Roll No .....

MEVD-205

M.E/M.Tech., II Semester

Examination, June-2013

Embedded Computing System Design

Time : Three Hours

Maximum Marks : 70

Note: *Attempt any five questions.*
Each question carries equal marks.

1. a) Explain the Major operations of hardware and software architectures for the moving maps.

   b) Write short notes on structural description and behavioral description.

2. a) Draw and explain a UML class diagram for the train controller showing the composition of sub systems.

   b) Explain the meaning of these ARM condition codes.

   i) EQ ii) NE

   iii) MI iv) VS

   v) GE vi) LT

3. a) Differentiate between slow and fast returns in the C55X?

   b) Explain ARM processor and memory organisation. How do you return from as ARM procedure.

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4. a) Explain CPU BUS and Bus protocols. Draw a UML sequence diagram that shows a four-cycle handshake between a bus master and a device.

   b) What are the sources of power consumption in COMS based CPU? Explain briefly.

5. a) How the CPU performance can be improved by pipelining, super scalar execution and caching?

   b) Explain in detail control data flow graphs (CDFG) model for programs with example.

6. a) Describe assembly, linking and loading steps in the compilation process with the help of block diagram.

   b) How the size of program can be optimized? Describe any one technique for code compression.

7. a) What do you understand by design methodology? What are the basic goals for design process for embedded computing systems?

   b) Discuss quality assurance and various techniques of quality assurance in brief.

8. Write short notes on (any two) :

   a) Development and Debugging of embedded system.

   b) Software modem

   c) Embedded system design process