(08 Marks)

Eighth Semester B.E. Degree Examination, June/July 2019 Internet of Things Technology

Time: 3 hrs. Max. Marks: 80

Note: Answer FIVE full questions, choosing one full question from each module.

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		Module-1	
1	a.	What is IOT? Explain in detail on Genesis of IOT.	(08 Marks)
	b.	What does IOT and digitaization mean? Elaborate on this concept.	(04 Marks)
	c.	Write a short note on "IOT impact in Real World".	(04 Marks)
			` ,
		OR	
2	a.	Discuss IOT challenges.	(08 Marks)
	b.	With a neat diagram, explain architecture of IOT.	(04 Marks)
	C.	Explain Core IOT functional stack.	(04 Marks)
			,
		Module-2	
3	a.	List and explain different types of sensors.	(08 Marks)
	b.	Elaborate on small physical objects and small virtual objects.	(04 Marks)
	c.	Explain "IOT Access Technologies".	(04 Marks)
			,
		OR	
4	a.	Briefly explain protocol stack utilization IEEE 802.15.4.	(08 Marks)
	b.	What is SANET? Explain some advantages and disadvantages that a wireless bas	
		offers.	(08 Marks)
		Module-3	
5	a.	Explain working of IP as the IOT network layer.	(08 Marks)
	b .	Write note on Busines case for IP.	(04 Marks)
	c.	Discuss need for optimization.	(04 Marks)
		OR	
6	a.	Describe application protocols for IOT.	(08 Marks)
	b.	Discuss the various methods used in IOT application transport.	(08 Marks)
		Module-4	
7	a.	What do you mean by data and analytics for IOT? Explain.	(04 Marks)
	b.	Discuss Bigdata analyties tools and technology.	(04 Marks)
	C.	With a case study relate the concept of securing IOT.	(08 Marks)
			, ,
		OR	

a. Explain in detail how IT and OT security practices and systems vary in real time. (08 Marks)

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Module-5

9 a. Give a brief note on Arduino UNO.

(04 Marks)

b. With a neat diagram, explain Raspberry P_i board.

(04 Marks)

c. With a neat diagram, explain wireless temperature monitoring system using Raspberry Pi.

(08 Marks)

OR

10 a. Explain in detail smart city IOT architecture.

(08 Marks)

b. With the case study explain smart and connected cities using Raspberry Pi.

(08 Marks)

GBCS SCHEME

USN 15CS81

Eighth Semester B.E. Degree Examination, Dec.2019/Jan.2020 Internet of Things Technology

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

a. What is IOT? Explain evolutionary phases of the internet.
b. Explain Access Network sublayer with a neat diagram.
c. What are the elements of one M2M IOT architecture? Explain.
(06 Marks)
(06 Marks)

OR

a. Explain the functionality of IOT network management sub layer.

b. Describe IOT World Forum (IOTWF) Standardized architecture.

c. Compare and contrast IT and OT.

(05 Marks)

(07 Marks)

(04 Marks)

Module-2

With a neat diagram, explain how actuators and sensors interact with physical world.
 Classify actuators based on energy type.
 (08 Marks)

 b. List out the limitations of the smart objects in WSNs and explain the data aggregation in WSN with a neat diagram.

OR

a. What is Zigbee? Explain 802.15.4 physical layer, MAC layer, and security.
 b. Explain LoRaWAN standard and alliance MAC layer and security.
 (08 Marks)

Module-3

5 a. With a neat diagram, explain 61 OWPAN protocol header comparison and fragmentation.

b. List and explain the key advantages of internet provocol. (08 Marks)
(04 Marks)

c. Explain RPL encryption and authentication on constraint nodes. (04 Marks)

OR

 a. Explain tunneling legacy SCADA over IP networks ad SCADA protocol translation with a near diagram.

(08 Marks)

b. Describe MQTT framework and message format in detail. (08 Marks)

Module-4

a. Explain the elements of Hadoop with a neat diagram.

b. Explain neural network in machine learning with a detailed example.

c. Describe the components of FNF.

(05 Marks)

(04 Marks)

OR

8 a. Explain Formal Risk Analysis Structures. (08 Marks)

Explain the Purdue model for control hierarchy and OT network characteristics. (08 Marks)

Important Note: 1. On completing your answers, compulsority draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written cg. 42+8 = 50, will be treated as malpractice.

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Module-5

- 9 a. Explain the following with respect to Arduino programming.
 - i) Structure
 - ii) Functions
 - iii) Variables
 - iv) Flow control statements
 - v) Data type
 - vi) Constants.
 - b. Explain Raspberry Pi learning board.

(08 Marks)

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(08 Marks)

OR

- 10 a. Write a pythan program on Raspberry Pi to blink an LED.
 - b. Explain Smart city security architecture.
 - c. Write a short note on:
 - i) IOT challenges
 - ii) Backhaul Technologies.

