U.S.N.										

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

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E. **Semester: V**
Branch: Computer Science and Engineering **Duration: 3 hrs.**
Course Code: 20CS5PEIOT **Max Marks: 100**
Course: Internet of Things **Date: 03.03.2023**

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

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - I

1	a)	Define IoT and explain the characteristics of an IoT system.	**8**
	b)	Summarize any two-communications models used in IoT.	**7**
	c)	Analyze the IoT level for designing smart irrigation system.	**5**

UNIT - II

2	a)	Analyze and discuss the performance parameters that must be addressed before choosing an actuator for specific needs in IoT applications.	**8**
	b)	Demonstrate the interfacing of an ultrasonic sensor with Arduino to get the distance from a surface in centimeters.	**12**

OR

3	a)	Analyze analogWrite() function in Arduino and implement analogWrite() function in fading an LED off.	**10**
	b)	Analyze and discuss the parameters to be considered while selecting sensors for an IoT system.	**10**

UNIT - III

4	a)	Describe IoT reference model.	**10**
	b)	Design and implement a smart IoT system to control the home appliances using Bluetooth technology.	**10**

OR

5	a)	Describe CoAP protocol and find out the differences between CoAP and MQTT protocol.	**10**
	b)	Design and implement an intelligent IoT system that let us read a tag and check if it is the right one, then switch on the green LED otherwise switch on the red LED.	**10**

UNIT - IV

6	a)	Write a program to implement WAMP Publisher and WAMP Subscriber using AutoBahn framework.	**10**
	b)	Discuss the device discovery functionality in Intel IOTivitiy.	**10**

UNIT - V

7	a)	Write a program for launching and stopping an EC2 instance in Amazon Web Services.	**10**
	b)	Write a program for creating and writing in to Amazon SQS queue.	**10**

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