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 – April / May – 2017**

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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. |  | Explain the Architecture of 8051 Microcontroller with neat block diagram. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Draw the memory interfacing diagram to connect EPROM 2764 (4K BYTE) and RAM 62256 (32 K BYTE) to the microcontroller 8051. | CO1 | 12 |
| b. | Analyze the program  MOV A,#0F0h  MOV R0,#70h  ANL A,R0  MOV 15h,A  CPL A  ORL 15h,#88h  Give the final answer in 15h and A. | CO3 | 8 |
| 3. | a. | Explain the addressing modes of 8051 with examples. | CO1 | 10 |
|  | b. | Ten Hex numbers are stored in RAM locations 50H onwards. Write a program to find the biggest number and store in location 60H. | 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. Write a program to get the status of the switch and perform the following.   1. If switch =1, send a high to low pulse to pin P1.7 2. Continue monitoring the switch status. | CO3 | 5 |
| 5. | a. | Explain Modes of Operation of 8051 Timer. | CO2 | 15 |
|  | b. | Write a program to generate a square wave of 2KHz frequency on pin P1.5. | CO3 | 5 |
| (OR) | | | | |
| 6. | a. | Write a program for 8051to transfer letter ‘A’ 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 Timer0 and Timer 1 modulesof 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 Keyboard can be interfaced with a Microcontroller. | CO2 | 20 |