Department of Computer Science & Engineering   **Academic Year: 2020-21 (EVEN SEM)**
Program: B.E (Computer Science & Engineering)   **Semester:** VI

IA Test – II

Course Title: Embedded Systems and IoT   **Code:** 18CS63
Max. Marks: 25 (**Part B: 25 Marks**)   **Duration:** 1 Hr. 15 Mins.   **Date:** 08/06/2021

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Instructions: 1.   Part B: Answer any five full questions.
2.   Assume any missing data suitably.
3.

Q. No.	PART B	[L]	[CO]	[PO]	[M]
1.	Develop an 8051 C program to toggle only pin P1.5 continuously every 250ms. Use Timer 0, mode 2 (8-bit auto-reload) to create the delay. Assume XTAL= 11.0592 MHz	3	2	2	5
2.	Assume that a 1-Hz external clock is being fed into pin T0 (P3.4). Develop an 8051 'C' program for Counter 0 in Mode 1 (16-bit) to count the pulses and display the state of the TH0 and TL0 registers on P2 and P1, respectively.	3	2	2	5
3.	Develop an 8051 'C' program to transfer the message "CSE" serially at 9600 baud, 8-bit data, and 1 stop bit. Do this continuously. Assume XTAL=11.0592 MHz	3	2	2	5
4.	Interface DAC 0800 with 8051 Microcontroller and develop an Embedded 'C' program to generate the rectangular waveform with 65% duty cycle on P0. Assume XTAL= 11.0592 MHz and T=100ms.	3	3	2	5
5.	Define IoT. List and explain the characteristics of IoT.	1,2	4	5	5

6.	Explain the following communication models of IoT with a neat block diagram.
	   i. Request Response
	   ii. Publish Subscribe
		2	4	5	5

7.	Explain the IoT deployment level-2 with a neat diagram.	2	4	5	5