M.Tech 1st Semester Examination
Jan. 2014
Subject – Advanced Microprocessors & Microcontrollers
Subject Code – ECL-501
Time Allowed: 03 hours.  Maximum Marks: 100

Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Question No. 1 is Compulsory and attempt any two questions from each section. All questions carry equal marks.

1(i) Write a program to complement the ACC 700 times.
(ii) Write a program to get 8 bit data from P1 and send it to ports P0, P2 and P3.
(iii) Find the value of PSW register after the execution of the instruction
    MOV A,#95
    ADD A, #120
(iv) Explain the difference between microprocessor and microcontroller.
(v) Describe the other family members of 8086 microprocessor in brief?  (5*4=20)

SECTION – A

2(a) Draw and explain the architecture of 8086 Microprocessor with the specifications of EU & BIU.  (12)
(b) Briefly discuss addressing modes of 8086 Microprocessor.  (8)

3(a) Write an Assembly Language Program for finding smallest number in a data array using 8086 Microprocessor.  (10)
(b) How will you interface a keyboard with 8086 Microprocessor?  (10)

4(a) Draw and explain the architecture of 80286 Microprocessor.  (12)
(b) Explain the operating modes of 80386 microprocessor.  (8)

SECTION – B

5. (a) Draw and explain the pin diagram of 8051 Microcontroller.  (12)
(b) Write a short note on Programming Model of 8051 Microcontroller.  (8)

6(a) Write a program to generate a square wave of 10 KHz using 8051.  (10)
    (Take XTAL Freq. 12 MHz)
(b) Write a short on the following Special Function Registers:
    i) TCON  (5)
    ii) IE  (5)

7a) Write a detailed note on case study of Stepper Motor Control.  (12)
(b) How will you interface any sensor with 8051 Microcontroller?  (8)