Reg.No. _____

**Karunya 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

**Semester : 2016-17 ODD**
**Code : 14EC2015** **Duration : 3hrs**
**Sub. Name : Microcontroller and its Applications** **Max. marks : 100**

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**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

| Q. No. | Sub Div. | Questions | Course Outcome | Marks |
|---|---|---|---|---|
| 1. | a. | 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<br>MOV A,#0E7h<br>RR A<br>RR A<br>RR A<br>RR A<br>SWAP A<br>CLR C<br>RRC A<br>RRC A<br>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. | a. | Draw the architecture of PIC16C74A microcontroller and explain each block in detail | CO1 | 20 |
| | | (OR) | | |
| 8 | a. | Explain the operation of Compare and Capture modes of PIC with necessary diagrams. | CO1 | 10 |
| | b. | Explain the byte, literal and control instructions (any 5 from each) of PIC16C74A Microcontroller. | CO1 | 10 |
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| | | **Compulsory:** | | |
| 9. | a. | Explain with necessary diagrams, how ADC can be interfaced with a Microcontroller. | CO2 | 20 |

ALL THE BEST