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

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

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

**Supplementary Examinations – June 2016**

**Subject Title: MICROCONTROLLER AND ITS APPLICATIONS Time : 3 hours**

**Subject Code: 14EC2015 Maximum Marks: 100**

1. a. Differentiate Microprocessors and Microcontrollers. (4)

b. Explain the various addressing modes in 8051 with examples. (10)

c. Write an ALP to transfer a block of 10 data’s from one memory location to another. (6)

(OR)

2. a. Write an ALP to check whether the given number 55H is odd or even. If even store it in

the memory location 3000H or store it in 2000H. (8)

b. Explain briefly the internal architecture of 8051 with a neat block diagram. (12)

3. a. What is an Interrupt? Explain briefly the steps involved to service an Interrupt. (6)

b. What is USART? Enumerate its importance with the help of its various special function registers (SFR’s) and also explain its different modes of operations supported by it. (14)

(OR)

4. a. Explain the different modes of Timer in 8051 Microcontroller. (10)

b. i. Draw the internal port structure of 8051 Microcontroller. (5)

ii. Draw the pin diagram of Intel 8051 Microcontroller and explain the function of its various ports. (5)

5. a. Explain briefly the internal block diagram of PIC 16CXX with a neat diagram. (15)

b. Write down the features of PIC 16CXX Microcontroller. (5)

(OR)

6. a. With the help of a neat block diagram, explain briefly the operation of Timer 2 in PIC 16CXX microcontroller and its associated registers. (10)

b. Explain the functions of all the ports available in PIC microcontroller. (10)

7. a. In which timer module does the pre-scalar shared with watchdog timer? Explain the function of the appropriate timer with a neat block diagram. (10)

b. Explain briefly the Register file structure of PIC 16C74A microcontroller with necessary diagrams. (10)

(OR)

8. a. Explain briefly the Interrupt logic of PIC Microcontrollers with its associated Interrupt control registers. (10)

b. Give the significance of bus protocols used in PIC microcontroller. Explain in detail about I2C communication. (10)

**Compulsory:**

9. a. Explain the operation of serial peripheral interface in PIC used for communicating with external peripheral devices. (10)

b. With a neat diagram explain how analog to digital converter is interfaced with PIC microcontroller. (10)