8. Write short notes on any *two* of the following :

(i) ADC

(ii) LED interfacing with 8051 μc

(iii) DAC. **20**

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B. Tech. EXAMINATION, May 2017

(Sixth Semester)

(Old Scheme) (Re-appear Only)

(BME)

ECE-312

MICROCONTROLLER & ITS APPLICATIONS

Time : 3 *Hours*] [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions.

1. (a) Differentiate Microcontroller and Microprocessors. **10**

(b) Write an assembly language program to add two 8 bit hexadecimal numbers stored in two consecutive locations and store the result at the third location using instructions of 8051 μc. **10**

2. With the help of suitable block diagram explain the architecture of 8051 microcontroller in detail. **20**

3. (a) What is Subroutine ? What are various types of subroutines we can employ in microcontrollers based applications ? **10**

(b) Briefly explain the different types of special function registers used in 8051 μc. **10**

4. (a) Briefly explain the address bus and databuss. How is 16 bit address available on address bus throughout the instruction execution ? **12**

(b) Explain four basic addressing modes of 8051 μc to address the data stored in the memory or register. **8**

5. (a) Explain the following instructions with suitable examples : **16**

(i) LJMP

(ii) DJNZ

(iii) ACALL

(iv) LCALL.

(b) Briefly explain the term interrupt by correlating it with 8051 μc. **4**

6. (a) Write a 8051 program to generate square wave of 2 kHz frequency on Pm P1.5 using timer 1. Assume XTAL = 11.0592 MHz. **10**

(b) Explain the serial data transmission modes of 8051 μc. **10**

7. (a) What is control word format of 8255 ? Write a program that reads data from port A of 8255 and writes data into port B. **10**

(b) Briefly explain the pin diagram of 8255 IC. **10**