

**SV-200**

**Total No. of Pages : 3**

Seat No.	
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**T.E. (CSE) (Part - III) (Semester - V) (Revised)**

**Examination, April -2018**

**COMPUTER ALGORITHM**

**Sub. Code : 66296**

**Day and Date : Friday, 27 - 04 - 2018**

**Total Marks : 100**

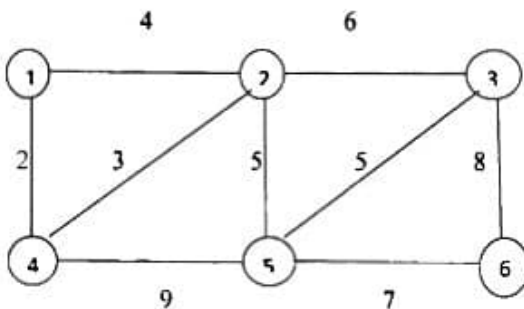
**Time : 10.00 a.m to 1.00 p.m.**

- Instructions :**
- 1) Questions 4 and 8 are compulsory.
  - 2) Attempt any four questions from remaining questions.
  - 3) Figure to the right indicate full marks.
  - 4) Assume suitable data wherever necessary.

**Q1) a) Explain Performance analysis and Performance measurement. [8]**

b) Show that the complexity of Binary Search is  $O(\log n)$  for successful search and unsuccessful search. [8]

**Q2) a) Apply Prim's algorithm to find out minimum cost spanning tree for the following graph. [8]**

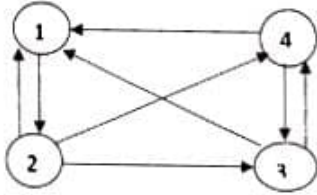


b) Write and explain the algorithm for Multistage graph using backward approach. [8]

**P.T.O.**

**Q3) a)** Explain Merge sort Algorithm using divide and conquer technique and show that its complexity is  $O(n \log n)$ . [8]

b) Find the solution to all pairs shortest path problem using dynamic programming. [8]



$$\begin{pmatrix} 0 & 5 & \infty & \infty \\ 50 & 0 & 15 & 5 \\ 30 & \infty & 0 & 15 \\ 15 & \infty & 5 & 0 \end{pmatrix}$$

**Q4)** Write short note on.

[18]

- a) Knapsack 0/1
- b) Selection Algorithm
- c) Huffman's Code

**Q5) a)** Explain Pre-order, In-order and Post-order traversal techniques for binary tree. [8]

b) List and explain NP-Hard graph problem. [8]

**Q6) a)** Explain N queen problem and write an algorithm to test no two queens are placed in the same diagonal, same column and same row. [8]

b) Explain non deterministic Knapsack problem and non deterministic Maximum clique problem. [8]

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**Q7) a)** Define an articulation point how non-connected graph can be converted to bi-connected graph. **[8]**

b) Explain PRAM computational model. **[8]**

**Q8) Write short note on:** **[18]**

a) Graph Coloring.

b) Broadcasting with Mesh and Hypercube.

c) Prefix sum computation in Hypercube.

