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



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

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| **Code :** | **14EC2079** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MICROPROCESSORS AND MICROCONTROLLERS** | **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. | Explain the functional block of 8085 Microprocessor with neat diagram. | CO1 | 15 |
| b. | List the timing and control signals of 8085 Microprocessor. | CO1 | 5 |
| **(OR)** | | | | |
| 2. | a. | Explain the machine cycles for execution of the following 3-byte instructions with necessary timing diagrams.  4800 : STA 5203 | CO1 | 15 |
| b. | Identify the ‘A’ register content and flag status (S,Z,CY) as the following instructions are executed.  LXI H,2070H  MVI M,64H  MVI A,8FH  CMP M | CO1 | 5 |
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| 3. | a. | Show the block diagram of 8051 Microcontroller and explain each block in detail. | CO2 | 15 |
| b. | Explain the addressing modes of 8051 with examples. | CO2 | 5 |
| **(OR)** | | | | |
| 4. | a. | Show the memory interfacing diagram that connect 8K Byte EPROM and 8K Byte RAM to the microcontroller 8051. | CO3 | 12 |
| b. | Develop a program to unpack the number 63h stored in the memory location 4200H. Store the answers in 4201H and 4202H. | CO2 | 8 |
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| 5. | a. | Explain the different types of instruction set of 8051 Microcontroller. | CO2 | 12 |
| b. | Make use of the 8051 instruction sets to write a program to implement a half adder. | CO2 | 8 |
| **(OR)** | | | | |
| 6. |  | Explain the four modes of 8051 timers and also give the format of TMOD register. | CO2 | 20 |
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| 7. | a. | Explain how port 0 of 8051 serve as input, output and bidirectional low-order address and data bus for external memory with diagram. | CO2 | 15 |
| b. | Write the five types of interrupts of 8051. | CO2 | 5 |
| **(OR)** | | | | |
| 8. | a. | Develop a program for 8051 to transfer letter ‘A’ serially at 9600 baud rate continuously. | CO2 | 10 |
| b. | Explain the mode 1 operation of serial port of 8051. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. |  | With neat diagram, explain how Matrix keyboard is interfaced with 8051 Microcontroller. | CO3 | 20 |