Code No: B5701 **NR**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech II - Semester Examinations October / November 2011
ALGORITHMS FOR VLSI DESIGN AUTOMATION
(VLSI SYSTEM DESIGN)

Time: 3hours **Max.Marks:60**

Answer any five questions
All questions carry equal marks
- - -

1. Find the Spanning tree for the graph shown in figure 1 using Prim's algorithm. Explain the procedure. [12]

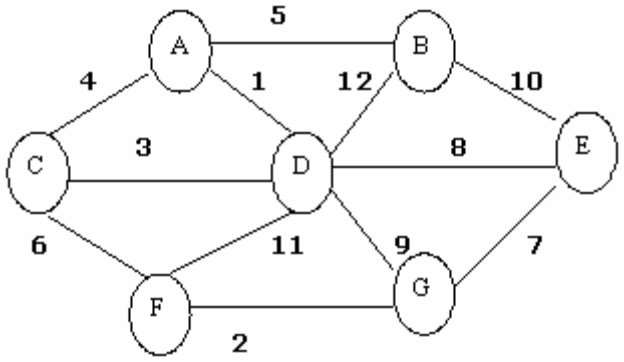

figure 1

2. Find the Shortest path from node "A" to node "D" in the following graph shown in figure 2, using Dijkstra's Algorithm. Explain the procedure for finding the required path. [12]

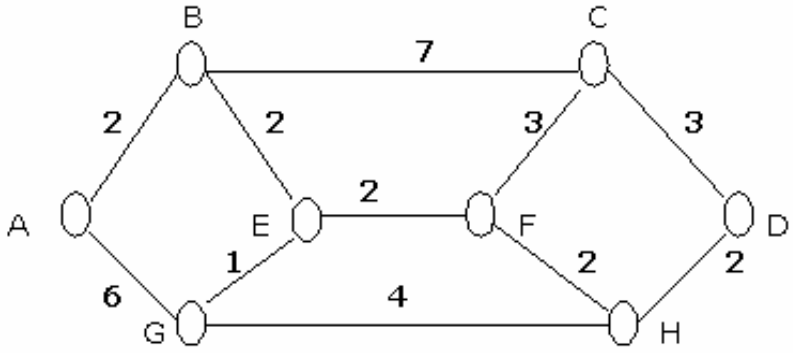

figure 2

3. Explain
   (i) Simulated Annealing
   (ii) Local Search methods used for combinatorial Optimization. [12]

Contd….2

4. For the following grid graph shown in figure 3, determine the minimum weight Steiner Tree corresponding to the net (a,b,c,d,e). The integers given are the weights of edges. [12]

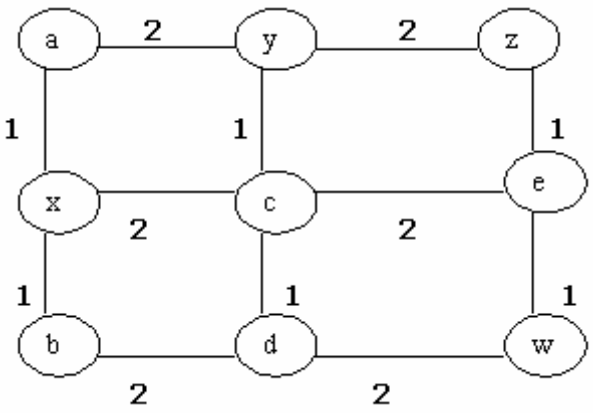

figure 3

5. For the following Floor plan shown in figure 4, give the possible slicing Tree representations and the corresponding polish expressions. [12]

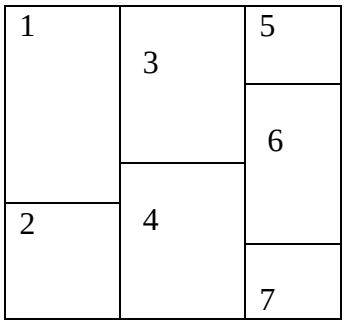

figure 4

6. Construct the Horizontal Constraint Graph and Vertical Constraint Graph for the following given Routing Problem shown in figure 5. [12]

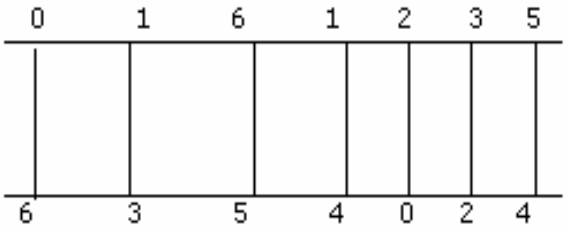

figure 5

7. Explain about various types of logic blocks with respect to FPGA architectures. [12]

8. Write about MCM physical Design Cycles. [12]

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