Seventh Semester B.Tech. Degree Examination, December 2016
(2013 Scheme)
13.701 – EMBEDDED SYSTEMS (E)

Time : 3 Hours Max. Marks : 100

PART – A

Answer all questions from Part A.

1. Explain the assembler directives of 8051.

2. Explain the features of an embedded system.

3. Explain the SFRs of 8051.

4. Describe serial communication of 8051.

5. Give an application based on 8051. (5x4=20 Marks)

PART – B

Answer any one question from each Module. (20x4=80 Marks)

Module – I

6. a) Describe the embedded system product development model. 10
    b) Give the current trends and challenges in the field of embedded system. 10

   OR

7. a) Explain the data structures of C programming. 10
    b) Write a note on:
       a) Assemblers
       b) Compilers
       c) Linkers
       d) Loaders 10

P.T.O.
Module – II

8. a) Explain the architecture of 8051 microcontroller.  
   b) Write a program in C to add two bytes and store the result in a memory location.  

   OR

9. a) Explain the addressing modes of 8051 using example.  
   b) Write a program in assembly language to move ten bytes of data from xx51 to xx71.

Module – III

10. a) Write a program in embedded C to generate a square pulse of period 2 ms.  
    b) Explain data transfer and logical instructions of 8051.  

    OR

11. a) Explain the counters of 8051.  
    b) Explain how serial port programming is done in 8051.

Module – IV

12. a) Using a neat diagram explain how DAC can be interfaced to 8051 and write a program to get a five step staircase waveform.  
    b) Explain the interrupts of 8051.  

    OR

13. a) Give the interfacing of 8051 with 8255 and give the address of Port A, Port B, Port C and control register.  
    b) Explain how a matrix keyboard can be interfaced to 8051 and how the key position is identified.