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Table of Contents

Note : Remove “Table of Content” before including in CP Book
Each Course Plan shall be printed and made into a book with cover page
Blooms Level in all sections match with A.2, only if you plan to teach / learn at higher levels

15CS81 :Internet Of Things

A. COURSE INFORMATION

1. Course Overview

Degree:	BE	Program:	IS
Year / Semester :	4/8	Academic Year:	2019-20
CourseTitle:	Internet Of Things	Course Code:	15CS81
Credit / L-T-P:	4/ 4-0-0	SEE Duration:	180 Minutes
Total Contact Hours:	50	SEE Marks:	80Marks
CIA Marks:	15	Assignment	5
Course Plan Author:	Vinay Kumar B C	Sign	Dt:
Checked By:		Sign	Dt:

2. Course Content

Module	Module Content	Teaching Hours	Module Concepts	Blooms Level
1	What is IoT, Genesis of IoT, IoT and Digitization, IoT Impact, Convergence of IT and IoT, IoT Challenges, IoT Network Architecture and Design, Drivers Behind New Network Architectures, Comparing IoT Architectures, A Simplified IoT Architecture,The Core IoT Functional Stack, IoT Data Management and Compute Stack	10	IOT Architecture	L2,L3
2	Smart Objects: The "Things" in IoT, Sensors, Actuators, and Smart Objects, Sensor Networks, Connecting Smart Objects, Communications Criteria, IoT Access Technologies	10	Deploying Smart objects	L2,L3
3	IP as the IoT Network Layer, The Business Case for IP, The need for Optimization, Optimizing IP for IoT, Profiles and Compliances, Application Protocols for IoT, The Transport Layer, IoT Application Transport Methods.	10	Iot protocols	L3
4	Data and Analytics for IoT, An Introduction to Data Analytics for IoT, Machine Learning, Big Data Analytics Tools and Technology, Edge Streaming Analytics,Network Analytics, Securing IoT, A Brief History of OT Security, Common Challenges in OT Security, How IT and OT Security Practices and Systems Vary, Formal Risk Analysis Structures: OCTAVE and FAIR, The Phased Application of Security in an Operational Environment	10	Data Management	L3
5	IoT Physical Devices and Endpoints - Arduino UNO: Introduction to Arduino, Arduino UNO, Installing the Software, Fundamentals of Arduino Programming.oTPhysical Devices and Endpoints - RaspberryPi: Introduction to RaspberryPi, About theRaspberryPi Board: Hardware Layout, Operating Systems on RaspberryPi, Configuring RaspberryPi, Programming RaspberryPi with Python, Wireless Temperature Monitoring System Using Pi, DS18B20 Temperature Sensor, Connecting Raspberry Pi via SSH,Accessing Temperature from DS18B20 sensors, Remote access to RaspberryPi, Smart and Connected Cities, An IoT Strategy for Smarter Cities, Smart City IoT Architecture,Smart City Security Architecture, Smart City Use-Case Examples.	10	Sensor Technologies	L2,L4

3. Course Material

Mod	Details	Available

ule		
1	Text books	
	.1 David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Robert Barton, Jerome Henry,"IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things", 1 st Edition, Pearson Education (Cisco Press Indian Reprint). (ISBN: 978- 9386873743) 2. Srinivasa K G, "Internet of Things",CENGAGE Leaning India, 2017	In Lib
2	Reference books	
	1. Vijay Madisetti and ArshdeepBahga, "Internet of Things (A Hands-on-Approach)", 1 st Edition, VPT, 2014. (ISBN: 978-8173719547) 2. Raj Kamal, "Internet of Things: Architecture and Design Principles", 1 st Edition, McGraw Hill Education, 2017. (ISBN: 978-9352605224)	In dept

4. Course Prerequisites

SNo	Course Code	Course Name	Module / Topic / Description	Sem	Remarks	Blooms Level
1	15CS52	Computer Networks	Network Layer and its protocols	5		L3

Note: If prerequisites are not taught earlier, GAP in curriculum needs to be addressed. Include in Remarks and implement in B.5.

