**KLS Gogte Institute of Technology, Belagavi**

**Department of Computer Science & Engineering Academic Year: 2020-21 (EVEN SEM)**

**Program: B.E (Computer Science & Engineering) Semester:** VI

**IA Test – I**

**Course Title:** Embedded Systems and IoT **Code:** 18CS63

**Max. Marks:** 25 (**Part B: 25 Marks) Duration:** 1 Hr. 15 Mins.  **Date:** 01/06/2021

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

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| **Q. No.** | **PART B** | **[L ]** | **[CO]** | **[PO]** | **[M]** |
|  | Define Embedded System. List and explain the characteristics of Embedded Computing Applications. | **1,2** | **1** | **1** | **5** |
|  | Explain with a neat diagram the sample requirement form. | **2** | **1** | **1** | **5** |
|  | Calculate the machine cycle frequency and time period for the XTAL frequency given below:  a) 11.0592 MHz  b) 22 MHz | **3** | **2** | **1,2** | **5** |
|  | Develop an 8051 ‘C’ program to toggle bits of port P1continuously with a delay of 250ms. | **3** | **2** | **1,2** | **5** |
|  | Write an 8051 C program to toggle all the bits of P0 and P2 continuously with a 100ms delay. Use the inverting and Ex-OR operators, respectively. | **3** | **2** | **1,2** | **5** |
|  | A door sensor is connected to the P1.1 pin, and a buzzer is connected to P1.7. Develop an 8051 ‘C’ program to monitor the door sensor, and when it opens, sound the buzzer. You can sound the buzzer by sending a square wave of a few hundred Hz. | **3** | **2** | **1,2** | **5** |
|  | Develop an 8051 ‘C’ program to convert packed BCD 0x47 to ASCII and display the bytes on P1 and P2. | **3** | **2** | **1,2** | **5** |