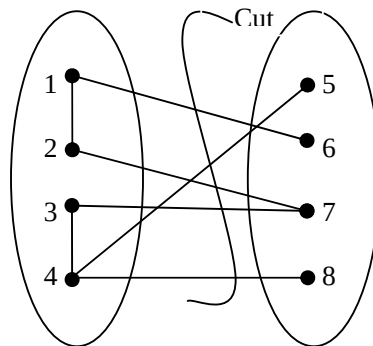


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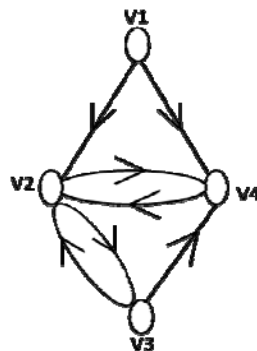
Subject code: 714202N**Date: 26-12-2013****Subject Name: Applied Algorithm for VLSI CAD****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full mark.

- Q.1 (a)** With reference to Graph Theory define the following terms. **07**
- (1) Mixed Graph (2) Adjacent Nodes (3) Loop
 (4) Isolated Node (5) Degree of Node
 (6) Strong Component (7) Simple Path
- (b)** Solve the Following example by using K-L Algorithm. **07**

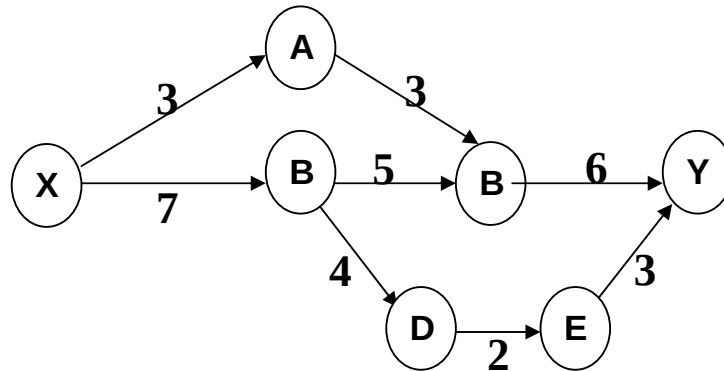


- Q.2 (a)** State and prove the Theorem 1 and Theorem 2 for Graph Theory. **07**
- (b)** Explain the different objectives and constraints of Routing **07**
- OR**
- (b)** Explain the following terms with respect to Floor planning. **07**
- (1) Rectangular Dissection (2) Slicing Structure (3) Slicing Tree.
- Q.3 (a)** List down the different Layout Styles. Explain any two in detail. **07**
- (b)** Find the Adjacency Matrix (A) for the following Graph. Also find out the in degree and out degree of each node by using Transpose (A^T) of the A. **07**

**OR**

- Q.3 (a)** Explain Hadlock's algorithm. **07**
- (b)** Explain the principal Difference and similarities between Kernighan-Lin and Fiduccia-Mattheyses Heuristics. **07**

- Q.4 (a)** For given network find the maximum flow using Ford Fulkerson Algorithm. **07**



- (b)** Explain the Global Routing by Simulated Annealing. **07**

OR

- Q.4 (a)** What are the major drawbacks of Lee's Algorithm and how Line Search Algorithm differs from it? **07**

- Q.4 (b)** Explain The following terms. **07**

- (1) Polynomial-time algorithm. (2) Space Complexity. (3) Net.
 (3) Time Complexity. (5) NP-complete problem (6) Pin
 (7) Base Cell.

- Q.5 (a)** Explain the Polar and Channel intersection graph in floor planning. **07**

- (b)** Discuss the various Cost Function and Constraints for Placement. **07**

OR

- Q.5 (a)** Explain the basic Left-Edge Algorithm for Channel Routing. **07**

- (b)** Compare Genetic Algorithm with Conventional Algorithms. **07**
