T4IT Embedded system
2014 sem VI

(OLD COURSE)
(3 Hours)

QP Code : NX-2601

[Total Marks : 100

N. B.: (1) Question **No. 1** is **compulsory**.
(2) Attempt **any four** from Question Nos. **2 to 7**.
(3) **Make** suitable **assumptions** wherever necessary and **state** the **assumptions** made.
(4) **Answers** to the **same question** must be written **together**.
(5) **Numbers** to the **right indicate marks**.
(6) **Draw** neat **labeled diagrams** wherever **necessary**.

1. a) Explain the benefits of good device driver design. 5
   b) "C has become the Language of embedded programmers". Justify. What are the advantages of writing embedded programs in assembly language? 5
   c) Write note on DRAM controllers. 5
   d) Explain the role of linker in designing embedded system. 5

2. a) Explain the common design requirements for a generic embedded system. 8
   b) What is the importance of control and status registers in embedded processors? 8
   c) What is the importance of an infinite loop in embedded system programs? 4

3. a) Explain the term "Task"? What are the different task states? Explain the role played by the operating system in handling these tasks. 8
   b) Explain how Watchdog Timers prevent the embedded system from software hangs. 8
   c) Write short note on : Application Programming Interface 4

4. a) Discuss the following circuit board problems with regards to functioning of memory in embedded systems 8
      i. Missing memory chips ii. Electrical wiring problems
   b) What is embedded system? Explain the characteristics of embedded system 8
   c) Write short note on ROM Emulator 4

5. a) Explain the stages involved in the embedded software development process in brief with proper diagram. 8
   b) Explain the working of remote debugger with an example. 8
   c) Write note on : Data bus testing. 4

6. a) What is Flash Memory? What are the advantages and disadvantages of Flash Memory? 8
   b) What is EPROM? How to write data into EPROM and how will you erase it? 8
   c) What is the difference between PC operating system and embedded operating system? 4

7. a) Draw a diagram of a generic embedded system and explain all the blocks present therein. 8
   b) Explain the characteristics of Real Time operating System. What are the advantages of commercial operating system? 8
   c) What do you understand by the term "Checksum"? 4