	DS	OB	-	-

HOD
Computer Science & Engg. Dept.
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510

PRINCIPAL
PRINCIPAL
Sri Indu Institute of Engineering & Tech
Sheriguda(Vill), Ibrahimpatnam

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment (Internal Examination-1)

Name of the faculty :		M. SRUTHI							Academic Year:					2022-23		
Branch & Section:		CSE- A							Examination:					I Internal		
Course Name:		FUNDAMENTALS OF INTERNET OF THINGS							Year:		III			Semester:II		
S. No	HT No.	**Q1 a**	**Q1 b**	**Q1 c**	**Q2 a**	**Q2 b**	**Q2 C**	**Q3 A**	**Q3b**	**Q3 c**	**Q4 a**	**Q4 b**	**Q4 c**	**Obj1**	**A1**	
Max. Marks ==>		**5**			**3**	**2**		**3**	**2**		**5**			**10**	**5**	
1	20X31A0501	**3**						5						**8**	5	
2	20X31A0502				5			5						10	5	
3	20X31A0503				4			3						6	5	
4	20X31A0504				5			4						10	5	
5	20X31A0506				4			3						8	5	
6	20X31A0507	3						4						7	5	
7	20X31A0508				5			4						10	5	
8	20X31A0509				5			3						9	5	
9	20X31A0510	3						5						8	5	
10	20X31A0511							4			3			8	5	
11	20X31A0512				4			4						10	5	
12	20X31A0513				4			4						10	5	
13	20X31A0514	5						3						9	5	
14	20X31A0515	5			4									10	5	
15	20X31A0516				5			4						10	5	
16	20X31A0517				5						4			10	5	
17	20X31A0518				4			4						10	5	
18	20X31A0519				5			3						9	5	
19	20X31A0520	3						5						8	5	
20	20X31A0521	4						3						8	5	
21	20X31A0522				5			3						9	5	
22	20X31A0523	4						4						10	5	
23	20X31A0524	3						5						8	5	
24	20X31A0525	3						5						5	5	
25	20X31A0526	3						5						8	5	
26	20X31A0527				4			3						8	5	
27	20X31A0528				3			5						8	5	
28	20X31A0529	5						4						10	5	
29	20X31A0530	5						3						9	5	
30	20X31A0531	4						4						10	5	
31	20X31A0532							4			3			8	5	
32	20X31A0533				3			5						8	5	
33	20X31A0534	3						5						5	5	
34	20X31A0535	5						5						10	5	
35	20X31A0536				5						4			10	5	
36	20X31A0537	5			5									10	5	
37	20X31A0538				5			3						9	5	

38	20X31A0539	5						4						10	5
39	20X31A0540							3			5			8	5
40	20X31A0541	4						3						8	5
41	20X31A0542				5			4						10	5
42	20X31A0543	5						5						10	5
43	20X31A0544	5						5						10	5
44	20X31A0545				5			5						10	5
45	20X31A0546				3			5						8	5
46	20X31A0547				5			3						9	5
47	20X31A0548							5			3			9	5
48	20X31A0549	5						4						10	5
49	20X31A0550				4			4						10	5
50	20X31A0551				5			5						10	5
51	20X31A0552				4			4						10	5
52	20X31A0553				5			3						9	5
53	20X31A0554				5			3						9	5
54	20X31A0555				5			3						9	5
55	20X31A0556	3						3						5	5
56	20X31A0557				5			4						10	5
57	20X31A0558	3						4						5	5
58	20X31A0559				5			3						9	5
59	20X31A0560	5						5						10	5
60	21X35A0501				3			4						7	5
61	21X35A0502				5			5						10	5
62	21X35A0503				5			4						10	5
63	21X35A0504	3						3						5	5

Target set by the faculty / HoD	2.00	0.00	0.00	1.20	0.80	0.00	1.20	0.80	0.00	2.00	0.00	0.00	4.00	2.00
Number of students performed above the target	26	0	0	35	0	0	59	0	0	6	0	0	63	63
Number of students attempted	26	0	0	35	0	0	59	0	0	6	0	0	63	63
Percentage of students scored more than target	100%			100 %			###			100%			###	100 %

CO Mapping with Exam Questions:

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

CO Attainment based on Exam Questions:

CO - 1	100%			100 %									###	100 %

CO - 2							###						###	100 %
CO - 3										100%			###	100 %
CO - 4														
CO - 5														
CO - 6														

CO	**Subj**	obj		Asgn	Overall	Level
CO-1	100%	100 %		100 %	100%	3.00
CO-2	100%	100 %		100 %	100%	3.00
CO-3	100%	100 %		100 %	100%	3.00
CO-4						
CO-5						
CO-6						