B. OBE PARAMETERS

1. Course Outcomes

#	COs	Teach. Hours	Concept	Instr Method	Assessment Method	Blooms' Level
	Students should be able to					
15cs81.1	Understand the genesis and IOT architecture	10	IOT Architecture	Lecture	Viva Assignment	L2
15cs81.2	Explain different methods of Deploying Smart objects	10	Wireless Sensors	Discuss	Viva ,Discuss Assignment	L3
15cs81.3	Connecting smart objects in Internet	10	Communication of smart objects	PPT	Describe Viva ,Discuss	L3
15cs81.4	Compare various application protocols for IOT	10	IOT Protocols	Discuss	Viva Assignment	L2
15cs81.5	Understand the role of data Management and Security Analyze the different sensing technologies in industry	10	Iot Data Analytics Sensing the real world Objects	Tutorial	Describe Viva ,Discuss	L2
-	**Total**	**50**	-	-		-

Note: Identify a max of 2 Concepts per Module. Write 1 CO per concept.

2. Course Applications

SNo	Application Area	CO	Level
1	Google Self driving car.	CO1	L2
2	Medical Sensors used in smart objects.	CO2	L2
3	Environmental and Chemical Sensors in Network Layer	CO3	L2
4	Wireless Sensor Networks (WSN) Based on IP for Smart Objects	CO4	L3
5	Low Power Wide-Area-Networks (LPWAN)	CO5	L2

Note: Write 1 or 2 applications per CO.

3. Articulation Matrix

(CO – PO MAPPING)

-	Course Outcomes	Program Outcomes												
#	COs	PO1	PO2	PO3	PO4	PO5	PO 6	PO7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	Level
15cs81.1	Understand the genesis and architecture of IOT	√	√	-	-	-	-	-	-	-	√	-	√	L2
15cs81.2	Explain different methods of Deploying smart objects	√	-	√	-	-	-	√	-	-	-	-	-	L2
15cs81.3	Connecting smart objects in Internet	√	√	-	-	√	-	-	-	√	-	-	√	L3
15cs81.4	Compare variousapplication protocols for IOT	√	√	-	√	-	-	-	-	-	-	-	-	L4
15cs81.5	Understand the role of data Management and Security Analyze the different sensing technologies in Industry	√	√	√	-	-	-	-	-	√	-	-	-	L4
AVG														

4. Mapping Justification

Mapping		Justification	Mapping Level
CO	**PO**	**-**	**-**
CO1	PO1	To apply the basic knowledge of architecture of IOT	L2
CO1	PO2	To understand the principles of genesis and architecture of IOT	L2
CO1	PO10	To design the effective presentation in genesis of IOT	L2
CO1	PO12	To recognize the need of genesis of IOT for lifelong learning technologies.	L2
CO2	PO1	To apply the knowledge of engineering fundamentals to deploy smart objects	L2
CO2	PO3	To design the solutions to deploy the smart objects using IOT	L2
CO2	PO7	To demonstrate the knowledge of deploying smart objects and development in it	L2
CO3	PO1	To apply the knowledge of smart objects and connect to Internet	L3
CO3	PO2	To analyze the complex problems that arises in connecting smart objects in Internet	L3
CO3	PO5	To apply the appropriate technique and various technologies used to connect smart objects in Internet	L3
CO3	PO9	To function effectively using individual and team work for different setting in IOT	L3
CO3	PO12	To recognize the need of deploying for technologies change for life long learning.	L3
CO4	PO1	To apply the engineering knowledge for various protocols in IOT	L4
CO4	PO2	To formulate different protocols used in IOT	L4
CO4	PO4	Using the research based for various application for IOT	L4
CO5	PO1	To apply the basic knowledge of data management in IOT To apply the knowledge of sensor in sensing of real world objects using various devices	L4
CO5	PO2	To Identify the problems that arises the security issues in IOT o analyze the problems arising in wireless sensor network.	L4
CO5	PO3	To design the security issues of the connectivity data in IOT	L4
CO5	PO9	To function effectively as individual or team work in security of IOT To Recognize the need of the wsn used in IOT for life long learning in continual change of Technology	L4

Note: Write justification for each CO-PO mapping.

5. Curricular Gap and Content

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					

Note: Write Gap topics from A.4 and add others also.

6. Content Beyond Syllabus

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Note: Anything not covered above is included here.

