

22.04.14 (AN)

B.E. / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2014
ELECTRONICS AND COMMUNICATION ENGINEERING BRANCH
EIGHTH SEMESTER
EC 9045 – CAD for VLSI
(REGULATIONS 2008)

Time: 3 Hours

Max. Marks:100

Answer All Questions

PART-A

(10x2=20)

1. List out the different entities need to be optimized in the VLSI design process.
2. What are the ways of checking the correctness of an integrated circuit without actually fabricating it?
3. List the classes of computational complexity in increasing order of time.
4. Write the steps in proving that a certain problem is NP-complete.
5. What are the general purpose heuristics that do not guarantee an optimal solution?
6. Write the most common types of minimum distance rules.
7. Draw the schematics of an RS-Latch.
8. Write the names of optimization problems related to floor planning.
9. List out the four important parameters of local routing problems.
10. What are the software modules constitute a simulator?

PART-B

(5x16=80)

- 11 (i) Explain the Prim's Algorithm for the construction of minimum spanning tree.
(ii) Describe in detail about the various VLSI design automation tools in the physical design cycle.
- 12 (a) Discuss in detail about the design methodology based on top-down structural decomposition and bottom-top layout reconstruction with the help of Y chart.

(OR)

- (b) Explain the different steps of the breadth –first search algorithm.

13 (a) Explain the features of the combinational optimization problem.

(OR)

(b) Explain the backtracking algorithm for the Travelling salesman algorithm.

14 (a) Explain the algorithm that partitions the edge set E of the constraint graph (V,E) into two sets proposed by Liao-Won.

(OR)

(b) Compute the positive co-factor of an ROBDD. List out the various factors.

15 (a) What is meant by 'floor plan of order 5'. Explain.

(OR)

(b) Draw the structure of the different hardware components used by a high-level synthesis system.