M.Tech(ECE) 2nd Semester Examination
June 2014
Embedded System Design - I
Subject Code: ECL-518

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: First question is compulsory. Attempt two questions from each section A and B.

Q1. A) What do you mean by “Set up” time and “Hold” time?
    B) What are the main goals which should be kept in mind while designing embedded systems?
    C) What do you mean by communication synthesis?
    D) What is the use of PCLATH in PIC Microcontrollers?
    E) What is the difference between SRAM & DRAM? (4x5=20)

SECTION A

Q2. A) What is DMA? Explain with suitable circuit diagram. (8)
    B) Write a detailed note on Embedded System Evolution trends. (12)

Q3. A) Write a short note on Hardware/Software Partitioning problem. (6)
    B) Write short notes on any two of the following: (14)
       i. LYCOS
       ii. COSMOS
       iii. POLIS

SECTION B

Q4. A) Write a short note on specification refinement. (7)
    B) Write a detailed note on Hardware/Software Co-Synthesis. (13)

Q5. A) Write a short note on Status register of PIC Microcontroller. (5)
    B) Explain the following instructions used in PIC Microcontroller:
       i) XORLW
       ii) BTFSC
       iii) RETFIE
       iv) MOVF
       v) INCFSZ (15)

Q6. A) Draw and explain the graph between write ability and storage performance of memories. (6)
    B) Write short notes on any two of the following: (14)
       i. I2C
       ii. CAN
       iii. USB

Q7. A) Write a short note on saving memory space and power. (8)
    B) Which are various considerations which should be kept in mind for basic design using a real time operating system? (12)