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BMS College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July / August 2018 Supplementary Examinations

Course: Internet of Things
Course Code: 16CS5DCIOT

Duration: 3 hrs
Max Marks: 100
Date:03.08.2018

Instructions: **Answer any FIVE full questions, choosing one from each Unit.**

UNIT 1

1.	a)	Explain the characteristics of IOT systems.	05
	b)	Compare microprocessor and microcontroller based systems.	05
	c)	Show that weather monitoring system is Level 6 IOT system.	10

UNIT 2

2.	a)	Design a sprinkler system based on the moisture content of the soil.	10
	b)	Analyse how ultrasonic sensor can be used in a reverse parking system?	06
	c)	Write a program to read temperature from LM35 and print it in the serial monitor.	04

OR

3.	a)	Design a building access system using RFID.	10
	b)	Build a Configuration of two ESP8266 modules as access point and station respectively using appropriate commands.	10

UNIT 3

4.	a)	With a neat diagram describe the IOT reference architecture model.	10
	b)	Evaluate the placement of fog computing layer before the data accumulation layer in IOT reference architecture model.	10

OR

5.	a)	Infer that the CoAP protocol is suitable for IOT applications over HTTP.	10
	b)	Discuss in detail how a resource state can be queried in IOTivity?	10

UNIT 4

6.	a)	Justify how Xively Cloud provides Platform as a Service for IOT solutions?	10
	b)	With a neat diagram explain the Publish-Subscribe messaging with WAMP-AutoBahn.	10

UNIT 5

7. a) Design an IOT system which controls the servo motor rotation using Bluetooth . The Bluetooth module upon receiving command '1' should rotate servo motor to 10 degrees and should rotate servo motor to 120 degrees upon receiving command '2' from the android app. Also explain the advantage of using software serial library in the program. 10

   b) Design circuit and write code to control LED connected to Arduino board through message received through GSM module. For example, when "SWITCH ON" is received, LED should glow and vice versa. 10

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