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7E4240

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# 7E4240

B. Tech. (Sem. VII) (Main) Examination, December-2012

**Computer Engg.**

**7CS4 Computer Aided Design for VLSI**

Time : 3 Hours] [Total Marks : 80

[Min. Passing Marks : 24

*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.*

Use of following supporting material is permitted during examination.

*(Mentioned in form No. 205)*

1. Nil

2. Nil

## UNIT - I

1 What is Moore's law ? Explain the design styles in detail. With the comparison in the performance and design measures of different design styles. **16**

**OR**

1 Explain programmable logic devices in detail. Also explain the design flow process of microelectronic circuit with the appropriate diagram. **16**

## UNIT - II

2 Consider the given function

$$f = ab + bc + ca$$

Find out the cofactor's with respect to 'C' also find the Boolean derivative consensus and smoothing also represent these all in 3D Boolean space. **16**

**OR**

2 (a) Explain Data flow graph and sequencing graph's with the help of an appropriate example. 8

(b) What is optimization ? Explain the optimization techniques for digital circuits. 8

## UNIT - III

3 (a) Describe Resources and constraints in detail. 6

(b) Explain latercy constrained scheduling and resource constrained scheduling with the help of an example. 10

**OR**

3 (a) What is synchronization problem ? Explain with the help of an example.. 6

(b) Explain Integer linear programming model in detail. 10

## UNIT - IV

4 (a) Write the algorithm for exact logic minimization with an example. 6

(b) Define logic optimization principles with necessary definitions also write a short note on unate functions. 10

**OR**

4 (a) Explain sharing and Binding for resource dominated circuits in detail also write down left edge algorithm. 10

(b) Write short note on positional cube notations. 6

## UNIT - V

5 (a) Define floor planning. Write goals and objectives of floor planning. 8

(b) What is global routing ? Explain the methods used for global routing in detail. 8

**OR**

5 Write short notes on :

(a) Design Rule Checking. 6

(b) Channel Routing algorithm. 5

(c) Interactive improvement algorithms. 5