C. COURSE ASSESSMENT

1. Course Coverage

Module #	Title	Teaching Hours	No. of question in Exam						CO	Levels
			CIA-1	CIA-2	CIA-3	Asg	Extra Asg	SEE		
1	Introduction to IOT and its evolutions	10	2	-	-	1	1	4	CO1	L3
2	Smart Objects and its Connectivity	10	2	-	-	1	1	4	CO2,CO3	L2
3	IOT in Network Layer and its Protocols	10	-	2	-	1	1	3	CO4	L2,
4	Data Analytics and Security In IOT	10	-	2	-	1	1	4	CO5	L4
5	IOT Physical Devices and Its Applications	10	-	-	4	1	1	4	CO5	L2
-	**Total**	**50**	**4**	**4**	**4**	**5**	**5**	**19**	**-**	**-**

Note: Distinct assignment for each student. 1 Assignment per chapter per student. 1 seminar per test per student.

2. Continuous Internal Assessment (CIA)

Evaluation	Weightage in Marks	CO	Levels
CIA Exam – 1	30	CO1, CO2,	L2, l3
CIA Exam – 2	30	CO3,CO4	L3
CIA Exam – 3	30	CO5,	L3, L4
Assignment - 1	05	CO1, CO2,	L2, l3
Assignment - 2	05	CO3,CO4	L3

Assignment - 3	05	CO5	L3, L4
Seminar - 1	-	-	-
Seminar - 2	-	-	-
Seminar - 3	-	-	-
Other Activities – define – Slip test	-	-	-
Final CIA Marks	**30**	**-**	**-**

Note : Blooms Level in last column shall match with A.2 above.

D1. TEACHING PLAN - 1

Module - 1

Title:	Introduction to IOT and its evolutions	Appr Time:	10Hrs
a	***Course Outcomes***	-	**Blooms**
-		-	**Level**
1	Understand the genesis and impact of IOT Application	CO1	L2
2	Understand IOT Architectures	CO2	L2
b	***Course Schedule***	-	-
Class No	**Module ContentCovered**	**CO**	**Level**
1	What is IoT	CO1	L2
2	Genesis of IoT	CO1	L2
3	IoT and Digitization, IoT Impact	CO1	L2
4	Convergence of IT and IoT, IoT Challenges	CO1	L2
5	IoT Network Architecture and design	CO1	L2
6	Drivers Behind New Network Architectures	CO1	L2
7	Comparing IoT Architectures	CO1	L2
8	A Simplified IoT Architecture,	CO1	L2
9	The Core IoT Functional Stack	CO1	L2
10	IoT Data Management and Compute Stack	CO1	L2
c	**Application Areas**	**CO**	**Level**
1	Google Self driving car.	CO1	L2
d	**Review Questions**	-	-
1	What is an IOT?	CO1	L2
2	Explain evolutionary pharses of internet?	CO1	L2
3	What are the impact faced by IOT?	CO1	L2
4	What are the challenges of IOT?	CO1	L2
5	Explain different IOT Architectures?	CO1	L2

Module - 2

Title:	Smart Objects	Appr Time:	10Hrs
a	***Course Outcomes***	-	**Blooms**
-		-	**Level**
1	Different methods of Deploying smart objects	CO2	L3
2	Connecting smart objects in Internet	CO3	L3
b	***Course Schedule***	-	-
Class No	**Module ContentCovered**	**CO**	**Level**
17	Smart Objects: The “Things” in IoT,	CO2	L3
18	Sensors	CO2	L3
19	Actuators	CO2	L3
20	Smart Objects,	CO2	L3

21	Sensor Networks	CO3	L3
22	Connecting Smart Objects	CO3	L3
23	Communications Criteria	CO3	L3
24	IoT Access Technologies.	CO3	L3
c	**Application Areas**	**CO**	**Level**
1	Smart cities	CO3	L3
d	**Review Questions**	-	-
12	Explain different types of sensor?	CO2	L3
13	What are the different characteristics of smart objects?	CO2	L3
14	Explain about MEMS?	CO3	L3
15	What are the pros&cons of wireless based solutions?	CO3	L3
16	Explain different typologies?	CO3	L3
17	Explain the protocols stacks which are utilized in IEEE 802.15.4?	CO3	L3
e	**Experiences**	-	-

