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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **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. | Draw the block diagram of 8051 and explain each block in detail. | | CO1 | | 20 |
| (OR) | | | | | |
| 2. | a. | Draw the memory interfacing diagram to connect EPROM 2764 (8K BYTE) and RAM 62256 (32 K BYTE) to the microcontroller 8051. | CO1 | | 12 |
| b. | Analyze the program  MOV A,#0E7h  RR A  RR A  RR A  RR A  SWAP A  CLR C  RRC A  RRC A  Find the value in A. | CO3 | | 8 |
| 3. | a. | Explain the addressing modes of 8051 with examples. | CO1 | | 10 |
|  | b. | In a semester, a student has to take 6 courses. The marks of the student (out of 25) are stored in RAM locations 40H onwards. Find the average marks and ouput it on port 1. | CO3 | | 10 |
| (OR) | | | | | |
| 4. | 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. | A Switch is connected to pin P1.0 and an LED to pin P2.7. Write a program to get the status of the switch and send it to the LED and continue monitoring the switch status. | | CO3 | 5 |
| 5. | a. | Explain Mode 0 and Mode 1 Operation of 8051 Timer . | | CO2 | 15 |
|  | b. | Write a program to generate a square wave of 5KHz frequency on pin P1.6 | | CO3 | 5 |
| (OR) | | | | | |
| 6. | a. | Write a program for 8051to transfer letter ‘Y’ serially at 9600 baud rate continuously. | CO3 | | 10 |
|  | b. | Explain the mode 1 operation of serial port of 8051. | CO2 | | 10 |
| 7. | Draw the architecture of PIC16C74A microcontroller and explain each block in detail. | | CO1 | | 20 |
| (OR) | | | | | |
| 8 | a. | Explain the operation of Compare and Capture modesof PIC with necessary diagrams. | CO1 | | 10 |
|  | b. | Explain the byte, literal and control instructions (any 5 from each) of PIC16C74A Microcontroller. | CO1 | | 10 |
|  | | **Compulsory:** |  | |  |
| 9. | Explain with necessary diagrams, how ADC can be interfaced with a Microcontroller. | | CO2 | | 20 |

ALL THE BEST