

7E7034

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**B.Tech. VII Semester (Main) Examination, Dec. - 2015**  
**Computer Science & Engineering**  
**7CS4A Computer Aided Design for VLSI**

**Time : 3 Hours**

**Maximum Marks : 80**

**Min. Passing Marks : 24**

**Instructions to Candidates:**

*Attempt any **five** questions, selecting one question from **each unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

**Unit - I**

1. a) What are the different semi-custom design styles for circuits? (8)
- b) Explain the four phases in creating micro electronics chips in computer aided synthesis and optimization. (8)

**OR**

1. a) What are the various views and levels of the micro electronic circuit models. Also express the relation between them. (8)
- b) Compare the following task realization approaches:
  - i) Full custom
  - ii) Semi custom.
  - iii) Off the shelf IC package
  - iv) Off the shelf micro computer. (2×4=8)

## Unit - II

2. a) What is Binary decision diagram? Explain ROBDD algorithm. (8)
- b) Explain the compilation and behavioral optimizations. (8)

OR

2. a) Explain ITE algorithm and QUANTIFY algorithm. (8)
- b) Write short note on:
- i) Abstract models
- ii) Hierarchical sequencing graphs. (4×2=8)

## Unit - III

3. a) Explain ASAP scheduling algorithm using one example. (8)
- b) Distinguish between temporal and spatial domain scheduling. Give one example explaining resource binding in hierarchical sequencing graph. (8)

OR

3. a) Explain Heuristic scheduling algorithm with example, show optimum schedule under resource constraints. (8)
- b) Discuss the classification and categories of resource and constraints with the help of examples. (8)

## Unit - IV

4. a) Explain resource sharing and resource binding. What are compatibility and conflict graphs? (8)
- b) Write the algorithm for exact logic minimization with an example. (8)

OR

4. a) Explain register sharing and bus sharing with the help of example. (8)
- b) State and explain the principles of logic optimization. (8)

**Unit - V**

5. a) Explain physical design cycle with appropriate diagram. (8)
- b) Explain Global routing along with goals and objectives. (8)

**OR**

5. a) Explain left edge algorithm with an example. (8)
- b) Explain clock routing, power routing and via minimization. (8)