C.U.SHAH UNIVERSITY
Summer Examination-2017

Subject Name: VLSI Design Automation
Subject Code: 5TE02VDA1   **Branch: M.Tech (VESD)**

Semester: 2   **Date: 12/05/2017**   **Time: 02:00 To 05:00**   **Marks: 70**

Instructions:
   (1) Use of Programmable calculator and any other electronic instrument is prohibited.
   (2) Instructions written on main answer book are strictly to be obeyed.
   (3) Draw neat diagrams and figures (if necessary) at right places.
   (4) Assume suitable data if needed.

SECTION – I

Q-1	**Define the following terms**	**(07)**
a.	Silicon Wafer.	
b.	SSI	
c.	Rip-up and Re-route	
d.	Physical design process	
e.	Bipartite graph	
f.	Arbitrary Terminal Model.	
g.	Hypergraph	

Q-2	**Attempt all questions**	**(14)**
(a)	Explain Physical VLSI Design Cycle.	
(b)	Explain Fabrication process of CMOS.	

OR

Q-2	**Attempt all questions**	**(14)**
(a)	Explain any two Graph search algorithms.	
(b)	Explain Strainer tree algorithm with example.	

Q-3	**Attempt all questions**	**(14)**
(a)	Explain Spanning tree algorithm with example.	
(b)	Explain atomic operations for data structure layout editor.	

OR

Q-3	**Attempt all questions**	**(14)**
(a)	Explain line sweep and extended line sweep algorithm.	
(b)	Explain Bin Based method for data structure.	

SECTION – II

Q-4 **Define the following terms** (07)
   a. Partitioning.
   b. Terminal pitch.
   c. Bisectioning.
   d. Simulated Annealing.
   e. Slicing floorplan.
   f. Slicing tree.
   g. Rectangular dualization.

Q-5 **Attempt all questions** (14)
   (a) Explain in detail Chip Level Partitioning.
   (b) Explain the Kernighan-Lin Algorithm of partitioning

OR

Q-5 **Attempt all questions** (14)
   (a) Draw and explain the Hierarchical Tree Based Methods.
   (b) Explain in detail the Integer Programming Based Floorplanning.

Q-6 **Attempt all questions** (14)
   (a) Explain the basic Sequence-Pair Technique of placement.
   (b) Explain the Design Style Specific Global Routing Problems.

OR

Q-6 **Attempt all Questions** (14)
   (a) Draw and explain Lee's Algorithm of routing.
   (b) Draw and explain the Single-Layer Routing Algorithms.