(06 Marks)

(06 Marks)

(04 Marks)

2 of 2



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Eighth Semester B.E. Degree Examination, June/July 2019 Internet of Things Technology

Time: 3 hrs. Max. Marks: 80

Note: Answer FIVE full questions, choosing one full question from each module.

Module-1

1	a.	What is IOT? Explain in detail on Genesis of IOT.	(08 Marks)
	b.	What does IOT and digitaization mean? Elaborate on this concept.	(04 Marks)
	C.	Write a short note on "IOT impact in Real World".	(04 Marks)

OR

2	a.	Discuss IOT challenges.	(08 Marks)
		With a neat diagram, explain architecture of IOT.	(04 Marks)
		Explain Core IOT functional stack.	(04 Marks)

Module-2

3	a.	List and explain different types of sensors.	(08 Marks)	
	b.	Elaborate on small physical objects and small virtual objects.	(04 Marks)	
		Evnlain "IOT Access Technologies"	(04 Marks)	

OR

4	a.	Briefly explain protocol stack utilization, IEEE 802.15.4.	(08 Marks)
	b.	What is SANET? Explain some advantages and disadvantages that	a wireless based solution
		offers	(08 Marks)

Module-3

5	a.	Explain working of IP as the IOT network layer.	(08 Marks)
	b.	Write note on Busines case for IP.	(04 Marks)
		Discuss need for optimization.	(04 Marks)

OR

6	a.	Describe application protocols for IOT.	(08 Marks)
	b.	Discuss the various methods used in IOT application transport.	(08 Marks)

Module-4

7	a.	What do you mean by data and analytics for 101? Explain.	(04 Marks)
	b.	Discuss Bigdata analyties tools and technology.	(04 Marks)
	C.	With a case study relate the concept of securing IOT.	(08 Marks)

OR

8 a.	Explain in detail how IT and OT security practices and systems vary in real time.	(08 Marks)
b.	Discuss OCTAVE and FAIR formal risk analysis.	(08 Marks)

1 of 2

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Module-5

9 a. Give a brief note on Arduino UNO.

(04 Marks)

b. With a neat diagram, explain Raspberry Pi board.

- (04 Marks)
- c. With a neat diagram, explain wireless temperature monitoring system using Raspberry Pi.

(08 Marks)

OR

10 a. Explain in detail smart city IOT architecture.

- (08 Marks)
- b. With the case study explain smart and connected cities using Raspberry Pi. (08 Marks)

2 of 2

CBCS SCHEME

15CS81 USN

Eighth Semester B.E. Degree Examination, November 2020 **Internet of Things**

Max. Marks: 80 Time 3 hrs.

			Note: Answer any FIVE full questions irrespective of modules.	
į			Module-1	. 4
	1	a.	Define to 1. Explain the disterent everally process	(06 Marks)
		b.	Explain the concept of Intersection Movement Assist (IMA) with graphical represe	ntation.
2				(05 Marks) (05 Marks)
		C.	What are the different challenges of IoT?	(05 istarks)
	2	a.	Explain with diagram the one M2M IoT standardized architecture.	(08 Marks)
	-	b.		(08 Marks)
			Module-2	
	3	a.		(05 Marks)
	3	b.		(05 Marks)
		c.	Define Smart Cojects. Explain to consucre	(06 Marks)
	4	9	What are Constrained Devices and constrained node networks? Classify them.	(06 Marks)
	7	a. b.	Explain Zigbee protocol stack using IEEE 802.15.4.	(10 Marks)
		o.	Emplain Eigere presser and a series of the s	
			Module-3	
3	5	a.	Explain in detail the old william	(10 Marks)
		b.	Explain the different schedule management and packet forwarding models of 6TiS	(06 Marks)
				(00 1.111.113)
			Explain the raw socket tunneling of SCADA using different scenarios.	(06 Marks)
33	6	a. b.	What is COAP? Draw COAP Message Format. Explain its fields.	(06 Marks)
		c.	Compare between COAP and MQTT.	(04 Marks)
		0.		7
			Module-4	><
	7	a.	Explain in detail the core functions of edge analytics with necessary diagrams.	(08 Marks)
		b.	Explain the different components of Flexible Net flow Architecture (FNF).	(08 Marks)
	8	a.	Explain the different steps and phases of OCTAVE Allegro methodology.	(08 Marks)
		b.	Explain Secured Network Infrastructure by using process control hierarchy model.	(08 Marks)
			Module-5	(00 Manks)
	9	a.	Explain the different pins/parts of Arduino Uno Board.	(08 Marks) (08 Marks)
		b.	Write a program to record the current room temperature using Raspberry pi.	(00 Marks)
	1			
	10	a	Explain the different layers of IoT Smart city layered architecture.	(08 Marks)
		b.	Explain Smart parking architecture with advantages and disadvantages.	(08 Marks)
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