Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MEVD-205

M.E/M.Tech., II Semester

Examination, December 2016

Embedded Computing System Design

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) Each question carries equal marks.

1. a) Describe the embedded computer systems? Write challenges in Embedded Computing System Design. 7
   b) Briefly describe the distinction between specification and architecture. 7

2. a) What is the difference between the Harvard and Von Neumann architectures? Explain with the help of figures. 7
   b) What is the meaning of these ARM condition codes? 7
   i) EQ ii) NE
   iii) MI iv) VS
   v) GE vi) LT

3. a) What are the stages in an ARM pipeline? Draw two pipeline diagrams showing what happens when an ARM BZ instruction is taken and not taken, respectively. 7
   b) What is the difference between latency and throughput? Name three mechanisms by which a CMOS microprocessor consumes power. 7

4. a) With the help of a suitable figure explain the compilation process to understand how a high-level language program is translated into instructions. 7
   b) Write and Explain different techniques of program optimization. 7

5. a) Explain the two major types of testing strategies: Black-box and Clear-box testing. 7
   b) Write a short note on Software Modem. 7

6. a) Explain the term system design. Draw and describe the successive refinement model of software development. 7
   b) Describe the "SDL language" used as state machine specification language. 7

7. a) What are the steps needed during the analysis of a system by CRC card methodology. 7
   b) What are the main phases of a design review? 7

8. Write short notes on any two of the followings: 14
   a) SHARC processor
   b) CPU Bus Protocols in ARM
   c) Embedded system for Automobile applications

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