E1. CIA EXAM – 1

a. Model Question Paper - 1

CrsCode:	15CS81	Sem:	VIII	Marks:	30	Time:	75minutes		
Course:	Internet of Things								
-	**-**	**Note: Answer any 3questions, each carry equal marks.**					**Marks**	**CO**	**Level**
		MODULE-1(15 marks)							
1	a	What are the impact faced by IOT?					15	CO1	L2
	b	What are the challenges of IOT?						CO1	L2
2	a	Explain different IOT Architectures?					15	CO2	L2
	b	Explain evolutionary phrasesof Internet?						CO2	L2
3	a	What are the different characteristics of smart objects?					15	CO3	L2
	b	Explain the protocols stacks which are utilized in IEEE 802.15.4?						CO3	L2
4	a	What are the pros&cons of wireless based solutions?					15	CO3	L2
	b	Explain about MEMS?						CO2	L2

b. Assignment -1

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions							
CrsCode:	15CS81	Sem:	VIII	Marks:	30	Time:	75 minutes
Course:	Internet of Things						

Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.

SNo	USN	Assignment Description	Marks	CO	Level
1		What are the impact faced by IOT?	5	CO1	L2
2		What are the challenges of IOT?	5	CO2	L3
3		Explain different IOT Architectures?	5	CO2	L3
4		Explain evolutionary pharses of Internet?	5	CO1	L3
5		What are the different characteristics of smart objects?	5	CO1	L3
6		Explain the protocols stacks which are utilized in IEEE 802.15.4?	5	CO2	L3
7		What are the pros&cons of wireless based solutions?	5	CO2	L3
8		Explain about MEMS?	5	CO1	L3
9		With a neat diagram, explain about the elements of the oneM2M IoT architecture?	5	CO1	L3

10		What are the characteristics of fog computing?	5	CO1	L3
11		Explainthe hight level zigbee protocol stack?	5	CO2	L3
12		Explain about the MAC Layer?	5	CO2	L3
13		Explain about LoRa WAN Architecture?	5	CO2	l3

D2. TEACHING PLAN - 2

Module – 3

Title:	IoT Network Layer	Appr Time:	10Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Connect smart objects to Internet	CO4	L3
b	***Course Schedule***		
Class No	**Module ContentCovered**	**CO4**	**Level**
1	IP as the IoT Network Layer,	CO4	L3
2	The Business Case for IP	CO4	L3
3	The need for Optimization	CO4	L3
4	Optimizing IP for IoT	CO4	L3
5	Profiles and Compliances	CO4	L3
6	Application Protocols for IoT	CO4	L3
7	Transport Layer, IoT	CO4	L3
8	IoT Application Transport Methods.	CO4	L3
c	**Application Areas**		**Level**
1	Transport Monitoring	CO4	L3
d	**Review Questions**	-	-
1	What are the advantages of internet protocol?	CO4	L3
2	Explain the Comparison of an iot protocol stack utilizing 6lowpan &IP Protocol stack?	CO4	L3
3	What are the different mechanism which defines the schedule management?	CO4	L3
4	Comparison b/n CO AP and MQTP?	CO4	L3
5	What are the fields in CO AP Message	CO4	L3
6	How IOT Constrained nodes can be classified?	CO4	L3
7	What are the main factors applicable to IPv4 and IPv6 in IOT?	CO4	L3
8	What is fragmentation?	CO4	L3
9	Compare b/n mesh under v/s mesh over routing?	CO4	L3
10	Compare DAG and DODAG?	CO4	L3
e	**Experiences**	-	-

Module – 4

Title:	Data and Analytics for IoT,	Appr Time:	10Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Understand the role of data Management and Security	CO5	L4
b	***Course Schedule***		
Class No	**Module ContentCovered**	**CO5**	**Level**
1	Data and Analytics for IoT,	CO5	L4
2	An Introduction to Data Analytics for IoT, Machine Learning	CO5	L4
3	Big Data Analytics Tools and Technology, Edge Streaming Analytics	CO5	L4

