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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination – June – 2017**

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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. | Illustrate the timing of data flow when the instruction  MOV C,A stored in memory location 2005H is being fetched. | CO2 | 10 |
| b. | Draw the detailed architectural diagram of 8085 Microprocessor and explain the function of each block. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Write a program to find the product of two 8 bit numbers using successive addition and display the result in memory address 4200H | CO2 | 10 |
| b. | List the addressing Modes of 8085 and explain them with examples | CO1 | 10 |
| 3. | a. | Identify the addressing mode followed in the following instructions:   1. MOV A, #45 2. MOV A, 25 3. MOV A, R3 4. MOV A,@R0 | CO2 | 4 |
|  | b. | Discuss about the Assembler directives. | CO2 | 6 |
|  | c. | Describe the port/pin configuration of 8051 Microcontroller. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | With a neat diagram, explain the architecture of 8051 Microcontroller | CO1 | 15 |
|  | b. | Compare Microprocessor and Microcontroller. | CO1 | 5 |
| 5. |  | Summarize the different group of instructions supported by 8051. Explain them with suitable examples. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Show the status of the CY, AC and P flag after the addition of   1. 38H and 20H 2. 87H and 79H | CO2 | 6 |
|  | b. | Briefly discuss the signed number concepts in 8051. | CO2 | 6 |
|  | c. | Outline the bit pattern of Program Status Word (PSW). | CO1 | 6 |
|  | d. | Compute the number of address lines required for a 16KB memory. | CO2 | 2 |
| 7. | a. | Write short notes on Serial communication feature of 8051. | CO3 | 10 |
|  | b. | Explain the interrupt structure of 8051. | CO3 | 10 |
| (OR) | | | | |
| 8. |  | Outline the format of timer mode control register TMOD and describe four modes of operations of 8051 timer. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | Design a circuit to interface stepper motor with 8051 Microcontroller. Write a program to rotate the stepper motor in the clockwise direction. Assume step angle of 30o | CO3 | 20 |

ALL THE BEST