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal 1 Examination) = **3.00**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment (Internal Examination-2)

Name of the faculty	M. SRUTHI	Academic Year:	2022-23
Branch & Section:	CSE- A	Examination:	II Internal
Course Name:	FUNDAMENTALS OF INTERNET OF THINGS	Year: III	Semester: II

S. No	HT No.	Q1 a	Q1b	Q1 c	Q2a	Q2 b	Q2 c	Q3a	Q3 b	Q3 c	Q4a	Q4 b	Q4 c	Obj 4	A4
Max. Marks ==>		5			5			5			5			10	5
1	20X31A0501	2						5						5	5
2	20X31A0502				4			4						10	5
3	20X31A0503	2									3			5	5
4	20X31A0504	4									4			10	5
5	20X31A0506	3			4									7	5
6	20X31A0507	3			4									7	5
7	20X31A0508				5			3						9	5
8	20X31A0509	3						5						8	5
9	20X31A0510	3						4						7	5
10	20X31A0511				4						3			6	5
11	20X31A0512	3									5			8	5
12	20X31A0513	3						5						8	5
13	20X31A0514	4						3						6	5
14	20X31A0515				5			3						9	5
15	20X31A0516	4									4			10	5
16	20X31A0517				4						4			10	5
17	20X31A0518	4									4			10	5
18	20X31A0519	4									3			8	5
19	20X31A0520							4			3			8	5
20	20X31A0521	4						3						6	5
21	20X31A0522				5						3			9	5
22	20X31A0523							4			4			10	5
23	20X31A0524	4						3						8	5
24	20X31A0525	5									5			10	5
25	20X31A0526	2						5						5	5
26	20X31A0527	2						3						5	5
27	20X31A0528							4			3			6	5
28	20X31A0529				4						4			10	5
29	20X31A0530				2						4			5	5
30	20X31A0531	5									3			9	5

31	20X31A0532				2						3			5	5
32	20X31A0533	4			3									8	5
33	20X31A0534	5									5			10	5
34	20X31A0535	5						4						10	5
35	20X31A0536				5			3						9	5
36	20X31A0537	4			4									10	5
37	20X31A0538	4						3						8	5
38	20X31A0539	4						4						10	5
39	20X31A0540	3						5						8	5
40	20X31A0541	4						3						8	5
41	20X31A0542	5			3									9	5
42	20X31A0543	5						4						10	5
43	20X31A0544	5									4			10	5
44	20X31A0545							4			4			10	5
45	20X31A0546	4						3						8	5
46	20X31A0547							3			5			8	5
47	20X31A0548				4						3			8	5
48	20X31A0549							5			3			9	5
49	20X31A0550				4			3						8	5
50	20X31A0551				4			4						10	5
51	20X31A0552							5			3			9	5
52	20X31A0553	3									5			8	5
53	20X31A0554	3									5			8	5
54	20X31A0555				3						5			8	5
55	20X31A0556	2						3						5	5
56	20X31A0557							5			3			9	5
57	20X31A0558	2						3						5	5
58	20X31A0559	3						5						8	5
59	20X31A0560	5						4						10	5
60	21X35A0501				2			4						5	5
61	21X35A0502	5						4						10	5
62	21X35A0503				4			4						10	5
63	21X35A0504				2			3						5	5
Target set by the faculty / HoD		2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	4.00	2.00
Number of students performed above the target		38	0	0	22	0	0	38	0	0	28	0	0	63	63
Number of students attempted		38	0	0	22	0	0	38	0	0	28	0	0	63	63
Percentage of students scored more than target		100 %			100 %			100 %			100 %			100%	100 %

CO Mapping with Exam Questions:

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

% Students Scored >Target %	100 %			100 %			100 %			100 %			100%	100 %

CO Attainment based on Exam Questions:

CO - 1														
CO - 2														
CO - 3														
CO - 4	100 %												100%	100 %
CO - 5				100 %									100%	100 %
CO - 6							100 %			100 %			100%	100 %

CO	**Subj**	obj		Asgn	Overall	Level
CO-1						
CO-2						
CO-3						
CO-4	100 %	100 %		100 %	100%	3
CO-5	100 %	100 %		100 %	100%	3
CO-6	100 %	100 %		100 %	100%	3

