Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14EC2015** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MICROCONTROLLER AND ITS APPLICATIONS** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | With a neat block diagram, explain each section in the architecture of 8051. | CO1 | 12 |
| b. | Construct the interface of 16KB external memory to 8051 microcontroller and tabulate the address mapping. | CO2 | 8 |
| **(OR)** | | | | |
| 2. | a. | Explain the arithmetic and data transfer instructions in 8051. | CO1 | 10 |
| b. | What are the addressing modes used in microcontroller 8051? | CO1 | 5 |
| c. | Write a program to find factorial of a number in assembly language. | CO3 | 5 |
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| 3. | a. | Give the significane of port 0 in 8051. Explain the difference between ports and bus. | CO1 | 6 |
| b. | What are the various modes of timer of 8051? Explain each mode in detail. | CO1 | 14 |
| **(OR)** | | | | |
| 4. | a. | How interrupts are serviced and prioritized in 8051? | CO1 | 10 |
| b. | Explain the operating modes of serial communication in 8051. | CO1 | 10 |
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| 5. |  | With a neat sketch, explain the architecture of PIC. | CO1 | 20 |
| **(OR)** | | | | |
| 6. | a. | Discuss the use of timers and various modes in PIC. | CO1 | 12 |
| b. | What are the addressing modes supported by PIC controller ? | CO1 | 8 |
|  |  |  |  |  |
| 7. | a. | Explain the working of I2C interface in PIC. | CO2 | 10 |
| b. | Explain the use of Serial Peripheral Interface bus in PIC. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | How ADC is interfaced with PIC microcontroller? | CO2 | 10 |
| b. | List out the significance of UART in PIC. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | With a neat flow chart and block diagram, explain the steps involved in interfacing a LED and switch with 8051 controller. | CO2 | 10 |
| b. | Interface a temperature sensor LM35 with controller and display the value of it on LCD. | CO2 | 10 |