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



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

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| **Code :** | **17EC2008** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MICROPROCESSOR AND MICROCONTROLLER** | **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. | Compare different types of busses in a microprocessor and mention their functionality in detail. | CO1 | 10 |
| b. | Mention the two different ways the microprocessor can be interfaced with external devices. Compare and contrast both the methodology. | CO1 | 10 |
| (OR) | | | | |
| 2. |  | Draw a neat block diagram of a Microprocessor and Microcontroller and explain the key differences in them. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Draw the architecture of 8051µc neatly and explain its operation in detail. | CO2 | 20 |
| (OR) | | | | |
| 4. | a. | With a neat diagram represent the interfacing of LED and switch with 8051µc. Write an algorithm and program for glowing the LED “ON” and “OFF” on the press of a switch. | CO3 | 12 |
| b. | Mention the 4 ports of 8051µc and their multiple features. | CO2 | 8 |
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| 5. | a. | Briefly mention the important features of ARM coprocessor architecture. | CO4 | 6 |
| b. | Discuss about the ARM Programming model. | CO4 | 14 |
| (OR) | | | | |
| 6. |  | Discuss about 3 stage and 5 stage pipeline ARM Organization. Explain how 5 stage pipeline organization is better than 3 stage pipeline organization. | CO4 | 20 |
|  |  |  |  |  |
| 7. | a. | List down and briefly explain the 7 ARM Operating modes. | CO5 | 14 |
| b. | Mention the 3 groups of ARM Exceptions. | CO5 | 6 |
| (OR) | | | | |
| 8. |  | List down and explain any 10 ARM data processing instructions. | CO5 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | With a neat diagram explain the interfacing of an analog sensor or transducer with a microcontroller. Please write the relevant Algorithm and program also for the same. | CO6 | 20 |