

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**

- - -

- 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 bound 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 in 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]