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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
First Semester, M. Tech - Electronics and Communication Engineering
(VLSI Design and Embedded System)
Semester End Examination; Jan/Feb. - 2016
Advanced Embedded System

Time: 3 hrs *Max. Marks: 100*

*Note : Answer **FIVE** full questions, selecting **ONE** full question from each **unit**.*

UNIT - I

1 a. Compare :

   (i) SRAM and DRAM

   (ii) RISC and CISC architectures   10

  b. With a block schematic, explain the various components/units used in an embedded system architecture.   10

2 a. Briefly explain any 5 characteristics and any 5 operational quality attributes.   10

  b. Explain the 5 non-operational quality attributes and PLC curve with a diagram.   10

UNIT - II

3 a. With a diagram, explain FSM model for coin operated telephone system. How FSM differs from sequential program model?   10

  b. Distinguish between :

   (i) DFG and CDFG

   (ii) Structural and behavioral things with examples.   10

4 a. Explain the 2 approaches for the embedded firmware design with their merits/ demerits.   10

  b. With a block diagram, explain HLP based embedded system design for firmware with its advantages and disadvantages.   10

UNIT - III

5 a. Distinguish between :

   (i) Monolithic Kernel and Micro Kernel

   (ii) Process and Thread   10

  b. With a state diagram, explain the task state transition and also the structure of a process and memory organization.   10

6 a. Describe FCFS scheduling with an example. Determine the performance factors.   10

  b. Explain :

   (i) Task Synchronization

   (ii) Device driver   10

UNIT - IV

7 a. Mention the various components and its functions in brief with a diagram for IDE for an embedded system.   10

   b. Describe list file and preprocessor output files generated during compilation.   10

8 a. Explain the MAP file and the HEX files generated during cross compilation.   10

   b. Describe :

   (i) SIMULATOR   and   10

   (ii) Boundary SCAN Procedure.

UNIT - V

9 a. Describe waterfall model for EDLC.   10

   b. Explain the processer trends in Embedded System Design.   10

10 a. Describe spiral model for EDLC. Also, Mention the various phases of EDLC in a diagrammatic form.   10

   b. Explain the language trends in the software design for an embedded system. Mention the open standards for mobile industry.   10

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