R09

Code No: C7704, C6804, C5704
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, March/April - 2011
ALGORITHMS FOR VLSI DESIGN AUTOMATION
(COMMON TO EMBEDDED SYSTEMS & VLSI DESIGN, VLSI & EMBEDDED
SYSTEMS, VLSI SYSTEM DESIGN)

Time: 3hours   **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

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1.a)   What are the important entities for VLSI Design?
  b)   Explain how a Depth-first search algorithm is used to reduce the computational
       complexity.   [6+6]

2.a)   What is principle of Branch and found technique for finding the optimal solution
       of a combinatorial optimization problem?
  b)   Explain how a genetic Algorithm is used for search & solution of a given
       problem?   [6+6]

3.a)   What are the applications of layout compaction?
  b)   Explain the various optimization problems in Floor planning.   [6+6]

4.a)   What type of minimum distance rules used is VLSI design?
  b)   What type of problems present in placement? Explain them with examples.[6+6]

5.a)   What is the principle of ROBDD?
  b)   Explain how OBDD size is reduced to obtain ROBDD?
  c)   Explain how ROBDDS can be used for logic verifications?   [12]

6.a)   What type of Hardware components can be used by a high level synthesis
       systems?
  b)   Explain how the ASAP scheduling algorithm is used to find the longest path?

                                                                         [6+6]
7.a)   How the routing network is modeled in FPGA?
  b)   Discuss the routing Algorithm for staggered model and compare it with
       segmentation model.   [6+6]

8.a)   What are the various steps in MCM physical design cycle? Explain them briefly.
  b)   Explain the method of topological routing for general MCM.   [6+6]

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