4	Network Analytics, Securing IoT, A Brief History of OT Security, Common Challenges in OT Security	CO5	L4
5	How IT and OT Security Practices and Systems Vary, Formal Risk Analysis Structures: OCTAVE and FAIR	CO5	L4
6	The Phased Application of Security in an Operational Environment	CO5	L4
c	**Application Areas**	**CO**	**Level**
1.	Smart Parking Application	CO5	l4
d	**Review Questions**		
1	What are the challenges of IOT data Analytic?	CO5	L4
2	What is Machine Learning?	CO5	L4
3	Explain about supervised &unsupervised learning?	CO5	L4
4	Explain about MPP Shared-Nothing Architecture?	CO5	L4
5	What is meant by network analytics	CO5	L4
6	List and explain insecure operational protocols?	CO5	L4
7	Explainthe formal risk analysis structure?	CO5	L4
8	Compare b/n structured and unstructured data	CO5	L4
9	What is Machine Learning?	CO5	L4
10	What are the applicationsof ML for IOT?	CO5	L4
11	Explain distributed hadoop cluster?	CO5	L4
12	Explain about the Lambda Architecture?	CO5	L4
13	Compare big data and edge Analytics?	CO5	L4
14	What are the main components of FNF?	CO5	L4
e	**Experiences**	-	

E2. CIA EXAM – 2

a. Model Question Paper - 2

CrsCode:	15CS81	Sem:	VIII	Marks:	30	Time:	75minutes
Course:	Internet of Things						

-	-	**Note: Answer any 2 questions, each carry equal marks.**	**Marks**	**CO**	**Level**
		Module-1(15 Marks)	**15**		
1	a	Explain the Comparison of an iot protocol stack utilizing 6lowpan &IP Protocol stack?		CO4	L3
	b	Comparison b/n CO AP and MQTP?		CO4	L3
		OR			
2	a	What are the advantages of internet protocol?		CO5	L3
	b	What are the different mechanism which defines the schedule management?			L3
		MODULE-2(15 marks)	**15**		
3	a	Explain about MPP Shared-Nothing Architecture?		CO5	L3
	b	Explainthe formal risk analysis structure?		CO4	L3
		OR			
4	a	List and explain insecure operational protocols?		CO5	L3
	b	Explain about supervised &unsupervised learning?		CO4	L3

b. Assignment – 2

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions

CrsCode:	15CS81	Sem:	VIII	Marks:	30	Time:	75 minutes
Course:	Internet of Things						

Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.

SNo	USN	Assignment Description	Marks	CO	Level
1		What are the advantages of Internetprotocol?	5	CO4	L2
2		Explain the Comparison of an iot protocol stack utilizing 6lowpan &IP	5	CO4	L3

		Protocol stack?			
3		What are the different mechanism which defines the schedule management?	5	CO4	L4
4		Comparison b/n CO AP and MQTP?	5	CO4	L3
5		What are the fields in CO AP Message	5	CO5	L4
6		What is Machine Learning?	5	CO5	L2
7		Explain about supervised &unsupervised learning?	5	CO4	L3
8		Explain about MPP Shared-Nothing Architecture?	5	CO5	L4
9		What is meant by network analytics	5	CO5	L3
10		List and explain insecure operational protocols?	5	CO5	L3
11		Explainthe formal risk analysis structure?	5	CO3	L3
12		Explain about the security priorities?	5	CO4	L3
13		What are the characteristics of OT network impacting security?	5	CO4	L4
14		How IT and OT security practices and systems vary?	5	CO5	L2
15		Explain about the International Electro technical Commission (IEC) protocols?	5	CO5	L3
16		Explain about the Distributed Network Protocol?	5	CO4	L4
17		List the benefits of flow analysis?	5	CO5	L3
18		Which are the functions needs to be performed by APU?	5	CO5	L3
19		Write a short on Apache Spark?	5	CO5	L3
20		Explain about the Hadoop ecosystem?	5	CO3	L3

