U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

December 2019 / January 2020 Semester End Main Examinations

Programme**: B.E.** Semester : **V**
Branch **: Computer Science and Engineering** Duration: **3 hrs.**
Course Code: **16CS5DCIOT** Max Marks: **100**
Course: **Internet of Things** Date: **21.12.2019**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a)	Define Internet of Things (IoT).What are the characteristics of IoT? Describe a typical IoT device with a neat diagram.		**10**
	b)	Explain in detail the REST-based Communication API's.		**10**

UNIT – II

2	a)	Design Smart Motion Detection System (circuit design and interfacing program).		**08**
	b)	Write a code to read the information present on the RFID tag and print it in serial monitor.		**08**
	c)	Describe analogWrite() function in Arduino programming and discuss how digital Read/Write pins behave like analog Write pins.		**04**

OR

3	a)	Analyze the requirements to design a system that automatically switches on the fan by sensing the ambient atmosphere.		**06**
	b)	Write a Program to upload the temperature from Arduino client to Data.sparkfun.com cloud server using Wifi module.		**08**
	c)	Explain in brief about Bluetooth communication.		**06**

UNIT - III

4	a)	Explain how CoAP protocol differ from HTTP protocol and discuss how reliability is achieved in CoAP.		**10**
	b)	With a neat diagram, explain in detail 6LoWPAN Mesh Header Structure.		**10**

OR

5	a)	Define IoTivity and explain the services provided by IoTivity.		**04**
	b)	With a sequence diagram, explain the steps involved in resource registration operation on an IoTivity platform.		**08**

	c)	Describe the different layers of IoT Reference Model with its functionality.	**08**

UNIT - IV

6	**a)**	Write a program in python to implement Amazon Kinesis Stream.	**08**
	b)	Describe the architecture of Django application.	**06**
	c)	Write a program in python to implement Amazon RDS.	**06**

UNIT – V

7	**a)**	Explain the IoT Communication Models.	**05**
	b)	Analyze the IoT level for designing Smart irrigation system.	**05**
	c)	With an example explain the RPL DODAG building process	**10**

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