Prelim Paper **Analysis of Algorithms**

Time: 3 Hrs.] **[Marks : 80**

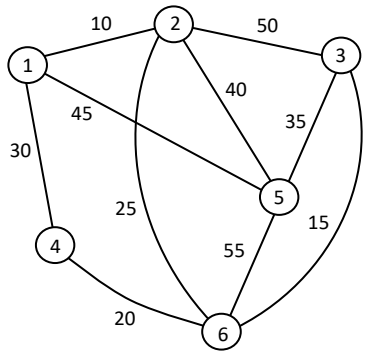
N.B.: (1) Q.1 is compulsory.
(2) Attempt any three from remaining five questions.

1. (a) Explain Complexity classes and polynomial time algorithms. **05**
(b) Explain general method for greedy algorithms. **05**
(c) Explain optimal storage of tapes. **05**
(d) Implement binary search and derive its completely. **05**

2. (a) Explain how to fund maximum and minimum value in an array using Divide and Longer. **10**
(b) Explain stresses matrix multiplication. **10**

3. (a) Explain single source (Bellman Ford) Algorithm with an example. **10**
(b) Explain flowshop scheduling worth example. **10**

4. (a) Find the MCST (Minimum Cost Spanning tree) of given graph. **10**



(b) Explain 8 queens problem with reference to backtracking **10**

5. (a) Explain sum of subsets problem and its solution using backtracking **10**
(b) Explain 15 puzzle problem with respect to branch and bound. **10**

6. Write short notes on : **20**
(a) Rabbin Karp string matching algorithm
(b) LCS (Longest Common Subsequence)
(c) Merge sort and its complexity
(d) Proof of vertex cover problem as NP problem

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