D3. TEACHING PLAN - 3

Module – 5

Title:	IoT Physical Devices and Endpoint	Appr Time:	10Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Analyze the different sensing technologies in industry	CO6	L4
b	***Course Schedule***		
Class No	**Module ContentCovered**	**CO**	**Level**
1.	IoT Physical Devices and Endpoints - Arduino UNO: Introduction to Arduino, Arduino UNO	CO6	L4
2.	Installing the Software, Fundamentals of Arduino Programming.	CO6	L4
3.	IOT Physical Devices and Endpoints - Raspberry Pi: Introduction to Raspberry Pi	CO6	L4
4	Raspberry Pi Board: Hardware Layout, Operating Systems on Raspberry Pi, Configuring Raspberry Pi	CO6	L4
5	Programming Raspberry Piwith Python	CO6	L4
6.	Wireless Temperature Monitoring System Using Pi, DS18B20 Temperature Sensor, Connecting Raspberry Pi via SSH,	CO6	L4
7	ocessing Temperature from DS18B20 sensors, Remote access to Raspberry Pi,	CO6	L4
8	Smart and Connected Cities, An IoT Strategy for Smarter Cities, Smart City IoT Architecture,	CO6	L4
9	Smart City Security Architecture, Smart City Use-Case Examples.	CO6	L4
c	**Application Areas**	**CO**	**Level**
2	Home Automation	CO6	L4
d	**Review Questions**		-
1	Explain the features of Arduino?	CO6	L4
2	Explain the RaspberryPi Model B and its GPIO?	CO6	L4
3	Explain the fundamentals of Ardunio Programming?	CO6	L4
4	Explain RaspberryPI Operating System?	CO6	L4

5	List the differentcommands used in Raspberry PI?	CO6	L4
e	**Experiences**	-	-

E3. CIA EXAM – 3

a. Model Question Paper - 3

CrsCode:	15CS81	Sem:	VIII	Marks:	30	Time:	75minutes		
Course:	Internet of Things								
-	**-**	**Note: Answer any 2 questions, each carry equal marks.**					**Marks**	**CO**	**Level**
		Module-1(15 Marks)					**15**		
1	a	Explain the features of Arduino?						CO6	L3
	b	Explain the RaspberryPi2 Model B and its GPIO?						CO6	L3
2	a	Explain RaspberryPI Operating System?						CO6	L4
	b	List the differentcommands used in Raspberry PI?						CO6	L4
		Module-2(15 Marks)							
3	a	List the control flow using python?					15	CO6	L2
	b	Write a program to interface LED switch and Potentiometer?						CO6	L3
4	a	Explain operating system Setup on Raspberry PiWith Python?					15	CO6	L3

b. Assignment – 3

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions									
CrsCode:	15CS81	Sem:	VIII	Marks:	5 / 10	Time:	75 minutes		
Course:	Internet of Things								
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.									
SNo	**USN**	**Assignment Description**					**Marks**	**CO**	**Level**
1		Explain the features of Arduino?					5	CO6	L4
2		Explain the Raspbery Pi2 Model B and its GPIO?					5	CO6	L4
3		Explain Raspbery PI Operating System?					5	CO6	L4
4		List the diffrerent commands used in Raspberry PI?					5	CO6	L4
5		List the control flow using python?					5	CO6	L4
6		Write a program to interface LED switch and Potentiometre?					5	CO6	L4
7		Explain operating system Setup on RaspberryPi With Python?					5	CO6	L4
8		Write the interface sensor to arduino?					5	CO6	L4
9		Explain Raspberry Pi Interface?					5	CO6	L4
10		What are the steps to install Arduino IDE Software?					5	CO6	L4

F. EXAM PREPARATION

1. University Model Question Paper

Course:	Internet of Things					Month / Year		
CrsCode:	CS501PC	Sem:	VIII	Marks:	80	Time:	180 minutes	
-	**Note**	Answer allFIVE full questions. All questions carry equal marks.				**Marks**	**CO**	**Level**

2. SEE Important Questions

Course:		Internet of Things					Month / Year	May /2018	
CrsCode:		15cs81	Sem:	8	Marks:	80	Time:	180 minutes	
	Note	Answer allFIVE full questions. All questions carry equal marks.					-	-	
1		What is an IOT?					CO1	L2	
2		Explain evolutionary pharses of internet?					CO1	L2	
3		What are the impact faced by IOT?					CO1	L2	
4		What are the challenges of IOT?					CO1	L2	
5		Explain different IOT Architectures?					CO1	L2	
6		What are the impact faced by IOT?					CO1	L2	
7		What are the challenges of IOT?					CO1	L2	
8		Explain different IOT Architectures?					CO2	L2	
9		Explain evolutionary phrasesof Internet?					CO2	L2	
10		What are the different characteristics of smart objects?					CO3	L2	
11		Explain the protocols stacks which are utilized in IEEE 802.15.4?					CO3	L2	
12		What are the pros&cons of wireless based solutions?					CO3	L2	
13		Explain about MEMS?					CO2	L2	