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal Examination-2) = **3.00**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment

Name of the faculty : M. SRUTHI
Academic Year: 2022-23
Branch & Section : CSE- A
Examination: I Internal
Course Name : FUNDAMENTALS OF INTERNET OF THINGS
Year: III
Semester: II

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00		3.00	2.00	2.25
CO2	3.00		3.00	2.00	2.25
CO3	3.00		3.00	2.00	2.25
CO4		3.00	3.00	2.00	2.25
CO5		3.00	3.00	2.00	2.25
CO6		3.00	3.00	2.00	2.25
Internal & University Attainment:			3.00	2.00	
Weightage			25%	75%	
CO Attainment for the course (Internal, University)			0.75	1.50	
CO Attainment for the course (Direct Method)			2.25		

Overall course attainment level **2.25**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Program Outcome Attainment (from Course)

Name of Faculty:	M. SRUTHI	Academic Year:	2022-23
Branch & Section:	CSE- A	Year :	III
Course Name:	FUNDAMENTALS OF INTERNET OF THINGS	Semester:	II

CO-PO mapping

	PO 1	PO 2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	-	-	-	2	-	1	-	-	-	-	3	2	2
CO2	1	-	1	-	3	-	-	-	-	2	-	3	2	2
CO3	1	-	2	-	3	-	-	-	-	-	-	2	2	2
CO4	1	1	2	-		-	-	-	-	-	-	3	2	2
CO5	1	-	-	-	2	-	1	-	-	-	-	3	2	2
CO6	1	-	-	-	3	1	2	-	-	-	-	3	2	2
Course	1	1	1.6	-	2.6	1	1.3	-	-	2	-	2.8	2	2

CO	**Course Outcome Attainment**
CO1	2.25
CO2	2.25
CO3	2.25
CO4	2.25
CO5	2.25
CO6	2.25
Overall course attainment level	**2.25**

PO-ATTAINMENT

	PO 1	PO 2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO Attainment	**0.75**	**0.75**	**1.20**		**1.95**	**0.75**	**0.98**			**1.50**		**2.10**	**1.50**	**1.50**

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

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment (University Examinations)

Name of the faculty : M. SRUTHI Academic Year: 2022-23

Branch & Section: CSE- A Year / Semester: III / II

Course Name: FUNDAMENTALS OF INTERNET OF THINGS

S.No	Roll Number	Marks Secured
1	20X31A0501	47
2	20X31A0502	43
3	20X31A0503	17
4	20X31A0504	56
5	20X31A0506	36
6	20X31A0507	27
7	20X31A0508	36
8	20X31A0509	44
9	20X31A0510	33
10	20X31A0511	11
11	20X31A0512	32
12	20X31A0513	40
13	20X31A0514	36
14	20X31A0515	43
15	20X31A0516	41
16	20X31A0517	43
17	20X31A0518	33
18	20X31A0519	45
19	20X31A0520	36
20	20X31A0521	35
21	20X31A0522	40
22	20X31A0523	46
23	20X31A0524	34
24	20X31A0525	46
25	20X31A0526	16
26	20X31A0527	34
27	20X31A0528	36
28	20X31A0529	52
29	20X31A0530	19
30	20X31A0531	37
31	20X31A0532	33
32	20X31A0533	30
33	20X31A0534	62
34	20X31A0535	55
36	20X31A0537	47
37	20X31A0538	47
38	20X31A0539	54
39	20X31A0540	47
40	20X31A0541	51
41	20X31A0542	48
42	20X31A0543	57
43	20X31A0544	45
44	20X31A0545	52
45	20X31A0546	39
46	20X31A0547	46
47	20X31A0548	44
48	20X31A0549	58
49	20X31A0550	59
50	20X31A0551	43
51	20X31A0552	28
52	20X31A0553	39
53	20X31A0554	27
54	20X31A0555	46
55	20X31A0556	38
56	20X31A0557	34
57	20X31A0558	2
58	20X31A0559	36
59	20X31A0560	38
60	21X35A0501	
61	21X35A0502	43
62	21X35A0503	57
63	21X35A0504	33

35	20X31A0536	54
Max Marks		75

Class Average mark	39
Number of students performed above the target	30
Number of successful students	56
Percentage of students scored more than target	54%
Attainment level	**2**

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

FIOT CLASS ATTENDANCE REGISTER LINK

https://drive.google.com/file/d/1BiOIFzbzHb8Qr75xSyo2ZVu40wwNxOtL/view?usp=drive_link